No. 2013-1021, -1022

IN THE

United States Court of Appeals for the Federal Circuit

ORACLE AMERICA, INC.,

Plaintiff-Appellant,

v.

GOOGLE INC.,

Defendant-Cross Appellant.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA, CASE NO. 10-CV-3561, HON. WILLIAM H. ALSUP

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2. That is the real name of the real party in interest.

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STATEMENT OF RELATED CASES

Defendant-Cross-Appellant Google, Inc., filed a writ of mandamus in this Court on November 8, 2011. Petition for a Writ of Mandamus, *In re Google Inc.*, 462 F. App'x 975 (Fed. Cir. 2012) (No. 2012-M106). The petition arose from the district court's denial of Google's assertion of privilege over an email that stated in relevant part: "What we've actually been asked to do (by [Google co-founders] Larry and Sergei [sic]) is to investigate what technical alternatives exist to Java for Android and Chrome. We've been over a bunch of these, and think they all suck. We conclude that we need to negotiate a license for Java under the terms we need." *Id.* at 976.

This Court (Judges Lourie, Prost, and Moore) agreed with the district court that the email was not privileged and denied the writ. *Id.* at 977-79.

No other appeal from this civil action was previously before this Court or any other appellate court. There is no case pending in this Court or any other court that will directly affect or be directly affected by the Court's decision here. There are no other cases related to this dispute.

INTRODUCTION

Ann Droid wants to publish a bestseller. So she sits down with an advance copy of *Harry Potter and the Order of the Phoenix*—the fifth book—and proceeds to transcribe. She verbatim copies all the chapter titles—from Chapter 1 ("Dudley Demented") to Chapter 38 ("The Second War Begins"). She copies verbatim the topic sentences of each paragraph, starting from the first (highly descriptive) one and continuing, in order, to the last, simple one ("Harry nodded."). She then paraphrases the rest of each paragraph. She rushes the competing version to press before the original under the title: *Ann Droid's Harry Potter 5.0*. The knockoff flies off the shelves.

J.K. Rowling sues for copyright infringement. Ann's defenses: "But I wrote most of the words from scratch. Besides, this was fair use, because I copied only the portions necessary to tap into the Harry Potter fan base."

Obviously, the defenses would fail.

Defendant Google Inc. has copied a blockbuster literary work just as surely, and as improperly, as Ann Droid—and has offered the same defenses. The work was authored by software developers at Sun

Microsystems, Inc., now Oracle America, Inc.[1] Sun's developers spent years refining, writing, organizing, and promoting packages of computer source code to help outside application ("app") programmers write new computer programs in the Java language faster and more efficiently by just incorporating the packages into their own Java programs. The packages were wildly popular, largely because they were written and organized in a way that made intuitive sense. A community of millions of application programmers coalesced around them. But everyone—IBM, Sony, Cisco, Red Hat, and others—understood that no one was allowed to use the packages without a license from Sun/Oracle.

Enter Google. Google was late to the smartphone market. Google's top brass was desperate to develop its own mobile platform: Android. They concluded that the platform needed to include Sun's popular Java packages. As one email to Google executives indelicately put it, the alternatives "all suck[ed]." A1168.

[1] In 2009, Oracle purchased Sun mainly for the value of the Java platform at issue here. A20,514, 20,689-90. Accordingly, this brief will occasionally refer to Sun/Oracle's contributions and policies and, for simplicity, the argument section will refer to Oracle as if it had been the author throughout.

Google executives agreed that they "[m]ust take a license from Sun," A1132, because "[S]un … own[s] the brand and the IP," A1200-01. But Google rejected the key terms that every other licensee accepted. Then, it just copied Sun's work. Google admits that it literally copied into Android thousands of lines of original Sun/Oracle source code. The code Google copied embodied the elements and the detailed, complex structure and design of 37 packages of code, essentially the chapter and subchapter headings and the topic sentences from those packages—all copied verbatim. Google then paraphrased the rest.

The copying enabled Google to rush Android to market. It also made Android instantly familiar to the programming community Sun fostered. So millions of programmers who came of age on Sun's Java source code, nomenclature, and organization eagerly wrote apps for Android. That helped make Android a phenomenal commercial success.

Had Google done exactly the same thing with a novel or a symphony, there would be no doubt that it copied protectable expression—both as to the large volume of work copied and the work's organization. Copyright protects a short poem or even a Chinese menu or jingle. But the copied works here were vastly more original, creative, and labor-intensive. Nevertheless, the district court stripped them of all copyright protection. The court saw this software as just different. It believed that each line of source code Google copied is an unprotectable "method of operation," 17 U.S.C. § 102(b), because it is just a command to carry out a pre-assigned function.

This notion of software exceptionalism for any code is wrong. Congress chose to protect computer programs under copyright law. As this Court recognized in *Atari Games Corp. v. Nintendo of America, Inc.*, 975 F.2d 832 (1992), software code is protectable expression because authors select and arrange lines of source code in an original way. *Id.* at 838. Under *Atari*, copyright law recognizes no difference between original expression embodied in the topic sentences or organization of *Harry Potter* and original expression embodied in like features in software. This Court should reverse the district court's basic legal error.

But this Court should go a step further and reject Google's fair-use defense as a matter of law. A commercial competitor may not copy verbatim crucial features of another's expression, depriving the original author of a potential market for the work. Google copied the source code upon which programmers most rely, incorporated that code into a competing mobile platform, and competed directly with Oracle which was already profiting from licensing the packages for mobile devices. That is decidedly unfair.

If, as the Supreme Court explained, "the best way to advance public welfare" is to "encourage[]" authors to engage in "individual effort by" offering them "personal gain," *Mazer v. Stein*, 347 U.S. 201, 219 (1954); *see* U.S. Const. art. I, § 8, the principle applies at least as much to software as to novels and Chinese menus. Oracle would never have revolutionized the computer world if it knew up front that a court would find that "the public w[as] and remain[s] free to" co-opt its work for financial gain. A165. J.K. Rowling does not write blockbusters for everyone to knock off. Neither will innovators like Oracle.

JURISDICTIONAL STATEMENT

The district court had jurisdiction under 28 U.S.C. §§ 1331, 1338(a), and entered final judgment on June 20, 2012. A171-72. The parties moved for judgment as a matter of law or, alternatively, a new trial. A1077-111, 1112-18. The court denied the final post-trial motion on September 4, 2012. A1119. Oracle timely appealed on October 3, 2012, and Google cross-appealed. A1120-23; Fed. R. App. P. 4(a)(1)(A), 4(a)(4)(A)(i). Because this action included patent claims, *infra* at 29 n.3, this Court has jurisdiction under 28 U.S.C. § 1295(a)(1).

STATEMENT OF THE ISSUES

1. Google copied thousands of lines of Oracle source code arranged in a manner that users find attractive. The district court found the code and the structure and organization it embodied original and creative. Does the Copyright Act protect the expression that Google copied?

2. Google inserted the code it copied (and the corresponding structure) into a commercial product in a market where Oracle was already competing. Does Google's fair-use defense fail as a matter of law?

STATEMENT OF THE CASE

Oracle sued Google in the U.S. District Court for the Northern District of California, alleging that Google's Android mobile operating system infringed Oracle's copyrights and patents. A336-47, 524-35. The jury found no patent infringement. A1069-70. But the jury found that Google infringed Oracle's copyright in the packages and a specific computer routine (called “rangeCheck”). A41-43. The jury hung on Google’s fair-use defense. *Id.* Thereafter, the district court ruled that the infringed code and organization of the 37 packages were devoid of copyright protection. A163-70. It also denied Oracle’s motion for judgment as a matter of law on fair use. A129.

STATEMENT OF FACTS

Sun Revolutionizes Computer Programming With Java And Its Packages Of Prewritten Programs

For years, computer programmers had to pick one platform when writing new programs. A20,463, 20,529-31. Computer giants like Apple and Microsoft had developed their own versions of programming languages. Thus, “when you wrote a program for [a] Microsoft Windows computer, that program would not run on … an Apple MacIntosh computer.” A20,463. “So if you want something that ran on Windows and … Apple … , you would have to write that program twice.” *Id.*; *accord* A20,529-31.

Sun developers changed all that with the Java platform. Released in 1996, a distinguishing feature of the Java platform is the “virtual machine," which allows programmers "to write programs that … run on different types of computer hardware without having to rewrite them." A133. A programmer could now write a program once and it would run on any device with a Java virtual machine regardless of operating system. A20,549, 20,676-77. "Write once, run anywhere" became Java's credo. A20,888-89, 20,463-64, 22,132.

Sun developers wrote a vast array of Java programs to perform often-needed functions and organized those programs into "packages." A134, 139. Each package is arranged in an intricate hierarchy (more on that below) and consists of numerous modules of "tried-and-true pre-packaged programs" comprising a vast arrangement of functions. A141. These packages were a huge benefit to programmers writing apps for all sorts of devices. Whatever the problem, the programmer does not have to "re-invent[] the wheel[]" to write a solution. *Id.* The parties and the district court often called these software packages "APIs."

TERMINOLOGY CLARIFICATION: "***API***," which stands for "application programming interface," is confusing because it is a verbal chameleon. It can describe a trivial communication protocol to pass information between programs. Or it can describe sophisticated computer programs, like the ones Sun wrote. Even in this case, the parties and court confusingly applied the same label to describe both the entire set of Java packages, *see, e.g.,* A131-32, 134-36, and a single package of Java source code, *see, e.g.,* A131-32, 167-68. To avoid confusion, we refer more precisely to what we are describing: a "package" or "packages" of source code.

Also, for ease of reference, this brief uses the term "***developers***" for software engineers who write new code for the Java platform and its packages, and "***programmers***" for those who *use* the Java packages to write new apps.

By way of illustration, in one package, Sun developers wrote a program called "URLConnection" to establish an internet connection (e.g., to a bank or store website). A10,013-28; 20,753-54. As simple as that sounds, it is exceedingly complex. Developers needed special expertise to write the network protocol and cryptographic algorithms. Once they did their work, a programmer wishing to write a program that connects to, say, BankofAmerica.com, could either (1) reinvent the wheel, writing his own algorithms or (2) simply "declare"—i.e., type—"new URL('http://bankofamerica.com').openConnection()" in the program, which calls on Sun's prewritten code. If the programmer used the feature frequently, he would not bother looking it up, since using the package would become second nature. A20,937-38. Apropos of the terminology clarification, URLConnection is a computer program, not some trivial communication protocol between programs.

Every package consists of two related types of Java source code. First, each component in a package begins with one or more lines of code including, among other things, a description of the function, such as "public URLConnection openConnection() throws java.io. IOException." Also, this code reflects the component's place in the package hierarchy. A133, 136-39. The similar code that the programmer declares in order to invoke the prewritten program is: "URL(String spec).openConnection()." These lines of code are called declarations, headers, signatures, or names (depending on various factors not relevant here). In the interest of brevity, we call them all "declaring code" or simply "declarations." The second type of code tells the computer how to perform the declared function. A133, 137-39. In the illustration above, this second category encompasses the lines of code opening the internet connection. Consistent with the district court's terminology, we call them "implementing code." A163.

As is evident from this description, a programmer *does not have to* invoke these packages to write a program in the Java language, any more than an avid networker must use Hallmark's prewritten greetings to write to friends on special occasions. A20,458-59. The packages are shortcuts. With only a few minor exceptions (portions of three packages), programmers can write in Java without using the packages. A140-41, 20,946-49. Indeed, programmers not satisfied with the existing packages can create their own packages in the Java language with similar—or completely different—functionality. A22,388-89. Sun specified how the code in the packages works in the *Java API Specification*, a massive-40,000 page manual that details the Java declaring code and its hierarchical arrangement. A20,710-11, 20,775, 21,422-24. The *Specification* also describes the structure and organization of each package, its elements and their relationships, and how each element and package works. A20,754-55, 20,710-102. It "exactly" mirrors the declaring code in the package, including its structure and organization. A20,775-77.

Writing A Java Package Is An Iterative And Creative Exercise

The original Java Standard Edition Platform ("Java SE") had "eight packages of pre-written programs." A140. When Google began its copying in 2005, Java SE 5.0 had 166 packages. A141. It now contains 209. A20,766.

Writing any of these packages is an iterative and creative process. It took Sun's "most senior[,] experienced and talented" developers years to write some of them. A20,459; *see* A20,791, 20,921. Much of the creativity lies in determining what to include in the packages and how to organize the declaring code in a way that programmers using the packages in their own apps will find appealing and intuitive. The process usually begins as a "high level exercise." A20,790. Sun/Oracle developers identify areas of need in the Java programming community for new or different functions. A20,790, 21,410. Suggestions also come through the Java Executive Committee—Java's governing body, composed of Oracle and its competitors like IBM and Google. A20,790-96, 20,471. Sun/Oracle developers then organize a "high level summary of … a possible structure" for the package. A20,790-91; *see* A20,913. They wrestle with what functions to include in the package, which to put in other packages, and which to omit entirely. *Id.* They send sketches "around to get comments from [their] colleagues," and may "revise th[eir] design" based on "feedback." A20,791. The developers work with a "clean slate," A21,412; *accord* A20,913, so ex ante, their options are infinite.

Sun/Oracle invested hundreds of millions of dollars in these labors. A20,454, 20,557. Sun registered Java SE—including all the packages—with the Copyright Office. A1066, 2342-99, 2400-25, 2520-24, 5908-12; Supp. App'x Ex. 1076. It also invested millions in teaching a community of programmers how to use those packages. A20,557, 21,438-39. So, when Java programmers see "URL.openConnection()," they instantly conjure "creating an internet connection," just as surely as fans who see "Hermione Granger," instantly think, "brainy, fearless Harry Potter sidekick."

Sun Develops A Licensing Regime To Foster A Community And Ensure Compatibility

Although Oracle owns the copyright on Java SE and the corresponding packages, Oracle encourages their use by others—both a vast community of programmers writing clever apps and businesses developing proprietary and competing products. To accommodate all comers, Sun/Oracle offers three different licenses:

(1) The General Public License ("GPL") is free of charge, but subject to a strict—and legally binding—obligation: Licensees may use the packages (both declaring code and implementing code), but must "contribute back" the new work. It is called an "open source" license, not because it is open for all to use unconditionally, but because the licensee must expose his innovations publicly. A20,460, 20,537, 21,923-24.

(2) The Specification License, unlike the GPL, does not permit the licensee to use the full Java source code. A20,469-70. Rather, the licensee can use only the *Specification*—which, as explained, recites the declaring code. So, a Specification Licensee may write packages using the familiar declaring code and organization of the Sun/Oracle packages but must write its own implementing code. A20,461-63.

(3) The Commercial License is for businesses that want to use and customize the full Java code in their commercial products and keep their code secret. Oracle offers a Commercial License in return for royalties. A21,225-26, 21,242.

Both the Specification and Commercial Licenses require that licensees' programs pass a series of tests that ensure compatibility with the Java platform. A21,242, 21,226, 22,230. This compatibility requirement enforces adherence to Java's critical "write once, run anywhere" principle. A133, 167, 20,549.

Sun/Oracle's investments in user-friendly, efficient, and intuitive source-code packages, combined with flexible licensing options, attracted millions of programmers to Java's "write once, run anywhere" platform, A133, 167, 20,549, 20,688, and made Java "one of the world's most popular programming languages and platforms," A133. Corporations like Sony, Cisco, and General Electric, all took Commercial Licenses for software packages, A20,550-51, and IBM, SAP, and Oracle (before purchasing Sun), all took Specification Licenses, A20,46-67—each maintaining compatibility with the Java platform.

Even before the smartphone market exploded, Sun was licensing and profiting from a derivative version of the Java platform for use on mobile devices, called Java Micro Edition ("Java ME"). A20,889. Oracle licensed Java ME for use on feature phones and smartphones. A20,468, 20,551-52, 21,273, 21,658, 22,097. "[J]ust about every smart phone carrier … around the world" used Java ME, A22,237, including Research in Motion in Blackberries, Danger in Sidekicks, Cisco in several of its systems, and Nokia in Series 60 devices, A20,551-52, 21,273, 21,760, 22,097. The royalties from these licenses were "very lucrative" and "quite valuable." A22,237.

As is evident from those client lists, Sun/Oracle—a significant force in personal computers, servers, and web-based applications, A133, 141—was already a strong presence in mobile devices and poised to be a major force in smartphones, A22,237.

Until Google entered the picture.

Google Is Desperate To Include Certain Java Packages In The Android Platform

The Google juggernaut rests on a grand bargain. A21,631. Google, famously, does not directly charge users. Instead, Google collects information about its users and makes money selling advertising targeted at them. Advertisers pay large sums for that targeting. A7898, 7902-04, 7916-18, 7922, 7979.

Since its founding in 1998, practically every penny of Google's enormous revenue was tied to personal computers. A7898. By 2005, however, Google faced a grave threat. Increasingly, consumers were searching the internet from mobile devices rather than personal computers. A7959. But Google's products were not optimized for mobile search. *Id.* Google was desperate to extend its market dominance to mobile search. As Google's 10-K reported: Without quick action, Google would "fail to capture significant share of an increasingly important portion of the market for online services." *Id.*; A20,657-58, 21,631, 22,018.

Google set out to "build[] an Open Source handset solution with built-in Google applications." A2026. Its strategy was to work with wireless carriers and manufacturers to incorporate a Google mobile operating system into handset designs. A1128. So, in 2005, Google acquired Android, Inc., which was developing a mobile software platform. A134.

Google could have tried to develop its operating system from scratch as Apple, Microsoft, and so many other technology companies have. But there were two problems. First, this had to be done yesterday. Designing a new operating system from scratch with its own array of pre-written software packages would take years. Second, Google executives understood that Android would rise or fall on "build[ing] a community force around Google handset APIs and applications." A1148; *see* A21,627-30. That was because consumers choose smartphones over conventional cell phones mainly for the apps. Google needed immediate access to a community of independent programmers to write for Android all the useful, quirky, and entertaining apps that users craved, from Solitaire to mobile banking to social networking. A1148, 21,627-30. But a community of loyal supporters does not coalesce overnight.

The only way for Google to get the technical and community-building jobs done quickly was to hitch its wagon to the Java platform. A21,890. Google's internal documents detail why the prewritten Java packages were "[c]ritical" to Google's shortcut "strategy." A1187, 1200-01. If Google could "[l]everage Java for its existing base of [programmers]," it would not need to educate new programmers on a whole new body of declaring code. A2033. The familiar packages would expedite development of Android and its apps, *id.*; A2092, 21,627-28, 21,630-31, which, in turn, would "[d]ramatically accelerate[] [Google's] schedule," A1187; *see* 21,636.

Google Acknowledges It Needs A License But Wants To Defy "Write Once, Run Anywhere"

Google was fully aware that no one could use Sun's software packages—or even just the declaring code that Specification Licensees use—without a license. Several former Sun engineers at Google were steeped in Sun's licensing regime and knew how much effort and creativity went into designing each package. They were aware of the many companies that took Specification Licenses to use the declaring code and write their own implementing code. *See, e.g.*, A20,902-03, 20,906. Accordingly, Google never doubted it needed a license for Sun's packages. Andy Rubin, the head of Google's mobile efforts, conceded: Java "apis [sic] are copyrighted" and "I don't see how you can open [J]ava without [S]un, since they own the brand and the IP." A1200-01. Google "[m]ust take [a] license from Sun," the Android team insisted in a presentation to top Google executives. A1132. It was "critical." A1199. Even five years later, with litigation imminent, Google still knew it needed a license. Google cofounders ordered its engineers to investigate alternatives to using Sun's packages. A1168. A former Sun engineer, A21,009, tasked to investigate responded bluntly: The alternatives "all suck." A1168. "We need to negotiate a license for Java." *Id.*

In keeping with Google's understanding of the legalities, "[i]n late 2005, Google began discussing with Sun the possibility of … a license." A135. At no point in the ensuing five years did Google so much as suggest that it did not need a license. Instead, Google proposed a "custom" deal, A2837, 21,779—a "co-development partnership" or "license to use and to adapt the entire Java platform for mobile devices," A135. The parties reached an impasse. *Id.* The sticking point was Google's insistence on terms that were anathema to "write once, run anywhere" A2837, 21,779, terms that Sun/Oracle denied all other licensees. Google wanted to be the only company ever allowed to use the Java packages commercially without making its implementation compatible with the Java virtual machine and therefore interoperable with other Java programs. A20,561-63, 22,233-35.

This was a nonstarter for Oracle. A20,561-63. When the parties reached an impasse, Android's chief advised Google executives: "If Sun doesn't want to work with us, we have two options: 1) Abandon our work … or 2) Do Java anyway and defend our decision, perhaps making enemies along the way." A1166. Google elected option 2.

Google Copies Verbatim The Declaring Code In 37 Java Packages Into Android

Google wrote some of its own packages for Android in the Java *language*. Nothing wrong with that. What is objectionable is Google's copying of portions of Sun's packages. Google cherry-picked "the good stuff from Java," A5874—the 37 packages that it "believed Java [programmers] would want to find … in the new Android system callable by the same names as used in Java." A135; *accord* A21,503, 21,957-59 (the significance of the stolen 37 packages is "huge"). As to those 37 packages, Google admits it copied verbatim virtually all of Sun's declaring source code, thereby replicating the entire detailed structure of each package, and then paraphrased the implementing code. A136, 976-97, 22,771-73. Google did what other businesses that took a Specification License to do—but without the requisite compatibility. A20, 461-63.

What Google copied. We illustrate pictorially what Google copied, below. Some technical jargon is necessary to appreciate the extent and significance of Google's copying: Every Java package is arranged in a hierarchy and divided into related "classes" of defined source code files; classes contain numerous "methods"; each method performs a discrete function, A137-39, such as opening an internet connection, *supra* at 9-10.

Figure 1, below, represents a high-level schematic of a single package, java.io. A5730. Java.io generally manages system inputs and outputs. A10,029-33. Arrayed on the left are the numerous classes. Each relates to the overall input/output theme, ranging from

InputStreamReader (which translates data streams into human-readable text) to Writer (which enables devices to write streams of characters). *Id.* The classes are arranged in a hierarchy of their own. Classes can contain subclasses, which in turn can contain sub-subclasses, and so on. Figure 1 indicates that hierarchy by indentation.

Google copied the declaring code in the java.io package, including the classes shown in Figure 1. Figure 1 does not, however, show all the methods—569 of them, distributed among approximately 50 classes. *See* A1065. The InputStreamReader class, for example, has five methods, ranging from “read” (which reads a single character) to “ready” (which signals whether the stream is ready to read). A10,034-38. Other classes in java.io encompass between three and 39 methods. Google copied verbatim declaring code for all those methods, too.

Figure 1. High-Level Schematic of a Package.

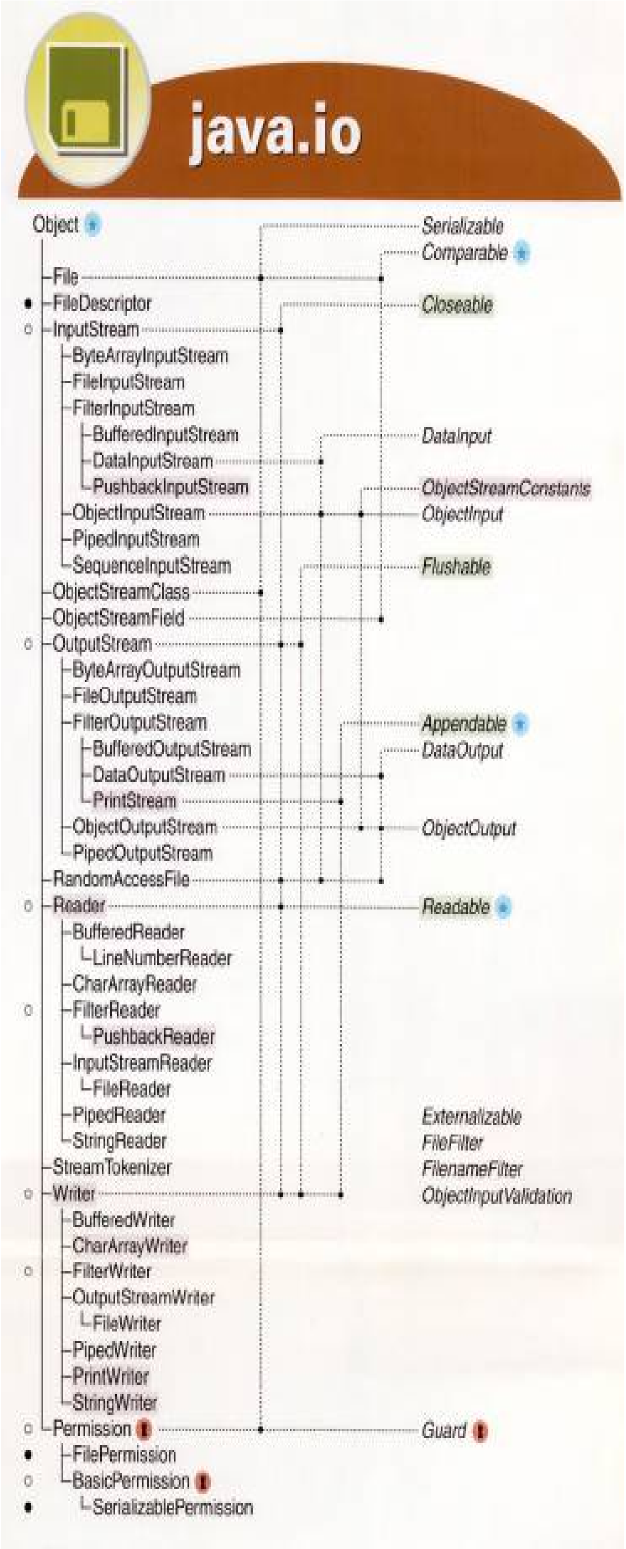
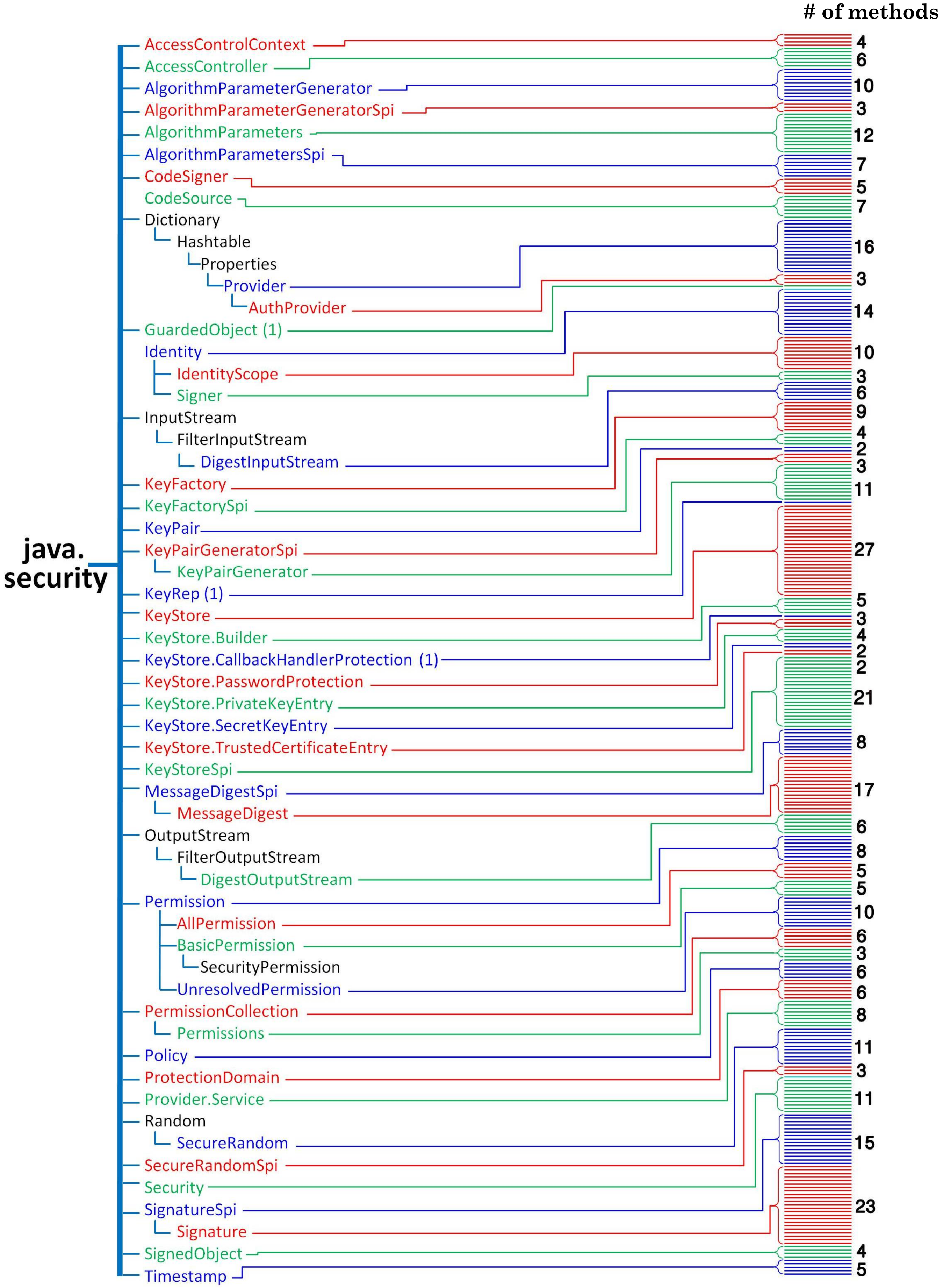


Figure 2, below, begins to portray the intricacy of the work Google copied at the method level. (We use a simpler package, java.security, because java.io's 569 methods cannot fit on one page.) Arrayed on the left are the class names (with subclasses indented down to sub-sub-sub-subclass). On the right is a layout of the methods. Each of the almost imperceptibly thin lines represents a method—362 in all—each of which begins with one or more lines of declaring code. Google copied verbatim the declaring code for the java.security methods.

We say Figure 2 *begins* to portray the intricacy, because it leaves out important detail. The declaring code that defines a method or class includes more information than just its name and function. A137-38. Most include "parameters," which define its operation (e.g., "5" directs java.io.StringReader.skip to skip the next five characters); "exceptions" (e.g., "Here's the type of error you must be prepared to handle"); and "fields," which hold data values (e.g., pi). A138, 140. Figures 1 and 2 do not convey this information.

Figure 2. Schematic of a Package Including Methods



Moreover, the structure of the packages is not simply linear or purely hierarchical. A true schematic would be three dimensional, with an intricate web of interconnections. Imagine each colored grouping of lines in Figure 2 as the floor plan of one story in a 50-story building. Imagine a web of chutes and ladders connecting some floors to others and even to other buildings, representing other packages. Those connections are "interfaces" (not to be confused with interfaces associated with "API," *supra* at 9), which group classes sharing similar characteristics. Figure 1 indicates interfaces in italics on the right: the lines connecting one class to another, both in this package and in other packages. A5730 (illustrating the latter interfaces with an accompanying icon); *see* A139 (explaining the difference between classes and interfaces). There are many other types of relationships, some of which transcend package and class. A20,770, 21,391, 21,411-12.

So far, the description of Google's copying (assisted by Figures 1 and 2) has focused on individual packages. Now multiply by 37. The 37 packages Google copied from Oracle contain 677 classes and 6508 methods—totaling *at least* 7000 lines of declaring code. A1065.[2]

Google admits that it copied all of this declaring source code verbatim—thousands of specific package, class, and method declarations; the definitions and parameters; and the exceptions. A136. Because declaring code identifies, specifies, and defines the components and their arrangement within the packages, when Google copied Java's declaring code, it also copied the "sequence and organization" of the packages (i.e., the three-dimensional structure with all the chutes and ladders), A984-85, 22,367, 22,771-73. Google's "Java guru," A142, conceded (and the district court found, A140-41) that Google did not need to engage in this massive copying in order to design its own platform in the Java language. A20,946-49.

What Google paraphrased. Once it had the declaring code, "do[ing] [the] implementation from scratch is a relatively easier job."

[2] The district court estimated 7000, which, it believed, represented 3% of the lines of code in those 37 packages. *E.g.,* A136. We do not challenge those numbers on appeal but note that they are too low. The classes and methods, alone, number 7000, and declaring code for a single element can be several lines long. *See infra* at 57.

A22,405-06. Google merely had to "follow th[e] map" laid out in the 40,000-page *Specification* and "fill in the details" (i.e., implementing code). *Id.*

Google hired Noser—a foreign contractor that the Android Project director described as "super shady," A2177, 21,161-62—to help write Android's implementing code, A2101, 21,858. Google's programmers admit that they and Noser pored over the *Specification* as they did their paraphrasing. A21,153-56; *see* A1724, 21,422-25, 21,925.

Google's Copying Fragments The Java Community And Marginalizes Sun/Oracle In The Smartphone Market

As planned, Google released its incompatible Java-based Android system for free. A135. And as expected, Google reaped billions in advertising revenue in connection with searches on mobile devices. A135, 5977. The move hampered Sun/Oracle's "very lucrative revenue stream" that had attracted "just about every smart phone carrier" to Java. A22,237. As Oracle's President put it, "It's pretty hard to compete with free." A22,498. For example, although Amazon had paid for a Java Commercial License for the Kindle, A20,468, 20,553, the new Amazon Kindle Fire, runs on Android—not Java, A21,192-93, 21,206.

Google's copying caused the very fragmentation Sun/Oracle strove to prevent. Even while copying verbatim the declaring code from the 37 packages to attract loyal Java programmers, Google ultimately designed Android to be *incompatible* with the Java platform, so that apps written for one will not work on the other. *Infra* at 65-66; A2042-43, 21,503-04; *see* A21,192-93 (Kindle Fire not compatible). Google replaced "write once, run anywhere" with "write once, run only on Android."

The Jury Finds Copyright Infringement, But The District Court Finds No Copyright Protection

Oracle sued Google in 2010. Oracle alleged copyright infringement with respect to the 37 Java packages of source code. A526, 532-33.[3] The parties "agreed that the judge would decide … copyrightability and Google's equitable defenses and that the jury would decide infringement, fair use, and whether any copying was de minimis." A131. The court reserved decision on copyrightability until after trial. *Id.*

[3] Oracle is not appealing from the jury's verdict on patent infringement or copyright infringement by Google's Android documentation.

"[T]he jury found that Google infringed" "as to the compilable code for the 37 Java API packages." *Id.*; *accord* A41-43. But it deadlocked on fair use. A131. The jury and the court also found that Google infringed nine files, including one called "rangeCheck." A132, 1058A-B, which is the subject of Google's cross-appeal.

The district court declined to order a new trial on fair use, because it held that the code and structure Google copied were completely devoid of copyright protection. A170. As to declaring code, the court held that "no matter how creative or imaginative," "there is only one way to write" it and thus "the merger doctrine bars anyone from claiming exclusive copyright ownership" of it. A164. "Therefore, there can be no copyright violation in using the identical declarations." *Id.* It also held that declaring code consists of unprotectable "names and short phrases." A165.

The court acknowledged that the "structure, sequence and organization" of each package was "creative" and "original." A166. Nevertheless, it held the structure and organization unprotectable under 17 U.S.C. § 102(b), as "a command structure for a system or method of operation," A166.

SUMMARY OF ARGUMENT

I. A. Two axioms decide this case. **Axiom 1**: The Copyright Act's threshold for copyright protection is very low. Any "creative spark" counts, "no matter how crude [or] humble." *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991) (internal quotation marks omitted). **Axiom 2**: "[C]opyright protection extends to computer programs," just as it does to any other literary work. *Atari Games Corp. v. Nintendo of Am., Inc.*, 975 F.2d 832, 838 (Fed. Cir. 1992). The district court's approach of exempting some software from the standard copyright rules is an assault on both principles.

B. Applying these axioms, the software Google copied is protectable on two independent bases. First, declaring code is protectable because it is expressive—many orders of magnitude more expressive than necessary to overcome the threshold. Google confessed to literal copying—7000 times over. Under this Court's *Atari* opinion, the declaring code that Google copied is as protectable as any other literary work because Oracle "exercised creativity in the selection and arrangement of its instruction lines." 975 F.2d at 840.

Second, the original and creative structure and organization of each package is protectable. This is protected both through the declaring code that embodies it and, independently, through "its 'nonliteral' elements, such as the program architecture, 'structure, sequence and organization', [and] operational modules." *Eng'g Dynamics, Inc. v. Structural Software, Inc.*, 26 F.3d 1335, 1341 (5th Cir. 1994) (as corrected). The package developers had infinite options for the structure and organization. They labored to create an organization for complex packages that programmers would find attractive—easy to learn and remember.

C. The district court erred in concluding that each individual line of declaring code is completely unprotected under the "merger" and "short phrases" doctrines. Merger holds that "[w]hen the 'idea' and its 'expression' are … inseparable, copying the 'expression' will not be barred, since protecting the 'expression' in such circumstances would confer a monopoly of the 'idea.'" *Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1168 (9th Cir. 1977) (citation omitted). Merger cannot apply here because, as the court found, "the Android method and class names could have been different from the names of their counterparts in Java and still have worked," A132, and the selection and organization could have been different as well.

The "short phrases" regulation prevents an author from copyrighting "work" consisting of a naked bit of text. It does not wipe out the copyright on an assemblage of 7000 lines of code.

D. The district court also erred in holding that the organization of the packages is devoid of protection as "a command structure, a system or method of operation" under 17 U.S.C. § 102(b). A166. The district court was mistaken. Under § 102(b), copyright protection does not "extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery." That provision merely codifies the idea-expression dichotomy. The question under § 102(b) is whether "alternate expressions … are available"—i.e., "a multitude of different ways to" perform a particular function. *Atari*, 975 F.2d at 840. The district court found: "[T]here were many ways to group the methods yet still duplicate the same range of functionality." A133.

The court was wrong to hold that no line of declaring code "can[] receive copyright protection" because they are "commands to carry out pre-assigned functions." A166-67. Since all software consists of "commands to carry out pre-assigned functions," that would mean that no software is protectable.

Equally mistaken was the court's invocation of "[i]nteroperability." A167. Interoperability is irrelevant to copyrightability. Copyrightability must be considered ex ante—from the perspective of the original developers of *Oracle's* packages, considering what constrained *them*. What Google felt it needed to provide to programmers years later may bear on whether its *subsequent use* was fair, but not on copyrightability. In any event, Google's copying was not about interoperability. Android is downright *in*compatible with the Java platform.

II. The district court should also have dismissed Google's fair-use defense as a matter of law. Every factor cuts against fair use.

First, Google's purpose was purely commercial. It was not transformative. The packages serve the identical purpose in Android as they do in Java. Second, the Java packages are the product of significant creative effort, years of labor, and hundreds of millions of dollars in research and development. Third, Google copied the *most important* portion of Oracle's code—the parts that were both most creative and most relevant to programmers writing programs. Fourth, Android competes directly with Java licensing business. Also, Android damaged Java by fragmenting the platform and undermining the central "write once, run anywhere" credo.

STANDARD OF REVIEW

"To resolve issues of copyright law, this [C]ourt applies the law as interpreted by the regional circuits, in this case, … the Ninth Circuit." *Atari*, 975 F.2d at 837. Whether particular expression is protected by copyright law "is a mixed question of law and fact … subject to de novo review." *Ets-Hokin v. Skyy Spirits*, 225 F.3d 1068, 1073 (9th Cir. 2000). "[D]enial of a motion for judgment as a matter of law after a jury trial" is upheld only "if there is substantial evidence to support the verdict." *Leatherman Tool Gp., Inc. v. Cooper Indus.*, 199 F.3d 1009, 1011 (9th Cir. 1999) (internal quotation marks omitted).

ARGUMENT

I. COPYRIGHT PROTECTS ORACLE'S SOFTWARE PACKAGES.

The Copyright Act sets a very low threshold for copyrightability, and the Act protects computer software as it does other "literary" work. § I.A. Applying these principles, what Google copied is creative and protectable expression far exceeding this low threshold. § I.B. The district court's contrary holdings are dangerously erroneous. §§ I.C & I.D.

A. The Copyright Act Sets A Low Threshold For Protection And Applies The Same Standard To Software As Other Protectable Works.

There can be no dispute as to the axioms that control this case.

Axiom 1: The Copyright Act protects "original" expression. 17 U.S.C. § 102(a). A work is "original" if "it possesses at least some *minimal* degree of creativity." *Feist*, 499 U.S. at 345 (emphasis added). Oracle "obtained the benefit of a presumption" of copyrightability, *Atari*, 975 F.2d at 840, by registering the Java platform with the Copyright Office, A1066-68. But, even without the presumption, the packages are easily copyrightable, as "[t]he vast majority of works make the grade quite easily, as they possess some creative spark, *no matter how crude, humble or obvious it might be*." *Feist*, 499 U.S. at 345 (quotation marks omitted; emphasis added).

Courts have no trouble finding the minimally sufficient "creative spark" in works that are "humble," indeed. They include a Chinese yellow pages, *Key Publ'ns, Inc. v. Chinatown Today Publ'g Enters.*, 945 F.2d 509, 514 (2d Cir. 1991); estimates of coin values, *CDN Inc. v. Kapes*, 197 F.3d 1256, 1257-58, 1260-61 (9th Cir. 1999); and pitcher's statistics, *Kregos v. Associated Press*, 937 F.2d 700, 702, 704 (2d Cir. 1991). Even a Chinese menu. *Oriental Art Printing, Inc. v. Goldstar Printing Corp.*, 175 F. Supp. 2d 542, 548 (S.D.N.Y. 2001).

Axiom 2: As this Court explains, "copyright protection extends to computer programs," just as it does to any other work. *Atari*, 975 F.2d at 838; *Computer Assocs., Inc. v. Altai, Inc.*, 982 F.2d 693, 701-03 (2d Cir. 1992). The Copyright Act protects as "[l]iterary works" "works … expressed in words, numbers, or other verbal or numerical symbols or indicia." 17 U.S.C. § 101. Computer programs meet that definition. *Atari*, 975 F.2d at 838. That is Ninth Circuit law (which, as in *Atari*, controls here). It is also the universal view of the circuits. *See, e.g., Hutchins v. Zoll Med. Corp.*, 492 F.3d 1377, 1385 (Fed. Cir. 2007); *Altai*, 982 F.2d at 702-03; *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1249 (3d Cir. 1983).

The district court's decision was an assault on both axioms. The code Google copied indisputably exceeds by many orders of magnitude the minimal level of creativity necessary for copyright protection. Yet the opinion is a manifesto of software exceptionalism—the notion that software (or perhaps some undefined category of software) deserves less copyright protection than any other work. The court's premise was that software innovation is entitled to copyright protection *or* patent protection, never both. A144, 161-62, 164, 167. The Court preferred patent protection because "copyright exclusivity lasts 95 years." A144. This either/or notion is, of course, incorrect. The Supreme Court has "h[e]ld that … [n]either the Copyright Statute nor any other says that because a thing is patentable it may not be copyrighted." *Mazer*, 347 U.S. at 217.

The district court countered with an idea from a law review article: "As software patents gain increasingly broad protection, whatever reasons there once were for broad copyright protection of computer programs disappear." A162 (citation and internal quotation marks omitted). If this Court adopts the district court's rationale, "copyright protection of computer programs" will indeed "disappear."

B. The Declaring Source Code And Organization Of Each Package Is Protectable Expression.

Under these axioms, Oracle's packages are protectable. There was nothing humble about the expression Google copied. It was the programming equivalent of a magnum opus—an intensely creative endeavor involving thousands of subjective and intuitive, even artistic, judgments as to what sorts of elements, structures, and relationships a community of programmers would find intuitive, coherent, and aesthetically pleasing. As the chief architect of Oracle's packages explained, his team strove for "something that we thought was coherent, would be easy to use and attractive to [programmers], but it could have ended up in many different ways and been just as good." A20,766; *accord* A20,761, 21,949, 22,399. Even Google's own "Java guru," A142, admitted that designing the packages "is very much a creative process." A20,917; *accord* A20,910-17, 20,920-22, 20,970.

Oracle's chief architect also testified that the effort to reach that level of aesthetic appeal entailed "many, many design choices"—so many that "I wouldn't know how to start counting them." A20,798, 20,796-97; *see* A3003-49. The choices included:

> [H]ow should classes be organized under other classes? How should interfaces be organized under other interfaces? How should classes and interfaces relate? Where should the methods be? What should the methods be named? What kinds of inputs do the methods take? What kind of outputs do the methods provide for the fields? How do … they relate? Is the value in a field a color, or is it just a number, or is it a string, or is it something else?

A20,797-98. The structural options were infinite.

The district court acknowledged as much when it announced (albeit in something of an understatement): "Yes, it is creative. Yes, it is original. Yes, it resembles a taxonomy." A166. Embedded in these findings are two distinct bases for protecting Oracle's source code. Either suffices: (1) the expressive declaring code; and (2) the creative arrangement of each package.

1. Declaring source code is protectable because it is expressive.

This is an uncommon copyright case. Usually, the accused infringer has created a work—whether a visual work, work of literature, or computer program—that bears *similarities* to the plaintiff's work. And the court's role is to determine whether the two are sufficiently similar to amount to plagiarism. Here, we have admitted plagiarism—at least 7000 times over—and the jury found infringement. A41-43, 136, 22,771-73.

The last time the Supreme Court addressed such a situation was *Harper & Row Publishers, Inc. v. Nation Enterprises,* 471 U.S. 539 (1985). *The Nation Magazine* obtained an advance copy of President Ford's memoir. *Id.* at 543. "The Nation … admitted to lifting verbatim quotes … totaling between 300 and 400 words," *id.* at 548—probably less than 1% of the 655-page memoir, *id.* at 570. The Court took as granted that this "verbatim copying … would constitute infringement unless excused as fair use." *Id.* at 548.

The only way to reach a different conclusion here is to declare that different rules apply when the verbatim infringement is of source code. But, it is "well settled" that source code is protectable. *Altai*, 982 F.2d at 702; *accord JustMed, Inc. v. Byce*, 600 F.3d 1118, 1125 n.3 (9th Cir. 2009); *Gen. Universal Sys., Inc. v. HAL, Inc.*, 379 F.3d 131, 142 (5th Cir. 2004). In *Atari*, Nintendo's video game program included the "10NES program," a single program far less sophisticated that Oracle's web of declaring code. That simple program merely made it impossible for a game to work without transmission of the correct coded message. 975 F.2d at 836. Atari obtained and copied Nintendo's security source code. *Id.* at 836, 841. This Court held that the "literal expression" in Nintendo's security program was "protectable." *Id.* at 840. Relying on non-software-specific copyright authority, *Atari* reasoned that "Nintendo … exercised creativity in the selection and arrangement of its instruction lines." *Id.* at 840. Because there were "alternative" ways of achieving the same result—a security program—there was "creativity in the [code's] selection and arrangement." *Id.*

If Nintendo's relatively simple security code cleared the creativity threshold, then the declaring code here does so with ease. Oracle's developers began, too, with a "clean slate" when they set out to write their original code—including the declaring code—for each package. A20,734, 20,788. Neither programming conventions nor the Java language dictated what the declaring code would be.

Google's decision not to copy some code (implementing code) does not make the code it did copy (declaring code) unprotectable. Like the topic sentences in *Harry Potter*, the modest memoir excerpts in *Harper & Row*, and the 10NES in *Atari*, the various sentences of infringed code do not lose protection just because Google found other code insufficiently valuable to copy. "As Judge Learned Hand said, 'No plagiarist can excuse the wrong by showing how much of his work he did not pirate.'" *Atari*, 975 F.2d at 845 (quoting *Sheldon v. Metro-Goldwyn Pictures Corp.*, 81 F.2d 49, 56 (2d Cir. 1936)).

Google's effort to trivialize the proportion of the infringed code is especially misguided because what it copied—practically 100% of the declaring code in 37 packages—was vastly more valuable to programmers than what Google paraphrased. Programmers do not know the implementing code. All they know, and all they need to know to program seamlessly, is the declaring code. Had Google selected different names for the thousands of packages, classes, and methods (e.g., "java.key" rather than "java.security"), the developer community Oracle fostered would not have been as immediately receptive to Android. A20,914-15. It would have been as unfamiliar, and possibly as unpopular, as an Ann Droid knock off that copied a *Harry Potter* plot, but substituted John Smith and Jane Doe for the protagonists and Duke Jones for the antagonist.

2. The organization of each package is protectable as creative expression.

The packages are independently protectable on two related bases, both arising from Google's concession (and the district court's explicit finding) "that the structure, sequence and organization of the 37 accused API packages in Android is substantially the same as the structure, sequence and organization of the corresponding 37 API packages in Java." A985, 22,771-72. That structure, sequence and organization would be protectable, even if Google had not copied a single line of code, but all the more so because it copied 7000.

Copying of non-literal elements. If Ann Droid had paraphrased in the same order every chapter title and topic sentence without copying a single word verbatim, the entire plot that she copied—the structure, sequence, and organization of the overall work—would be protected. *See Nichols v. Universal Pictures Corp.*, 45 F.2d 119 (2d Cir. 1930) (collecting cases). This principle applies equally to software. As with a novel, "[i]t is well-established … that *non-literal* structures of computer programs are protected by copyright." *Altai*, 982 F.2d at 702 (emphasis added); *accord Gates Rubber Co. v. Bando Chem. Indus., Ltd.*, 9 F.3d 823, 836 (10th Cir. 1993). The reason is that Oracle developers, like novelists, make creative organizational choices, such as which methods go where.

In fact, many precedents involving accusations of copied software do not involve verbatim copying of *any* literal code elements. *See, e.g., Altai*, 982 F.2d at 696, 702. In *Atari*, this Court addressed infringement "[e]ven in the absence of verbatim copying." *Id.* at 844. Atari copied the "unique" and "creative organization and sequencing" of Nintendo's security function. 975 F.2d at 840. This Court determined that Nintendo's developers had "a multitude of different" organizations available to perform the needed function, so they "exercised creativity" in their selection. *Id.* Thus, this Court held that, "[a]t a minimum," Nintendo could "copyright the unique and creative *arrangement* of" its work. *Id.* (emphasis added). The Ninth Circuit reached the same conclusion, on the same logic, in *Johnson Controls Inc. v. Phoenix Control Systems, Inc.*, 886 F.2d 1173 (1989). It held—without regard to the program's actual source code—that "the nonliteral components of a program, including the structure, sequence and organization … may be protected by copyright where they constitute expression." *Id.* at 1175-76. The key was that the developers had "some discretion and opportunity for creativity … in the structure." *Id.* at 1176.

Even if Google had not copied a single line of code, the organization of each package would be protected expression.

Verbatim copying of literal elements. Of course, Google *did* verbatim copy thousands of lines of source code, which embody the structure of each package, just as the chapter titles and topic sentences represent the structure of a novel. The verbatim copying of literal elements encapsulating the overall structure, sequence and organization makes this an even more compelling case for copyrightability.

This is true even if not a single code element, by itself, were copyrightable. As the district court understood, "'a combination of unprotectable elements is eligible for copyright protection … if those elements are numerous enough and their selection and arrangement original enough that their combination constitutes an original work of authorship.'" A35 (quoting *Lamps Plus, Inc. v. Seattle Lighting Fixture Co*., 345 F.3d 1140, 1147 (9th Cir. 2003)). That principle comes directly from Supreme Court precedent: Even if elements of a work "contain[] absolutely no protectable written expression," the original "selection or arrangement" of those elements are protected so long as they "entail a minimal degree of creativity." *Feist*, 499 U.S. at 348; *see Satava v. Lowry,* 323 F.3d 805, 811 (9th Cir. 2003) ("It is true, of course, that a *combination* of [even] unprotectable elements may qualify for copyright protection.").

Applying this principle, a Chinese Yellow Pages is copyrightable because it arranged the entries under ordinary Yellow Pages categories and categories of "interest" that are "not common to yellow pages, e.g., 'BEAN CURD AND BEAN SPROUT SHOPS.'" *Key Publ'ns*, 945 F.2d at 514. The Seventh Circuit likewise found copyright protection for a directory of dental procedures, in which the procedures were assigned numbers, classified into groups, and described in long and short form. *Am. Dental Ass'n v. Delta Dental Plans Ass'n*, 126 F.3d 977, 977-78 (7th Cir. 1997). Judge Easterbrook's opinion explained that the directory was copyrightable as a creative "taxonomy," because "[c]lassification is a creative endeavor" and "each scheme of classification [in the directory] could be expressed in multiple ways." *Id.* at 978-81. The Ninth Circuit reached the same conclusion for a taxonomy of medical procedures. *Practice Mgmt. Info. Corp. v. Am. Med. Ass'n*, 121 F.3d 516, 517-20 (9th Cir. 1997) (as amended).

* * *

If the works in *Atari* and *Johnson Controls* (copying of non-literal elements) and *Practice Management, American Dental*, and *Key Publications* (copying of literal elements embodying an arrangement) were protectable, the same is true many times over for Oracle's works.

C. The District Court Erred In Concluding That Each Line Of Declaring Code Is Completely Unprotected.

The district court surveyed the caselaw generally at length, but its section entitled "application of controlling law to controlling facts" was just a few pages. A163-70. The court first discussed the verbatim copying of lines of code (addressed in this section) and then turned to the structure and organization of each package (addressed below, § I.D).

As to the copyrightability of declaring code, the district court "h[e]ld that, under the Copyright Act, no matter how creative or imaginative a Java method specification [i.e., declaring code] may be, the entire world is entitled to use the same method specification (inputs, outputs, and parameters)." A164. The court packed its rationale into 22 lines. A164-65. It held that the "merger" and "short phrases" doctrines barred copyright protection. Each holding is erroneous.

1. The district court misapplied merger.

The merger doctrine represents an application of *Baker v. Selden*, 101 U.S. 99 (1880): The Copyright Act grants no protection for "the author's generalized ideas and concepts," only for the author's expression (i.e., the "more precisely detailed realization of those ideas").

Sparaco v. Lawler, Matusky & Skelly Eng'rs LLP, 303 F.3d 460, 468 (2d Cir. 2002). As the district court acknowledged, A164, the merger doctrine holds that "courts will not protect a copyrighted work from infringement if the idea underlying the copyrighted work can be expressed in only one way." *Satava*, 323 F.3d at 812. When that happens, the idea and the expression merge.

Atari illustrates the limits of merger for software. Nintendo could not prevent anyone from writing a security program, but since there were many ways to achieve the same security function, Nintendo *could* copyright its "creative[e] … selection and arrangement" of "arbitrary programming instructions" to unlock the console. 975 F.2d at 840. Nintendo's *specific choice of code* was protectable: It did "not merge with the process," because "alternative expressions [we]re available." *Id.*

By the same token, merger cannot bar copyright protection for any single line of declaring code—much less for all 7000—unless the original authors had available to them "only one way" to write them. *Satava*, 323 F.3d at 812 n.5. But the authors had many options as to each individual line and unlimited options as to the selection and arrangement of the 7000 lines Google copied.

As to the individual lines, take the district court's go-to "simple" snippet: "java.lang.Math.max." A139. That name was not preordained. A20,970. The developers could have called it "Math.maximum," "Equations.compare," "Arith.bigger," "MeasuringStick," etc. The computer would have accepted "Rumpelstiltskin." A20,788. The district court observed that "the Android method and class names could have been different from the names of their counterparts in Java and still have worked." A132; *accord* A133, 140-41. That necessarily means that the idea and the expression did not merge.

Even more fundamentally, the court erred in ending its merger analysis at the individual line of declaring code without taking stock of the larger body of declaring code of which it is a part. In so doing, the court made the mistake that so many appellate courts warn against: dissecting a work down to the most minute level of abstraction. That will "result in almost nothing being copyrightable because original works broken down into their composite parts would usually be little more than basic unprotectable elements like letters, colors and symbols." *Boisson v. Banian, Ltd.*, 273 F.3d 262, 272 (2d Cir. 2001) (internal quotation marks omitted); *see Softel, Inc. v. Dragon Med. & Sci. Commc'ns*, 118 F.3d 955, 963 (2d Cir. 1997). The court must not miss the forest for the leaves.

The conclusion that merger does not defeat the copyrightability of any particular line of declaring code applies with even greater force to the thousands of methods and the overall structure described by the large body of declaring code. Here, too, Oracle had an infinite number of choices for which methods to include and how to arrange them. Different software platforms handle the same problems in very distinct ways, as demonstrated by alternative Java packages with quite different designs, written by other developers. A21,412-16. As the district court recognized, granting the original authors copyright protection would not prevent Android from providing even the exact same functions with different organizations:

> This could have been done by re-arranging the various methods under different groupings among the various classes and packages (even if the same names had been used). In this sense, there were *many* ways to group the methods *yet still duplicate the same range of functionality*.

A132-33 (emphasis added); *accord* A165-66. Indeed, for over 100 packages in Android, Google wrote its own declaring code with its own internal structure and organization. But not as to each of the 37 packages at issue. A136. Because "alternative expressions are available," merger does not apply. *Atari*, 975 F.2d at 840; *Satava*, 323 F.3d at 812.

The district court also misunderstood another basic point. Whether the focus is on the individual line of declaring code (where the court focused) or the entire body of declaring code, the proper focus in copyright is on the options available to the *original author*. It must be. After all, "[c]copyright in a work … subsists from its creation and[] … endures for [the copyright] term." 17 U.S.C. § 302(a). Elevating "Java rules" over copyright law, the district court observed that "[t]o carry out any given function, the method specification as set forth in the declaration *must be identical*." A164. To be sure, once the *original author* chooses "java.lang.Math.max," programmers who want to use Oracle's pre-packaged software have to call it by that name. And once J.K. Rowling turned her work into a blockbuster, a plagiarist who wants to tap into that Harry Potter fan base must copy her work. But that does not mean that the original work never had copyright protection. What a plagiarist feels it must copy to benefit from the original work is irrelevant, because copyright "subsists from … creation and … endures." 17 U.S.C. § 302(a); *see PMI*, 121 F.3d at 520 n.8 (rejecting theory that a work loses copyright protection when use became pervasive due to government agency requirement).

2. The district court misapplied "short phrases."

The district court also disqualified every single line of declaring code in an isolated and unexplained sentence: "[N]or can there be any copyright violation due to the *name* given to the method … , for under the law, names and short phrases cannot be copyrighted." A165. The court invoked a Copyright Office regulation that lists "works not subject to copyright," including: "[w]ords and short phrases such as names, titles, and slogans; familiar symbols or designs; [and] mere variations of typographic ornamentation, lettering or coloring." 37 C.F.R. § 202.1(a).

The regulation prevents an author from copyrighting a "work" consisting of a naked bit of text. That is what trademark protection is for. The regulation continues: "The Copyright Office cannot register claims to exclusive rights in brief combinations of words." *Id.* So, Nicholas Sparks cannot register the title *Safe Haven*, thereby precluding anyone from ever using that phrase. A videogame manufacturer may not be able to copyright a naked line of code, "consist[ing] merely of 20 bytes of initialization code plus the letters S-E-G-A," that "is of such de minimis length that it is probably unprotected under the words and short phrases doctrine." *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1524 n.7 (9th Cir. 1992) (as amended) (cited by A144).

In contrast, "short phrases" does not eliminate all copyright protection for an assemblage of 7000 lines of code, which Google itself conceded was not de minimis. A976-97; *accord* A22,777. Imagine our hypothetical plagiarist decided to write a Broadway hit, *Ann Droid's Glengarry Glen Ross*. She transcribes every short sentence (which is practically all Mamet ever writes) and paraphrases the rest. No one would say that what she copied was unprotected because each isolated sentence was a short phrase. That is because the "work" she stole was not isolated phrases, but many, many phrases carefully authored and assembled in a specific order and melded together into a coherent whole. "Copyright protection does not protect individual words and 'fragmentary' phrases when removed from their form of presentation and compilation," but short phrases are "subject to copyright in the form in which [they are] presented." *Hutchins v. Zoll Med. Corp.*, 492 F.3d 1377, 1385 (Fed. Cir. 2007); *accord Salinger v. Random House, Inc.*, 811 F.2d 90, 98 (2d Cir. 1987).

The Eighth Circuit illustrated the point in a case involving the copyrightability of a personality test with 550 concededly "short, simple, declarative sentences," such as "I am a good mixer" and "No one seems to understand me." *Applied Innovations, Inc. v. Regents of Univ. of Minn.*, 876 F.2d 626, 634-35 (8th Cir. 1989). The court had no trouble finding the questionnaire protectable.

Here, again, the district court reached the wrong conclusion because it dissected the work too minutely—fixating on the individual line of code rather than the larger arrangement of which it was a part. *Supra* at 50-51. Moreover, applying "short phrases" as the district court did would invalidate practically any computer program. Virtually every line of the typical program is a short phrase. If each were unprotectable without regard to its relation to the larger whole, there would be nothing left of the program. And nothing left of *Atari*.

Even if it were appropriate to apply this principle to isolated sentences in a larger work, that could not justify stripping every single line of Oracle's declaring code of protection. The First Circuit explained (in an opinion Justice (Ret.) Souter joined): Copyrightability "turns on the specific short phrases at issue, as not all short phrases will automatically be deemed uncopyrightable." *Soc'y of the Holy Transfiguration Monastery, Inc. v. Gregory*, 689 F.3d 29, 50-52 (1st Cir. 2012) (collecting authorities). Take, for example, the declaring code for a method in the java.security.cert package:

```
public abstract void verify (PublicKey key, String sigProvider)
  throws CertificateException, NoSuchAlgorithmException,
  InvalidKeyException, NoSuchProviderException
  SignatureException
```

A10,042. Or the declaring code for a class in java.nio.channels:

```
public abstract class DatagramChannel
  extends AbstractSelectableChannel
  implements ByteChannel, ScatteringByteChannel, GatheringByte
Channel {
```

A10,044.

Even shorter declaring code in isolation is not necessarily unprotected, for "a short phrase may command copyright protection if it exhibits sufficient creativity." *Syrus v. Bennett*, 455 F. App'x 806, 809

(10th Cir. 2011) (quoting 1-2 Nimmer on Copyright § 2.01[B] at 2-17). Google's "Java guru," A142, admitted: There can be "creativity and artistry even in a single method declaration." A20,970. Whatever might be said of "math.max," the declaring code above—and even "java.beans," A1065—are not devoid of creativity.

D. The District Court Erred In Holding That The Organization Is Devoid Of Protection.

The district court next turned to the independent basis for copyrightability—structure and organization. Its "main answer" was less than half a page. A166. The court acknowledged that "thousands of commands arranged in a creative taxonomy" can still be creative and original. *Id.* But it held that the structure and organization—no matter how "creative" and "original" or how much "it resembles a taxonomy"—was not protectable on the ground that the commands are a "command structure, a system or method of operation" under 17 U.S.C. § 102(b).

That analysis is wrong for reasons we address below. But as important, it is also not dispositive because it addresses only half the argument. As is explained above, there are two related reasons why the structure and organization are copyrightable: (1) the copying of non-literal elements of the structure; and (2) verbatim copying of literal elements of the structure. *Supra* at 43-47. The court's focus on the "commands" that "carry out pre-assigned functions," A166-67, has no bearing on the first rationale, which has nothing to do with specific "commands." Like paraphrasing Harry Potter without copying a single word, the non-literal claim relates only to the organization that enables a programmer to figure out where to find particular methods, without regard to what names are assigned. The district court gave *no reason* to deny copyright protection to that organization. The method-of-operation point is irrelevant to that theory of protection. After all, Oracle's developers could have "put all of the classes [of the platform] into one giant package"—devoid of all structure—since the virtual machine does not care where the code resides. A20,788.

The irony of the court's approach is that it found the entire assemblage devoid of protection *because of* copying of literal elements; i.e., because the "commands" or declaring code were not, in its view, protected. But, even if Google wrote different declaring code for every method and class, it would still have copied a creative organization that is protected. It is enough that Google organized the Android package elements to map directly onto Oracle's organization. *Altai*, 982 F.2d at 702. For that reason, alone, the judgment must be reversed.

In any event, even if the focus were just on structure and organization of specific commands, the court's "method of operation" analysis was wrong—devastatingly so, for the software industry. So, too, was the "interoperability" concept it invoked to support its analysis.

1. The district court erred in dismissing the organization as an unprotected "method of operation."

Copyright does not "extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery." 17 U.S.C. § 102(b). Section 102(b) codifies the traditional idea/expression dichotomy and the merger doctrine that flows from it. *Apple Computer, Inc. v. Microsoft Corp.*, 35 F.3d 1435, 1443 & n.11 (9th Cir. 1994). The § 102(b) argument fails for the same reason merger fails. *Supra* at 48-53.

Regarding software in particular, courts routinely invoke Congress's explanation that § "102(b) is intended … to make clear that the *expression* adopted by the programmer is the copyrightable element in a computer program," but "that the actual processes or methods embodied in the program are not." H.R. Rep. No. 94-1476 (1976) (emphasis added) (quoted in *Altai*, 982 F.2d at 703, and *Apple Computer*, 714 F.2d at 1252-53).

This Court's *Atari* opinion applied this consensus. It described merger and "method of operation" in the same breath and then conducted the inquiries together: "This court, in applying Ninth Circuit law, must determine whether each component of the 10NES program 'qualifies as an expression of an idea, or an idea itself.'" 975 F.2d at 839-40 (citing *Johnson Controls*, 886 F.2d at 1175). The security code was not a "method of operation" for the same reason that it did not run afoul of the merger doctrine: there were "alternate expressions … available." *Id.* at 840.

So, too, here. Since, as we demonstrate above, the original authors of Oracle's packages had limitless "alternate expressions … available" for selecting and arranging the various programs in each package, the idea for each package does not merge into the expression, and § 102 is not implicated. *Supra* at 51-53.

Instead of following this Court's and the Ninth Circuit's definition of a "method of operation," the district court substituted its own definition. It reasoned that not a single line of declaring code "can[] receive copyright protection" because they are "commands to carry out pre-assigned functions." A166-67. That is wrong. That definition is essentially the same as the Copyright Act's definition of protectable "computer program": "a set of statements or instructions to be used directly or indirectly in a computer *in order to bring about a certain result*." 17 U.S.C. § 101 (emphasis added). If a computer program is unprotectable simply because it "carr[ies] out pre-assigned functions," no computer program is protectable.

The software cases the district court discussed disprove its rationale. Those cases recognize the copyrightability of source code, even though it consists of "commands to carry out pre-assigned functions." The Seventh Circuit, for example, rejected the district court's theory, reasoning that "word-processing software" does not become an unprotectable "'system' just because it has a command structure for producing paragraphs." *Am. Dental*, 126 F.3d at 980. The Tenth Circuit agreed: "[A]lthough an element of a work may be characterized as a method of operation, that element may nevertheless contain expression that is eligible for copyright protection." *Mitel, Inc.*

v. Iqtel, Inc., 124 F.3d 1366, 1372 (1997); *see Toro Co. v. R & R Prods. Co.*, 787 F.2d 1208, 1212 (8th Cir. 1986) (that a work is a "system" under § 102(b) does not preclude copyright protection for the "particular expression" of the system); 1-2 Nimmer on Copyright § 2.03[D].

The district court was evidently influenced by a line in *Lotus Development Corp. v. Borland International, Inc.*, 49 F.3d 807, 810 (1st Cir. 1995), *aff'd by equally divided court*, 516 U.S. 233 (1996), that has no bearing here. There, the defendant copied a relatively simple menu system and interface but "did not copy any … underlying computer code." *Id.* at 810. *Lotus*, therefore, does not address and cannot apply to verbatim copying of source code.

To be sure, *Lotus* defines "method of operation" very expansively: as "the means by which a person operates something." *Id.* at 815. But that definition cannot be applied beyond the facts of that case, because it would strip all computer programs of copyright protection despite Congress's decision to protect software.

No other circuit adopts the *Lotus* formulation and no opinion applies it to a case like this. At least one circuit explicitly "decline[d] to adopt the *Lotus* court's approach to section 102(b)." *Mitel*, 124 F.3d at

1372. The breadth of the definition was undoubtedly part of the reason the Supreme Court granted certiorari in *Lotus*. That the case split the Court 4-4 confirms that the holding is highly in doubt and the definition on which it was based almost certainly doomed. 516 U.S. 233 (1996).

2. The district court erred in invoking interoperability in support of "method of operation."

Equally mistaken was the court's view that "[i]nteroperability sheds further light on the character of the command structure as a system or method of operation." A167. The court adopted Google's argument that declaring code in Oracle's 37 packages lost all copyright protection—years after they were written—because they became wildly popular and Google wanted the Java community of programmers to flock to Android. It is like Ann Droid saying: "No one would buy my book unless I copied the key parts of a wildly popular series. Ergo, that material must not have any copyright protection." Google's argument is wrong on the law and the record.

Doctrinally, interoperability is irrelevant to whether the packages are copyrightable. The court's interoperability rationale suffers from the same focus on the wrong author as its merger analysis. *Supra* at

52-53. Here, again, the copyrightability analysis must be conducted ex ante—from the perspective of the *original* authors of *Oracle's* packages, and what constrained *them*. Oracle's developers wanted a bestseller. For the reasons already explained, Oracle's developers were not in the least bit constrained by an imperative to cater to some competitor who might come along years later and want to copy all of their declaring code without a promise of compatibility.

If interoperability is relevant at all, it would be only to fair use (discussed *infra* at 68-77), as in the cases the district court invoked. A152-61, 168 (discussing *Sony Computer Entm't, Inc. v. Connectix Corp.,* 203 F.3d 596, 602-08 (9th Cir. 2000); *Sega*, 977 F.2d at 1522-23). But, in any event, for the reasons explained above, an interoperability defense has no bearing on whether the work was protectable—and specifically, on whether it was a method of operation. *See* 17 U.S.C. § 302(a).

Apple Computer rejected Google's exact argument. There, the defendant justified its infringement because there were only "a limited number of ways to arrange operating systems to enable a computer to run … Apple-compatible software." 714 F.2d at 1253 (quotation marks omitted). The court held: "[Defendant] may wish to achieve total compatibility with independently developed application programs[,] … but that is a commercial and competitive objective which does not enter into the somewhat metaphysical issue of whether particular ideas and expressions have merged." *Id.*

The Ninth Circuit agrees. In *PMI*, it rejected the argument that everyone could copy the plaintiff's medical coding system because the system had become the "industry standard." 121 F.3d at 520 n.8. Like Google here, competitors remained free to "develop comparative or better coding … and lobby" for their adoption. *Id.* Copyright "prevents wholesale copying of an existing system." *Id.*

Moreover, Google's copying was not about interoperability. Interoperability means that programs written for Android would run on the Java platform and vice versa. Google wanted the opposite: to copy enough code to make Android familiar enough to "[l]everage" the millions of Java programmers who knew Oracle's packages, A2033, but not copy all the code that would be required for interoperability. Accordingly, many programmers now write *Android-only* programs that do *not* work on the Java platform. In so doing, Google made Android unusable for many of the "millions of lines of code [that] had been written in Java before Android arrived." A167; *see* A22,397-98, 22,463.

Don't take our word for it. Google's internal "Android Press Q&A" answering the most important questions upon Android's release said it all:

> Q48. Does Android support existing Java apps?
>
> A. No.
>
> Q49. Is Android Java compatible?
>
> A. No.

A2205. That was not some mistake by a benighted PR department. If one person at Google knew the definitive answer to the question, it would have been its Technical Program Manager for Android Compatibility. A21,172. He testified that "Android does not support Java applications" and "is not Java compatible." A21,179; *see also* A21,503-04 ("[Y]ou don't really have compatibility. You can't ship code from one platform to another.").

* * *

The district court worried that "[t]o accept Oracle's claim would be to allow anyone to copyright one version of code to carry out a system of commands and thereby bar all others from writing their own different versions to carry out all or part of the same commands." A170. Not so. The issue is not Google's different implementing code. Rather, it is Google's violation of the Copyright Act by co-opting thousands of the exact lines of code Oracle wrote and the exact creative organization Oracle designed that made its work so popular.

Congress, the courts, and the Founders determined that "the best way to advance public welfare" is to "encourage[]" the authors of such works to engage in "individual effort by" offering them "personal gain." *Mazer*, 347 U.S. at 219; *accord* U.S. Const. art. I, § 8; 17 U.S.C. § 106. That wisdom applies as much to Oracle's declaring code as to all other literary works. Oracle invested years and hundreds of millions of dollars to author software packages that it would license others. The surest way to guarantee that no company ever makes an investment like that again is to declare that "the public w[as] and remain[s] free to … us[e] exactly the same [declaring code] … and organiz[ation]." A165.

II. GOOGLE CANNOT ESTABLISH THAT ITS COMMERCIALLY MOTIVATED AND ILLICIT VERBATIM COPYING IS FAIR USE

This Court should not stop at finding that Google infringed Oracle's copyrighted work. A remand to decide fair use is pointless. This Court should rule, as a matter of law, that Google's commercial use of Oracle's work in a market where Oracle already competed was not fair use.

Fair use is "an affirmative defense"—a limited exception to the copyright holder's exclusive rights, where Google bears the burden of proof. *Harper & Row*, 471 U.S. at 561. The district court should have declared, as a matter of law, that Google's copying was not fair use, A129, as the Supreme Court and Ninth Circuit frequently have done. *Harper & Row*, 471 U.S. at 561; *see Monge v. Maya Magazines, Inc.*, 688 F.3d 1164, 1184 (9th Cir. 2012); *Worldwide Church of God v. Phil. Church of God, Inc.*, 227 F.3d 1110, 1121 (9th Cir. 2000).

The relevant facts are discussed at length above, so we focus on the law and reference (but do not repeat) prior factual discussions.

Congress framed the "fair use" inquiry around four nonexclusive factors:

> (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
>
> (2) the nature of the copyrighted work;
>
> (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
>
> (4) the effect of the use upon the potential market for or value of the copyrighted work."

17 U.S.C. § 107. "The central purpose of the investigation is to see … whether the new work merely supersedes the objects of the original creation." *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994); *accord Harper & Row*, 471 U.S. at 550. "[F]air use … always preclude[s] a use that supersedes"—i.e., replaces—"the use of the original." *Harper & Row*, 471 U.S. at 550. This is what happened when Android preempted the burgeoning market for Java in smartphones. Every factor cuts against Google here.

A. Google's Copying Was Commercially Motivated, Not Transformative, And Illicit.

Google's use of Oracle's code is purely commercial. *Id.* at 562. Android is one of the most lucrative endeavors of the past decade. Google's counsel conceded that "the fact that it's a commercial use is not in dispute …. The evidence is pretty clear that they created it to provide a platform on which other Google product[s] could do better." A21,591. The district court agreed: "Google's internal documents show[] how many billions of dollars they expected to make off of [Android]…. This was intended for commercial purposes with large amounts of money at stake and, therefore, it was not fair use. It was copying." A21,594.

In considering the first factor, courts also inquire whether the copied material substitutes for the original or, instead, adds or changes the purpose of the original, thereby "transform[ing]" it in a meaningful way. *Campbell*, 510 U.S. at 579. Google's use of Java declaring code was anything but transformative. Mere alteration is not transformation. A use of copied material is not transformative unless the material is used "in a different manner or for a different purpose from the original." Hon. Pierre Leval, *Toward a Fair Use Standard*, 103 Harv. L. Rev. 1105, 1111 (1990); *see Campbell*, 510 U.S. at 579.

Google's use of the declaring code was exactly the same as in Java: to call upon prewritten packages to perform the same functions. The packages also serve the identical purpose: solving the same complex problems and performing the same often-needed functions programmers desire. While using the declaring code in exactly the same way as the original, Google deployed that purloined code in Android to compete directly with commercially licensed derivatives of Oracle's work. Oracle licenses Java in the mobile market and licensed it for smartphones specifically, including RIM's Blackberry, Nokia's Series 60 phones, and Danger's Sidekick/Hiptop. *Supra* at 15-16.

Such superseding use is "*always*" unfair. *Harper & Row*, 471 U.S. at 550 (emphasis added); *id.* at 569 ("[A] use that supplants any part of the normal market for a copyrighted work would ordinarily be considered an infringement." (citation omitted)). Copying work to use for the same purpose simply cannot be fair use. *See Peter Letterese & Assocs. v. World Inst. of Scientology Enters., Int'l*, 533 F.3d 1287, 1311, 1318 (11th Cir. 2008) (book about sales techniques superseded the original even though it "adopt[ed] a different format, incorporate[d] pedagogical tools … , and condense[d] the material in the [original] book"); *Elvis Presley Enters., Inc. v. Passport Video*, 349 F.3d 622, 628-30 (9th Cir. 2003) (documentary containing "significant portions" of video clips supersedes original and is not fair use); *Twin Peaks Prods., Inc. v. Publ'ns Int'l, Ltd.*, 996 F.2d 1366, 1375-77 (2d Cir. 1993) (holding that a comprehensive guide to the characters and plot of a television show supersedes the show and is not fair use).

Finally, "[f]air use presupposes good faith and fair dealing." *Harper & Row*, 471 U.S. at 562 (internal quotation marks omitted). Google considered, negotiated, and ultimately rejected the opportunity to license the packages, deciding to "[d]o Java anyway and defend our decision, perhaps making enemies along the way." A1166. That Google knew it needed a license, and then sought but did not obtain one, weighs heavily in showing "the character of the use" was not fair. *Los Angeles News Serv. v. KCAL-TV Channel 9*, 108 F.3d 1119, 1122 (9th Cir. 1997). Google "knowingly … exploited a purloined work for free that could have [otherwise] been obtained." *Id.*

B. Google Copied A Creative Work.

The nature of Oracle's copyrighted work also precludes fair use. The Java platform is the product of "substantial creative effort." *Rogers v. Koons*, 960 F.2d 301, 304 (2d Cir. 1992). Indeed, Google's "Java guru," A142, explained: Designing packages is "a noble and rewarding craft," where "creative[ity]" and "aesthetic[s] matter." A20,917, 20,920-22. Java developers' creative efforts resulted in thousands of lines of original declaring code, embodying a sophisticated design and organization that programmers find easy to use. “Of course” this was “creative,” the district court found. A164.

Wall Data Inc. v. Los Angeles County Sheriff's Dep't, 447 F.3d 769, 778 (9th Cir. 2006), is instructive. The defendant there also copied software. *Id.* at 778. Because designing the software took “several years” work and a “multi-million dollar” investment, “the nature of the copyrighted work weigh[ed] against a finding of fair use.” *Id.* at 780. Accordingly, the Ninth Circuit rejected fair use.

Here too. Oracle invested years of labor and hundreds of millions of dollars in researching and developing the packages. Java's chief architect spent almost two years developing a single set of related packages. A22,403-04. Oracle's substantial and ongoing development effort cost “hundreds of millions of dollars” a year just “on Java.” A20,557.

C. Google Verbatim Copied The Code And Structure That Matters To A Java Programmer.

Google also loses under “the amount and substantiality of the portion used” factor. *Harper & Row* is critical. The 300-400 words that *The Nation* copied verbatim were less than 1% of the original work. But the Court held this factor favored the copyright owner because the infringing work was "structured around the quoted excerpts which serve as its dramatic focal points." 471 U.S. at 566. Indeed, the infringer "quoted these passages precisely because they qualitatively embodied" the author's "distinctive expression." *Id.* at 565. The "expressive value of the excerpts and their key role in the infringing work" meant the use was not fair. *Id.* at 566.

The same is true here. Google copied the only code with any relevance to programmers: the declaring code. *Supra* at 20-21, 43-44. Google "quoted these passages precisely because they qualitatively embodied" Oracle's "distinctive expression" and were familiar to programmers. *Harper & Row*, 471 U.S. at 565; A5874 (Google took "the good stuff from Java"); *accord* A21,503, 21,957-59. As in *Harper & Row,* the "expressive value of the excerpts and their key role in the infringing work" mean that this factor does not support fair use. 471 U.S. at 566.

Google's defense that it created its own implementing code is beside the point. *The Nation* wrote 87% of its article. But, like *The Nation*, Google copied the "focal point[]" of the work, *id.*—the declaring code. "[T]he amount and substantiality of the portion used" factor does not favor Google.

D. Google's Copying Damaged The Value Of The Java Platform In The Smartphone Market.

Google also fails the final factor—"the effect of the use upon the potential market for or value of the copyrighted work." To prevail, Google must establish that Android did "not materially impair the marketability of the work which is copied." *Harper & Row*, 471 U.S. at 566. "This inquiry must take account … harm to the original [and] … derivative works," *id.* at 568; *see* 17 U.S.C. § 106(2) (exclusive statutory right "to authorize … derivative works based upon the copyrighted work"), and the effect on the potential market if the challenged use "become[s] widespread," *Harper & Row*, 471 U.S. at 568. In two different ways Android materially impaired the actual and potential market for Oracle's derivative works and superseded the original and its derivatives, thereby compelling a conclusion against Google on this "single most important element of fair use." *Id.* at 566.

First, Android was designed to be *in*compatible with and thereby fragment the Java platform. As explained, Android undercuts the "write once, run anywhere" credo that is central to Java's value proposition and replaces it with "write once, run only on Android." *Supra* at 66-67. Android thereby deprives Java of the value of compatibility with those additional applications.

Second, Android was designed to replace Java SE derivative works in the smartphone market. Android gave handset manufacturers, wireless carriers, and software vendors a Java-friendly programming environment without licensing fees. A21,631, 21,763. If similar unauthorized, commercial use of the declaring code by other infringers became "widespread," *Harper & Row*, 471 U.S. at 568, that would decimate all Java commercial licensing opportunities of every kind.

When Google copied the Java packages and released Android, Oracle was licensing in the mobile and smartphone markets. *Supra* at 15-16. Where the plaintiff is "in the business of selling [the work] and [has] done so in the past" it "unequivocally demonstrates a market for the [work]." *Monge*, 688 F.3d at 1181. Android thus substantially harmed Oracle's already "very lucrative," commercial opportunities. A22,237. Indeed, Android "now comprise[s] a large share of the United States [smartphone] market," A135, with 750,000 new devices activated *every day*, A21,188. Google gives away Android for free, A135, and competes against Oracle's licensing of Java derivatives. As Oracle's President and CFO pointedly observed: "It's pretty hard to compete with free," A22,498, which Oracle learned the hard way with Amazon. *Supra* at 29.

Nothing about Google's use was fair.

CONCLUSION

For the foregoing reasons, this Court should reverse the judgment.

Dated: February 11, 2013 Respectfully submitted,

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ADDENDUM

EXCERPT OF TRANSCRIPT OF PROCEEDINGS (INCLUDING ORDER REGARDING GOOGLE INC.'S FAIR USE DEFENSE)

DATED MAY 9, 2012

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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

BEFORE THE HONORABLE WILLIAM H. ALSUP

ORACLE AMERICA, INC.,)
)
Plaintiff,)
)
VS.) No. C 10-3561 WHA
)
GOOGLE, INC.,)
)
Defendant.) San Francisco, California
___________________________________) May 9, 2012

TRANSCRIPT OF JURY TRIAL PROCEEDINGS

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(Appearances continued on next page)

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"expression" as it's used in the computer language itself. That would be a useful thing to add in here?

And I want you also to know that the -- the books are not consistent with the way some of you use the word "declaration." The book that's in evidence and which was written by the pros seems to use the word "declaration" slightly differently than was -- and maybe even the word "signature."

I would like for you to help me understand what the correct answer is so that we can send it up to the Court of Appeals with a -- you know, a deck of cards that has 52 cards. You each know what's in there and you make your arguments based on that and have a common body of description here that works.

So there we are. I will see you back here at 1:45. Thank you.

(Whereupon there was a recess in the proceedings from 1:04 p.m. until 1:45 p.m.)

THE COURT: Please be seated. Let's go back to work.

MR. JACOBS: We have a joint request.

THE COURT: Okay. Make sure we're hooked up. Are we ready to go, Katherine?

We're ready. Okay. Joint request.

MR. JACOBS: We're both working hard on the Java description, but would request to 5 o'clock to get it back to you.

THE COURT: That's fine. No problem.

I have a related request, but you tell me if this is too hard to do.

I think it would be useful to have a chart that had the 37 packages down column 1. Next column would be number of classes in package Java.

Next would be number of methods. And here I need your help. Methods, interfaces and fields, or methods alone would be, perhaps, enough. But methods and interfaces Java. And then the same two columns but for Android.

So it would be a 5-column chart, 37 rows with titles. And it would indicate the number of classes, the number of methods broken out by each of the 37.

Now, you ought to be able to reconstruct that just from the code itself. And the code itself is in evidence, right?

MR. JACOBS: Yes, Your Honor.

THE COURT: So would that be a doable project, or is that just too much for two gigantic companies with seven or eight lawyers at each table?

(Laughter)

MR. JACOBS: Very doable, Your Honor.

MR. VAN NEST: Is that a rhetorical question, Your Honor?

MR. JACOBS: It's very doable, Your Honor.

MR. BABER: It's not only doable, Your Honor, I think it's already been done. The expert reports -- I believe, Professor Astrachan's report, he has a chart very much like that.

THE COURT: Well, I would like to see it, but I -- if you two are going to start arguing over the -- I'd like for you to iron out your -- this is a matter of counting up the items.

So, anyway, if you could get me something like that by tomorrow, that would be good.

MR. JACOBS: Thank you, Your Honor. We will do that.

MR. KWUN: Your Honor, there is one technical point. There's two different ways you could count the number of methods that are in a class. One is, you could count the number that are actually declared in that class. But as Your Honor knows, you can also inherit methods from a super class.

So to the outside world, it doesn't matter whether those methods were declared within that class or inherited from a super class. So you could either count the number of methods that are sort of available to that class, or you can count the numbers that are expressly declared.

THE COURT: I want the expressly declared.

MR. KWUN: Thank you, Your Honor.

THE COURT: And you can put in an asterisk on that point. But the -- kind of like counting up the number of lines that declare something.

Okay. We're here for Rule 50. And we have motions on both sides. Let's start with the motion for JMOL by Oracle on fair use.

MR. JACOBS: I'd like to start, Your Honor, by giving you a list of cases from 1992 to the present, that have found no fair use as a matter of law.

And we begin with *Triad*. These are Ninth Circuit cases. 64 F.3d 1330. That was a case involving an independent service operator copying code into RAM.

And the Court decided that that was nontransformative, and on factor four noted that:

> "If independent service operators like Southeastern freely used *Triad's* copyrighted software on a widespread basis to compete with *Triad*, this would likely cause a significant adverse impact on *Triad's* licensing and service revenues, and lower returns on its copyrighted software investment."

Then there's the *Wall Data* case, in which the Court held that while software was not purely creative, it is protected under the Copyright Act. The plaintiff presented undisputed evidence that its software products were developed over several years, required a multi-million-dollar investment.

And, on factor four:

"Whenever a user puts copyrighted software to uses beyond the uses it bargained for, it affects the legitimate market for the product. And widespread unlicensed copying" -- which would be the effect of a fair use ruling in the defendant's favor in *Wall Data* -- "could affect the market for the plaintiff's software."

So that's 447 F.3d 769.

So, again, these are cases deciding against fair use as a matter of law.

Then there's the *Worldwide Church of God* case, which is interesting in that it falls into the category that I think we could box this case into. It's kind of an adjacent markets case. "A" has a copyrighted work. It is distributing it, licensing it, marketing it in a certain realm. "B" comes along and takes the heart of the copyrighted work and decides to market it in a new way, in a new form, to a new audience. It doesn't fundamentally change it.

And *Worldwide Church of God* was a case about books that had been appropriated for use in a different church. So an entirely different audience. And no fair use was found there.

The Court noted there that:

"If there are no genuine issues of material

> fact, or if even after resolving all issues in favor of the opposing party, if a reasonable trier of fact can reach only one conclusion, a court may conclude as a matter of law whether the challenged use qualifies as a fair use."

And citing cases that did that as a matter of law.

L.A. News is another interesting case for the kind of adjacent markets theory that I was describing. 149 F.3d 987.

That's a case where the plaintiff owned the works. They produced videotapes and licensed them to a broadcasting company. When the broadcasting company aired the works, it simultaneous transmitted them to a televisions news agency with which the broadcasting company had an agreement. And defendant copied the works and transmitted them to paying subscribers.

Summary judgment in favor of plaintiff, finding no fair use, was commercial, not nonprofit, not very transformative. They took the heart of the work.

> "Allowing such use would result in a substantially adverse impact on the potential market for the original work."

So the potential market.

I think there's an important point here. We do not have to prove lost profits to prove an adverse impact on the market for the Java software that is threatened by Android.

This is not that kind of causal nexus.

Courts frequently make matter of law predictions about the impact of a defendant's activities on the plaintiff's -- on the market for the plaintiff's work.

The *Leadsinger* case. I mentioned this earlier in our discussions. This is 512 F.3d 522. A 2008 Ninth Circuit case.

This is at the motion to dismiss -- this is affirming a motion to dismiss. The defendant sought declaratory judgment that it could copy song lyrics into karaoke. That's kind of interesting because the song lyrics are only a component of a song, and they are arguably being placed into a new -- again, an adjacent market.

But this case didn't even get beyond the pleading stage. There was no claim of transformative use. Karaoke does not add to or alter the copyrighted lyrics and is not transformative.

And then that brings us to the *Abend* case, which in some ways is the most interesting of all because *Abend* owned the copyright on the original story for *Rear Window*, the Hitchcock movie. And *Rear Window* was more or less out of distribution. And MCA did a re-release of the film in theaters, on TV, and on video cassette.

And the District Court granted summary judgment for the defendants based on fair use. And the Court of Appeals reverse.

"Commercial use of a fictional story that adversely affects the story owner's adaptations rights is a classic example of unfair use."

Now, I say that's interesting because you can imagine how the defendant there would argue analogously to Google's argument.

All we did was take -- remember this, the story right that's been infringed. So it's the structure, sequence and organization of the *Rear Window* movie. It's the plot outline, not the movie itself. The owners of the movie rights were not the plaintiff. It was the story owner.

And the defendant there says, this is great for the story. Look how many more people are going to see the story underlying *Rear Window* if this movie is out in these new media, in video cassettes or just re-released into theaters.

The court did not give that argument much weight.

Applied here, these cases allow for only one outcome on Google's fair use defense.

Going through the factors: Google's use is purely commercial. There is no nonprofit purpose. This is no educational purpose.

Of course, they haven't taken the APIs and subjected them to programmers' criticism. They have not done anything other than port the APIs and the structure, sequence and organization of the code into Android, and deployed it into a market close to -- arguably already occupied by Java, in that Java is on smart phones -- so close to and a market in which Java could reasonably expect to be deployed.

How do we know that? We know that because there was licensing negotiation between Google and Sun, in which Google sought to take the Java Application Programming Interfaces, the SSO, et cetera, and deploy it into this adjacent market into a slightly -- and using a different licensing model.

So they sought a license. There's facts going both ways on what license they sought for what when. But the fact of the matter is, the Java technology was so relevant as is to Google's proposed market, that the parties spent a considerable period of time trying to negotiate a license for that use.

And Google went ahead and used the valuable APIs anyway, in their commercial product, never taking that license.

So we know exactly what market has been interfered with here. There's no hypothetical. There was a licensing discussion. And then, of course, there's lots of testimony undisputed about Sun, now Oracle's, licensing model. The specification license in particular being the license for independent implementations. The most applicable license for what Google did or wished to do.

If Google's use is fair use, that licensing market is destroyed. There is no copyright right to back up that kind of openness, that kind of freedom to develop independent implementations.

There is no way, to use Mr. Schwartz's language, to force compliance with this form of openness through the assertion of copyright.

And then that brings us to the other kind of license that was most -- that is most seriously disrupted here, and that's the GPL. Because, of course, there's undisputed testimony that Java is available pursuant to an open source license.

It's an open source license that didn't suit Google's commercial needs. And so they took the 37 packages and deployed them in their own -- to their own end, using their own license.

Once again, if that is fair use, there is no copyright right to enforce the GPL -- to enforce GPL license compliance, at least against someone who chooses to take only the structure, sequence and organization. Which, as we've all heard, is the heart of the matter here. It's the most valuable part of the copyrighted work as a whole. It is the 37 packages that Google wanted because they were the most popular.

So this is another reason why this cannot be fair use. Popularity does not allow for infringement. Investment does not allow for infringement.

It can't be the case that the more popular your work is, the more the defendant can take it and deploy it to its own commercial benefit. That just gets copyright law and the incentives in the Constitution backwards.

There is case after case, and it is valid, strong authority today that a commercial use is presumptively unfair. The cases that have gone the other way on that question have been categorical -- have been cases in categories.

Parody cases, in which the parody itself is commercial. But we like parodies, and we think they are valuable, and they don't really destroy the market for the original work. Because if you want to see the original work, you've got to see the original work not just the parody.

There are the reverse engineering cases that we've discussed at length in our brief. Again, a kind of a category in the law where the ultimate product is concededly non-infringing. And the only question is whether the intermediate copying is excused on fair use grounds. Again, a very narrow category.

But *Harper & Row, Passport Video,* the *Leadsinger* case as recently as a couple of years ago, all reinforce that a commercial use -- in the general case, a commercial use is presumptively -- gives rise to a presumption of harm to the market and, therefore, the other factors are going to have to tilt very heavily in the defendant's favor if we're ever going to find in favor of the defendant on fair use.

Looking more narrowly at the doctrine around transformative, Google's use was not. The transformative cases are trying to address a case in which the expression is recast or recapitulated in a form that changes its underlying message.

And probably Google's best case is a Google case, in which the plaintiff owned photographic rights. Google took thumbnails of them as part of the search engine. And so Google wins that a search engine use of thumbnails of the original photos is fair use. Why? Well, a search engine is an entirely different purpose, an entirely different use.

Now, frankly, I think that's a pretty close case. The idea that you could reproduce a photograph in thumbnails and display it to the world without getting a copyright, that's a close case under fair use. But, it did go Google's way.

But just compare the facts there with the facts here. A search engine as compared to a photographer. Android as compared to Java. A software platform as against a software platform. Couldn't be software platform to software platform can't be much closer. And photograph to search engine considerably more remote.

So Google did nothing to change the message of the APIs. The APIs were a popular, attractive, heavily-invested-in way to reach programmers and make the Java platform attractive as a programming environment. And looking in the other direction, a set of design materials for class library creators, creating independent implementations under the specification license.

What did Google do? Took the 37 packages. They created very similar documentation. They put it out there for Java programmers to use in the same way that they use the 37 packages in Java, and created class libraries. Independent implementations, they claim. We saw that wasn't true, but it doesn't really matter for present purposes.

They created supposed independent implementations in core libraries, just like the licensed or Sun developers do with that information.

So there is no recasting. There is no reforming. There is no new message. It's the very same message to the very same purposes -- purpose, for purposes of fair use analysis.

Creative versus functional. One can debate this. Obviously, software is not a symphony. Software is not a poem. But what was interesting about this trial was the undisputed evidence from both sides and both sides' experts about how creative the authoring process of APIs is.

This is not the creation of a functional work within the meaning of copyright law. Not when we heard from witness after witness how much flexibility there is in creating APIs, and how much creative labor went into the process of creating these 37 Java APIs.

Now, let me -- let me just do a parenthetical here, because I think it's important.

From what you have signaled to us so far, Your Honor, the decision you're writing is going to be heavily grounded in the facts. The facts of Java. The facts of the Java Application Programming Interfaces and these 37 packages.

Not all interfaces are created equal for purposes of copyright or for purposes of fair use analysis.

These core library package APIs are very closely drawn to the underlying code itself. We saw that in the method declarations showing up in the API documentation and in the code.

This is not merely a set of -- of numerical values that represent an interface to a PlayStation box or a Nintendo box. Thousands of pages of writing represent the 37 packages here.

So the word "interface" shouldn't be overused in understanding these fair use cases. We're talking about these 37 packages and the creativity and authorship that went into them, not whether every computer program is creative or functional. Not whether every interface is creative or functional. These programming interfaces.

Undisputed evidence about the creativity that went into the authoring process.

Third factor, amount and substantiality of the portion used.

Harper & Row. Great case. 300 words out of 200,000, and just a week before the book is coming out. So all sorts of arguments: We made a bigger market for the book. We have more readers for the book because we're a magazine and we're the nation and we're publishing an extract from Harper & Row.

But, no, you can't take 300 words out of 200,000 from an unpublished Presidential Memoir. The portions actually quoted were selected, according to the Supreme Court, as among the most powerful passages in those chapters.

And that's what Google did here. They took the 37 packages. They took -- one of their witnesses said, We took the good stuff.

They took the 37 packages that they thought the programmers programming for Android would most want to see, and left the rest behind.

And then, finally, that brings me back to the harm to the market. And their only evidence, if you call it that, on Google's side is that Java ME is doing okay under Oracle.

Well, a couple of things about that. First of all, undisputedly, Java ME was not the target for Android. Java SE was.

Secondly, the undisputed evidence is that Java ME is not doing well in Android's markets. Java ME is doing well in places where Android has not yet penetrated.

And, by contrast, Java ME was licensed, for example, to Amazon for its Kindle, and is no longer licensed to Amazon for the Kindle Fire because Android has taken its place.

So even in the most kind of granular causation-based analysis, much more rigorous than the cases require for fair use, we have evidence of direct market supplantation.

But I think -- but, the evidence was undisputed, again, that the Java model is a comprehensive model of licensing of both underlying code and of the specifications; that that model has been threatened by Android because Google, notwithstanding the previous negotiations, took what it wanted for itself without a license.

The whole approach that Sun, now Oracle, takes to fragmentation is threatened by Android because Android took subset and superset it.

And while there was a lot of evidence going both ways on fragmentation -- on whether the word "fragmentation" can reasonably be applied to say the differences between ME and SE, there was undisputed evidence that within platforms Sun, now Oracle, took aggressive measures to try as best they could to control this kind of open source model in which there are independent implementations.

And, it's undisputed that Oracle, upon acquiring Sun, invested substantially more resources in Java. There was testimony from Mr. Reinhold about a near doubling of the number of engineers working on Java. So the commitment is evident in the assignment of resources to the project.

And what Google is doing is looking backwards and saying, well, Sun was not a strong company. Sun had let fragmentation develop.

That's not the right analysis. They don't get to take -- this is not a case where -- this is not an area of law where the defendant gets to take advantage of the plaintiff's weaknesses at a particular moment in time and then say, see, we get away with it.

So on all four factors, Google loses. Loses strongly. And, again, on undisputed evidence.

But the underlying purpose of copyright law and the underlying purpose of fair use also needs to be looked at here. One of the basic reasons for fair use analysis is to deal with a situation in which, by its nature, the plaintiff would be unwilling to grant a license. That's the parody case. That's why we have a commercial use for -- commercial use is okay even if it's a parody because most authors don't like their works to be parodied.

But here there is a license. Google may not like it for business reasons. May have had a different business model in mind. That was Mr. Rubin's testimony. The negotiations broke down because Sun would not adopt Google's business model. But business model differences do not give rise to fair use defense.

Thank you, Your Honor.

THE COURT: All right. Google's turn.

MR. VAN NEST: Good afternoon, Your Honor.

I think the cases make very clear that commercial use is not a disabling factor. It's simply one factor.

All of the leading fair use cases recently in our Circuit have dealt with situations where the defendant's use was a commercial use.

If you look at *Sony vs. Connectix*, the video equipment manufacturer engineered Sony's APIs and created a competing game platform to play video games.

Sega vs. Accolade, video game maker copied Sega's APIs and made video games that were compatible with the Sega system.

Campbell, recent Supreme Court case was a rap group --

THE COURT: Sorry, did the *Sega* case involve APIs? I didn't remember that part.

MR. VAN NEST: They had to reverse engineer the interfaces so they could make games that were compatible. They are not the same kind of APIs we're talking about here.

But what they ended up making was video games that competed with the video games Sega sold for the Sega platform.

THE COURT: Well, of course, I understood that part.

But you said they copied the APIs. I don't even remember that term being in the decision.

MR. VAN NEST: They --

THE COURT: Are you sure that term is in the decision?

MR. VAN NEST: I'm not sure, Your Honor. But what they did was reverse engineer the Gateway, if you will, to the Sega system so they could make games that were compatible with it.

My point is simply that all these cases -- including *Campbell* in the Supreme Court, which says there is no presumption against fair use just because there's a commercial use. Campbell was a rap group selling its music for profit.

So all of these cases confirm that, just as Your Honor's instruction says, the commercial use is one factor. And fair use determination involves weighing all the factors, and giving them the weight that the jury deems appropriate.

Similarly, on the other big point for Oracle, the mere fact that the defendant's use has some impact on the plaintiff's copyrighted work also doesn't disable anything.

Obviously, in Sony, the whole point was to make a competing platform. Connectix did that so that people could play games on a computer that they were currently only playing on Sony's PlayStation.

So the court there said, very clearly, that, yes, we understand there's going to be an impact on Sony. But we recognize that this is a brand-new platform that's been created; that the whole point of the copyright law to protect expression, not ideas. If people are creating a new platform where others can express themselves and compete, that's -- that's consistent with fair use, consistent with the purpose of the Copyright Act.

And, obviously, in *Sony* there was no question there would be an impact on the plaintiff, and their fair use was determined to be appropriate.

Same with *Sega*. In *Sega* there was no question that both companies were going to be in the business of selling games, and there would be competition and impact.

So there again the Court said, because it's a functional nature of -- it's a computer code here, we're going to -- we're going to allow fair use.

Now, I would say the cases they are relying on, most of the ones Mr. Jacobs referred to are not in their brief, but they are all cases about things like books, where the book is wholesale copied, or poems, or songs, or moves, or plays.

This is not such a thing. This is a situation where we're talking about computer software, which is purely functional.

When you get down to looking at the four factors, there is an overwhelming amount of evidence of fair use, consistent with what we told the jury in the opening and the closing.

And I'm not going to claim that there's anything undisputed in this case. There was plenty of evidence adduced by both parties.

But with respect to the transformative nature of Android, there were two kind of principal points. One was, it was an open platform. The platform was not licensed or sold. It was open for anyone to use.

And Your Honor heard testimony from Rubin, from Schwartz, from Ellison, that they all attempted to take advantage of the Android platform.

It was out there for everybody. It has fostered increased expression in the form of more application developers, increased competition among the handset makers, the carriers, and the app developers. And both Sun and Oracle had an opportunity to compete.

This is exactly what the Ninth Circuit held was appropriate in *Sony vs. Connectix*. If you are opening up a new platform, that is consistent with fair use.

It was also, point two, a brand-new product.

Your Honor is aware that the testimony was the 37 APIs were incorporated into a full stack. The folks at Sun had not been able to create such a full stack, although they are the experts on Java.

You heard testimony that the 37 APIs interact with other layers in the stack, particularly the application framework. That all the source code, all the implementing code in these 37 packages was brand-new and totally different, other than the nine lines we may talk about later this afternoon.

The platform supports all sorts of new functionality and, therefore, there was more than enough evidence to find a transformative nature. And the case law doesn't say that you have to be using the functional features like this in a completely new and different way.

Your instruction was quite right; what has been added, what has been changed, and that's exactly consistent with what we proved with respect to Android.

With respect to the nature of the copyrighted work, no question it's functional. No question that to some degree the words and names are necessary to run existing code. If you want to run existing Java language code, you have to use the same fully qualified names. You heard that from a number of witnesses.

These APIs are expected to be available for programmers in Java. Dr. Bloch testified at length about that. Dr. Astrachan, too.

There are some of them that are absolutely required just to run the language. There was a lot of testimony about that and admissions by Dr. Mitchell and Dr. Reinhold that some of these APIs are necessary just to use the language itself.

And it's clear in the Ninth Circuit that computer systems and APIs are deemed functional and accorded less protection as a result. There really is no doubt. I think the testimony was that there was a lot of creative effort that went into these. That's all fine and well, but the factor with respect to the nature of the copyrighted work is addressed to what's the nature of the completed work? And the nature of it here is it's functional.

With respect to the amount of copyrighted material used, again 7,000 lines out of 2.8 million lines, that was the conclusion of both Dr. Astrachan, Dr. Mitchell.

Dr. Reinhold conceded that the SSO, which was all that was at issue at the end of the day, was 7,000 to 10,000 lines of code out of 2.8 million.

The 37 API packages, what was used were the names and the declarations. The source code was completely new, completely different; 15 million lines of code, according to Dr. Astrachan and Mr. Bornstein.

With respect to harm, I think there was -- there was a plentiful amount of evidence here on both sides. Certainly, there was conceded evidence that Java language is still number one in the world. Dr. Mitchell testified to that. Java profits at Oracle are up 10 percent year over year. Mr. Risvi testified to that. According to Oracle, they are having continued success with Java products and products like Rim and Nokia. Mr. Screven and Dr. Reinhold testified to that.

And there is -- there may be evidence of a threat of fragmentation, but no evidence of real fragmentation. Nobody is confused that Android is a Java Platform or part of a Java family.

And we heard a lot of evidence from Dr. Reinhold that fragmentation now means limited to one platform, not across all platforms. Well, Android is not the same platform at J2ME or J2SE. It's a different platform.

THE COURT: Does the Android literature in any way say that these programs previously written in Java will run on Android, or is that just left to the developer to figure out on their own?

MR. VAN NEST: I don't know, your Honor, if the literature says that. I'd have to check. Given that we don't have the Java brand, I doubt it, but I'm not sure. I don't know the answer to that.

But I think developers are aware, as Dr. Bloch testified and Mr. Bornstein, that the -- since you're writing in the Java language and since people do know that Android is written in the Java programming language, that that functionality would certainly be available.

I think the other thing on potential market harm, I do think here the testimony from Schwartz was also important.

He made a decision to welcome Android. They made a decision to support platforms that support Android. They felt it would have been a disaster if Android had used Microsoft language or some other language. And they were persuaded, after debating it internally, that Android could be a good thing for Java, would be a good thing for Java. And, hence, that testimony goes to a lot more than the equitable defenses. It also goes to the fact that the people running Sun at the time thought that Java -- that Android could place a set of rockets onto Java. And they said that publicly.

They've used their own products on top of Android. As your Honor heard, the JavaFx product was something they featured at the JavaOne developer conference in 2008.

THE COURT: Repeat that again.

MR. VAN NEST: The folks at Sun not only endorsed Android, but they built their own product to run on the Android Platform. That's the product that was developed in the video that we saw of the JavaOne conference in 2008. That's folks from Sun on stage showing off the use of a JavaxFX product on top of the Android Platform.

And there was discussion about that between Mr. Schmidt and Mr. Schwartz. There was discussion about that between Mr. Gupta and Mr. Rubin. There was a demonstration at JavaOne in 2008.

And, again, it's all consistent with what Schwartz said, which was: We knew that there were choices. We knew that Android could use other languages. We felt it would have been far, far worse for Android to go off and use some other language than Java where we, Sun, wouldn't have any opportunity to participate. And so that's the way it went.

The final point, your Honor --

THE COURT: Let me ask a question on this, on that point.

Prior to the time that Oracle acquired Sun, what emails or internal materials are there in the Sun records? Are there some? It seems like there was something.

MR. VAN NEST: Yes.

THE COURT: No, but where they were saying it is harmful, that Android is harmful to Java. Is there something like that or am I thinking of the wrong thing?

MR. VAN NEST: I'm not --

THE COURT: Publicly you've got the rockets blog, okay. That works in your favor. But were there some internal documents that contradicted that?

MR. VAN NEST: I'm not aware of any documents that were sent to Google that contradict that.

THE COURT: No, no.

MR. VAN NEST: But I'm not sure what --

THE COURT: I'm talking about internal.

MR. VAN NEST: There may have been some. I'm not aware, but I would say this.

The rockets is just the beginning of it. Remember, that at the same time as the blog, there was a personal email from Schwartz to Schmidt saying, "What can we do to support your announcement? We want to support your announcement." That happened around the time in November.

Then they have a meeting in roughly March or April of '08. Schmidt and Schwartz meet and there are emails around that. Schwartz asked Schmidt: Can we build a product on top of Android? We would like to do that. Can you show me your licensing? What's the open source license? The Apache license. So there is an email exchange between the two of them where Schmidt sends Schwartz an email around the time of their meeting reflecting they can do it.

Then there is another meeting between Rubin and Gupta where Gupta comes to congratulate Rubin on the launch of Android and says: We would like to explore building our own JavaFx product on top of Android. Can we do that?

Then there is the JavaOne conference in '08 where they demonstrate on stage, in the video we all saw, that they have a JavaFX product running on Android.

All of that is happening. And the point of it is simply that the folks running Sun at the time were trying to use Android, the platform. They saw benefit in it for them. They saw benefit in making positive statements about Android and its usage of Java and they were attempting to participate in the platform.

The final point I want to make, your Honor, is that, I mean, the fair use law is pretty clear that -- and your instructions reflect it absolutely; that the jury's job is to look at all the factors. No one factor is determinative. They are to be weighed together. The jury is to give them the weight that they feel they deserve. And no one factor alone is determinative.

And based on that, given the amount of evidence that exists on each of the four factors, JMOL is simply not appropriate.

Mr. Baber wants to add a comment or two.

(Brief pause.)

MR. VAN NEST: He's pointing out that in the *Sega* case there is a reference to interface specifications at Page 1515.

The defendant decompiled object code to get interface specifications, then used the specifications and included functional descriptions of interface requirements in their own manual, but they wrote their own procedures to be compatible.

So it's a similar situation where in Android the interfaces may be the same, but the source code implementing those is different, original written by Android, written by Google developers.

So that's an additional point on the *Sega* case.

THE COURT: All right. Very brief rebuttal.

MR. JACOBS: It's important to emphasize who bears the burden of proof here. It's an affirmative defense. Google bears the burden. They didn't come close to meeting it on the various factors.

Analyzing the decisions, many defendants claim: We're doing you a favor. We're helping you out. You don't realize it. You don't like it. So you're suing us, but actually we're helping you. Court's don't give that much weight.

THE COURT: Here Mr. Schwartz said that rockets were being put on Java. I mean, that -- that's a very helpful document for Google here.

MR. JACOBS: One week later Rich Green, senior executive at Sun, is published in an article that Google said it saw in which he said, "We're very concerned about the fragmentation of Android." Rockets on Java is before the SDK is released. Rich Green's comment about fragmentation is after the SDK is released.

Jonathan Schwartz, no friend --

THE COURT: Why is there more fragment -- didn't Google have the right to -- let's say that Google had written using the Java language it's own set of APIs -- it didn't even use the same words, names, whatever -- from the ground up, but it used the Java language. So it's out there.

And, surely, you would admit that they had the right to do that; correct?

MR. JACOBS: Separating out the APIs, just implementing the --

THE COURT: Oh, no, no, no. They have their own APIs. They don't even use the same names. They have got them organized differently. There is no SSO problem. It's a completely different SSO, completely different set.

It has the same functionality spread around just like -- you can't possibly claim you have the right to ask a method to tell you the cosign of an angle.

MR. JACOBS: That's the Spring case came in, the evidence on Spring.

Spring is a company, as the testimony undisputed revealed, that has implemented an entirely different set of APIs, but supports the Java programming language. We know how Google supports the Java programming language --

THE COURT: All right. Let's say Spring -- are you saying that Spring did something wrong?

MR. JACOBS: No. Spring did not implement the API specifications owned by Oracle.

THE COURT: If Google could have done what Spring did, why is there any greater -- there there would have been immense fragmentation. It would have been completely different. It would have been a Java-based platform that had nothing to do with your version of Java, but instead they did one that was part -- 37 were consistent. The others were not consistent. And why -- if they could do the greater, why couldn't they do the lesser?

MR. JACOBS: Because the lesser has its own commercial burdens. They would have had to make their own investment. They would have had to make their own investment in training developers. They would have had to make their own investment in creating the APIs in the first place.

I mean, that's the nature of intellectual property protection, your Honor.

THE COURT: I understand possibly that point, but I'm talking about in terms of fragmentation.

MR. JACOBS: Fragmentation is defined in the Java environment as implement -- subsetting or supersetting the API specifications. That is what the Java Community understands fragmentation to be. Again, that was undisputed.

And so if they want to do something that creates a whole new nother world, we can't stop that and the Java Community wouldn't understand that as fragmentation either. They would understand that as Google using the Java programming language --

THE COURT: There is no decision anywhere that says copyright prohibits somebody from supersetting, let's say, one method -- one class.

MR. JACOBS: Of course not, your Honor.

THE COURT: All right. So that's just -- that's just the business model.

All right. So I guess your argument comes down to saying: We didn't want anyone to superset our classes and that hurts us in some way. And you call that fragmentation.

MR. JACOBS: There are internal emails at Google acknowledging fragmentation concern. And you heard a lot of testimony about how Google enforces anti-fragmentation in its world through anti-fragmentation provisions, through testing suites. It's an entirely analogous model. And you heard now in Phase two they have invested tremendously in anti-fragmentation.

So, fragmentation is a concern for any platform developer who is trying to create an ecosystem and doesn't have a closed model like -- say, like Apple. If you want to discourage that kind of model, if you want to discourage open models in which independent implementations are allowed, but there's a set of licensing restrictions and agreements that create consistency between those platforms, then go with Google on fair use because it would be devastating to the Java model if people can pick and choose at will and fragment to their heart's content. Because if Google can do it, so can the next guy. And it may not be so --

THE COURT: But aren't you the one that wanted the jury in this case? Didn't I hear Mr. Van Nest at one point say they would waive a jury, and you said no, you wanted a jury. So now we have the jury's work on this.

MR. JACOBS: We do, your Honor.

THE COURT: But now you don't like what the jury came out with. You want the judge to make a ruling.

MR. JACOBS: You're right.

THE COURT: Well, I'm not sure you're entitled to it.

MR. JACOBS: That's our burden to show you that we are, your Honor.

THE COURT: I have a different question I want to ask both of you to address. No one has addressed this and maybe it's because it's just completely off base.

It's going to take a minute to develop this, because we have three, three of -- at least three and maybe four of these packages are referred to as core.

The original -- when the language first came out, the book was all -- the book on the language, and it included the three. I think it was IO -- java.lang, java.io and java.something else.

MR. KWUN: Java.util.

THE COURT: Util, yes. And this had things that in other languages are just part of the language, like return the cosign. Return the tangent. Return the greater of two things.

Return the absolute number. Those are things that in other languages are just one of the normal parts of the language. And these were all lumped together as -- or print, print function. Now, at that time no sharp distinction was made. No distinction was really made between the packages and the rest of the language.

As time went on, the programming people who liked Java could see that it was a handy way to do pre-packaged programs that would do things a lot harder than return the cosign or the tangent, and this -- this group of 37, and now 166, packages grew up that had many, many, many functions. 37 of those were duplicated in some sense in the Android.

Now, one of the reasons I had broken out in that form of -- special verdict form that got rejected by both sides was that I thought it was plausible that a jury could say those first three -- util, IO, and lang -- it was fair use to use those three because the language wasn't any good without it. But because of the ownership issue, Oracle withdrew a one-by-one package analysis and went as a group, okay? So I said, Fine, we'll go with it the way you want to go with it.

But it concerns me that you would be asking for a home run on a question we put to the jury on where, to my mind, at least on those three there is a very strong argument for fair use, which in and of itself would deny a global win for Oracle on this point. And Oracle is the one that chose to put it to the jury in that way for reasons that have to do with all of that ownership stuff that we spent many afternoons debating.

I don't know how to -- you know, this is -- this is a complication that I need some guidance on from you, but it weighs on my mind. I see some of -- I see some of the strength of the arguments made by Oracle on these factors, but it would be to my mind wrong to allow those three packages to be -- I think the fair use argument there is very strong. Certainly, a jury could say that it was fair use to use those three and based on that alone would have been entitled to say, no -- I'm sorry, reject Oracle's view.

Now, that's the one on which, though, the burden of proof was on Google. So even if they could prove three, do they have to prove -- do they have to prove all 37? Do they just have to prove one?

We didn't get into that level of detail and it didn't occur to me until after the verdict that that was lurking there. And maybe you all saw that and just let it go, you didn't want to raise it. But that's where we are now.

So I'd like to get your views on the fair use issue as it applies to those three. Maybe there's something I don't see.

And here is another complication. You didn't make on the Google -- you did not make a JMOL on that issue. No Rule 50 by Google on these three packages. And maybe you played the hand that way for precisely the flip side reason that you were going for the home run yourself.

So I don't know where this -- you know, I have been thinking about this case, you know, in my own way. I have been trying to work my way through it. And I see those three as possibly very different than the rest of this case, and so I'd like to hear your views on that subject.

Mr. Jacobs.

MR. JACOBS: I think there are two questions lurking there. One is the fair use merits of those three packages, and the second is how the possibility that there might be a dividing line between those three and the rest analytically might effect the JMOL motion.

On the first, we have to be clear what we're talking about. We're talking about packages that were referred to in the language specification, but not fully specified, and certainly not fully specified in their current form.

So if the idea was Oracle/Sun made some declarative statement about the programming language being free for all, we tried to figure out what that declarative statement means and its practical impact on packages. And so we go back to 1996 and we look at what the programming language declaration might have said then.

Now, keep in mind the evidence on this is not very clear in terms of what was actually said and what was actually made available for use by all, but let's stay with the hypothetical anyway.

There's a declaration made in 1996. The programming language is free for all. There is a book that you can look at. And that which is -- so, therefore, one thinks that that which is specified in the book that goes beyond the formal definition of the programming language is available for all. That is fragments. That is fragments of what we're talking about today with the 37 packages.

So whatever the fair use merits -- and I think I would like to get to the second question first.

If somebody takes a copyrighted work and copies it and it turns out that during the course of the litigation some component of the copying is not justiciable or is not probative, maybe it's held to be uncopyrightable, that doesn't mean that the infringing -- that you divided up the judgment. Absent some proper motion by the defendant, that would result in -- would result in that.

So take the *Abden* case again. There were plot elements in *Rear Window* that were common place, scenes a faire, et cetera. You could show that all you want, but the replay of *Rear Window* in *Abden* is a copyright violation.

So I don't think the possibility, kind of unadjudicated and not fully litigated possibility of fair use analysis on these packages should interfere with JMOL, particularly as we settled on the definition of the work as a whole. Because the work as a whole here, I guess, on the giving side, if you will, on the copyright holder side is the 166 packages, and the accused packages are the 37 Android packages taken as a group.

I don't think they get off the hook if eency-weency bits of those packages would be held to be non-infringing under any theory.

Thank you.

THE COURT: Thank you.

Mr. Baber.

MR. BABER: Your Honor, just a few comments on the issue of the core packages, as opposed to the others.

Obviously, our -- we also have the issue of whether or not those are copyrightable, the whole issue that's out there. That clearly --

THE COURT: That's a separate point. If you were to win on that, then this will all be moot. But we're assuming right now that you lose on that.

MR. BABER: That's right.

The reason why we didn't urge a separate jury verdict question just on some or all of those packages is because Oracle had withdrawn the claim for findings of infringement as to those packages. And the way the verdict was set up, you had to first find infringement and only if you found the infringement as to something, whether it was the SSO, whether it was the documentation, only then would you reach a fair use issue.

So that -- I think in terms of the process and procedure and how we got there, that's why nothing got broken out package-by-package, whether it was their claim of infringement or our fair use defense.

But, in fact, your Honor, the record contains evidence. There's two parts to the evidence as to how these 37 packages relate to the language.

You had testimony from Dr. Bloch and Dr. Reinhold of Oracle, who both agreed that there are some 60 or 61 classes within the 37 packages that are necessary to use the language. Doctor --

THE COURT: Those are only in those three packages I mentioned?

MR. BABER: I believe they are scattered in those three packages that you mentioned, your Honor.

Dr. Bloch then gave a second level of analysis and he said, but in order to fully implement those 61, you need things from a bunch of other classes. And it wound up being on the order of 2,000 different methods and fields, et cetera.

THE COURT: Are those all still within those three packages?

MR. BABER: No. Those then expand to about 10 of the

37 packages, as I recall.

But then you had testimony at the very end --

THE COURT: Is that really in the record? What are the names of those 10?

MR. BABER: They are not in the record, your Honor, and we didn't do it one-by-one, just like they didn't do their packages one-by-one, because I think what wraps it all together is at the end of our case, Professor Astrachan was on the stand, and Professor Astrachan first said, yes, I agree with Dr. Bloch's analysis, both the first level and the second level, and I agree with Dr. Reinhold's analysis.

And Dr. Reinhold also did analysis, you may recall, of which classes were necessary, had to be known to the compiler. So he came up with a different number, I think 40 or so.

But then Professor Astrachan went a step further, and he said, Well, there are clearly these parts of these packages that are necessary to practice the language, but all 37 of the packages that are in Android are necessary as a practical matter.

THE COURT: That's a different point. That's different. I mean, it's one thing to say the tentacles of the -- what was it -- 61 classes reach out to another 100 classes and they are spread over 8 or 10 packages, and so you take those and you -- somehow you put that in group one.

But let's say it's 10. That still leaves 27 that are -- the tentacles don't even touch. So that -- that only -- you have to fall back on your -- the developers are expecting these to be there as a practical matter.

MR. BABER: That's correct, your Honor. That's why I distinguished --

THE COURT: That's a different kettle of fish.

MR. BABER: Correct. And, again, a lot of that, frankly, that was in the record, your Honor, was for you on your issues of copyrightability. And --

THE COURT: So, all right. All right.

MR. BABER: And then I would also observe, just to the point that Mr. Jacobs just made, which is, well, if there's parts that are maybe scenes a fair, et cetera, that goes back to the whole methodology for determining infringement, which is anything that's not copyrightable, whether it's because it's a Section 102(b) method of operation, whether it's because it's a functional requirement for compatibility, whether because it's a scenes a faire, those are supposed to be removed from consideration before the analysis for copyright infringement.

You go through the process of what the Ninth Circuit calls analytic dissection or what the Second Circuit calls, you know, abstraction filtration comparison.

At the end of the day, all you're supposed to compare are the parts that are copyrightable. And given your Honor's instruction to the jury, you should assume, you should take it for granted, that this is copyrightable. Getting down to this level of granularity as to whether one class or another class in java.io was necessary for the language, frankly, would have been an impossible task for the jury given the assumption that these are copyrightable for purposes of their analysis.

THE COURT: All right. We need to move on.

And now we'll go to a -- we'll go to your motions, so we'll take one from each side. So we've done one from the Oracle side, and we'll do one on the JMOL side for Google.

And the one that I think is the one that I would like to hear the most about is your one that -- and only one part of it, and that is that your view that declarations are not copyrightable. I guess as a matter of law you're saying that.

So I would like -- and I would like as you make this argument, for you to be very precise on what you mean by "declaration."

All right. Go ahead.

MR. BABER: Yes, your Honor.

What we mean by the declarations in our JMOL motion is what's been referred to at trial as the method signatures for the methods and the fully qualified names, Dr. Bloch talked about.

THE COURT: All right. Would you -- do we still have that chart?

And you show me what you mean because the books that you put in evidence use the word "declaration," I think, differently.

Can you bring it a little closer? That's good right there. Thank you.

(Demonstrative displayed)

MR. BABER: On your last point, your Honor, I believe that's correct and I believe Professor Astrachan mentioned that in his testimony; that in the language book when it uses the phrase "declaration," it would include all the implementing code as well.

THE COURT: Correct.

MR. BABER: Okay. But the way all the witnesses testified at trial, I believe -- and it's on Dr. Bloch's chart -- this is what everyone has referred to as the declaration (indicating).

THE COURT: Certainly, he did. And maybe all of them did, but I can't tell you whether all of them did.

But you mean the part that's in green.

MR. BABER: Well, it's inside the black box.

THE COURT: Is that black or green?

MR. BABER: It's black.

THE COURT: Black, okay.

MR. BABER: The fully qualified name for this is what's in the green boxes. Java.lang.Math.max, that's the fully qualified name, but this is the declaration of the methods.

THE COURT: Just so it's clear for the record, it says "public static" -- I will do it exactly.

Public space static space int space max. No space. Paren. Space -- no, no. Would there be a space there?

MR. BABER: No, it would be inside the paren.

THE COURT: So int space arg1 comma space int space arg2 close paren, end of declaration.

MR. BABER: Correct.

THE COURT: All right. And what is your argument there?

MR. BABER: The reason we put this in our JMOL motion, your Honor, is you already ruled on summary judgment that the package names, java.lang, the class names, java.lang.Math, and method name java.lang.Math.max are unprotectable as words and short phrases under copyright law.

We believe the same is true of the declarations. They are short phrases and we believe they are not separately and individually copyrightable.

If you look -- it's just a question of clarification as to how far the ruling you already made on short names and phrases goes. We think the length of these method signatures or declarations are similar in length to the short bit --

THE COURT: Let me give you a different argument that works in your favor on that very point. And the reason I want to do this is because I'm thinking about it and I want to give Mr. Jacobs a chance to shoot it down.

I'm not saying this is what I'm going to rule. I'm just saying this is what I'm thinking.

Now, I want to take my cosign example -- well let's take this example. Let's take this example. This is just as good.

Java has an API. Within the API are 37-plus packages. One of those packages is java.lang. It has a class called Math. Within Math there is a method. Actually, several methods that get the maximum of two numbers. This one that we have on the board is -- uses integers, if I understand it right. So it's only for the case where you have whole numbers as opposed to fractions.

So here is -- that's background.

Now, that is a concept or function that -- there would be many ways to write the implementation. We saw four ways during the trial. You could probably come up with other ways to write it.

I think Oracle would concede that it cannot claim a copyright over the idea of a method that would take two numbers and return the bigger of the two numbers. Just like it could not possibly claim to have a copyright over any and all ways to take a number, an angle, and return the co-sign merely because it has a copyright on its way to do that.

So the public, the universe, is free to come up with its own method for comparing two numbers and returning the larger, so long as it does not use the specific code developed by Java.

Now, that line, though, is going to have to be the same, the declaration. If you want to have that function carried out, then under the rules that the programming language imposes on the user, you've got to use the word "public" if you want that function. There's the word "private." There's like a -- you know, there are several choices on each one of those words. There's "public," "private." And then on static there's several possibilities there. I think the word "void" is one, maybe. Integer you can have "double" instead of integer.

The word "max" is a name. I've already ruled that the word "max" is not protectable.

You can vary the arg1. You can put an "x" and "y." That part can vary, right?

MR. BABER: Your Honor, absolutely correct, Your Honor.

THE COURT: All right. So the proposition I put -- and this is really a question to Oracle -- isn't that one line controlled by the merger doctrine?

There's only one way -- if you want to have that function -- and everyone has the god-given right to have that function. Oracle does not have a monopoly on it.

If you want to have that function, that is the only way to write it. Therefore, merger would protect the right of the public to use that form of declaration.

Now, I want to pause here and say, that would only help Google insofar as at the method level. That does not -- that would not be an answer to, Why did it happen to be that your methods got put into the same classes?

You could have had exactly that same method and put it under the IO. You could have had it under the IO. You could have had it under any of those other classes or packages. But you mimicked exactly the same -- but just take the declaration level for a method. I put to you all the proposition that the merger doctrine would protect that.

So why don't you have a seat and let me hear what Mr. Jacobs has to say, because I think this is something I did not understand going into the trial, but I will say this is the way I'm leaning.

You can kind of tell from the way I'm talking I've thought about it, and this is the way I'm leaning on that one line. For every single method, this is going to be the same analysis.

Go ahead.

MR. JACOBS: Well, our case is not about any single method or any group of methods.

And the wisdom in the Court's instruction was to link the protectability of names or, in this case, method declarations, as we're now using the terminology, to the structure, sequence, and organization of the software.

And this is the key distinction. In any copyright case, you could get very granular and you could say, well, that's an unprotectable idea. That's an unprotectable idea.

But, of course, the plaintiff isn't suing for copying this idea or that idea. In any copyright case of any gravity, the plaintiff is suing for some combination of elements, any one of which could be characterized at the idea level. But because of the way they are combined, they represent original expression.

In a music case, no note is protectable. And probably no diad of notes. But you get to five notes, six notes, seven notes, all the sudden you have protectable expression.

So is this case about the max method? Max is a trivial method, so it's probably an unfair example --

THE COURT: But this principle is throughout because every class has many methods. And every package has many classes.

So the method thing is going to be there, I'm guessing, several hundred times in the overall problem we have before us.

And you know those cases do say that what I'm supposed to do is -- is wade through this, in excruciating pain, to find the part that is protectable and the part that's not protectable. And then with the part that is protectable, to then that's the part you ask about fair use on.

So, you know, now that I've heard all this evidence, that's what I'm trying to do, is to -- so I did say something close to what you just said, which is, okay, even if this is right, does that then explain away the -- does the merger doctrine explain away why it happens to be that all of those methods are lockstep found in the Google version of the math class, for example? And it does not. It does not.

Now, maybe something else would. For all of you this may have been already obvious. But for me it didn't start to dawn on me until I tried to understand what this -- all these words mean.

And I think I understand the declaration level. All right. So maybe you're agreeing with me up to the point of the -- sounds like you're agreeing with me up to the level of the method declaration.

MR. JACOBS: Well, I'm not -- I think I'm agreeing that -- what I'm not trying to do is argue over max.

We had in our brief some examples of method declarations that were several lines long and are not as trivial as max. So my proposition to you is that max was a useful teaching device in part because it was so simple we could get it all on one page, including what Google characterizes as the implementing code below.

But if you examine other method declarations --

THE COURT: No, I've been looking at some of these. I agree with you. They could be many, many, many lines long.

But isn't this still true? Every single word in a declaration serves a functional purpose.

MR. JACOBS: Every single line of code in a -- probably not. But it doesn't matter. Every single line of code, of executable code in a computer program, serves a functional purpose.

THE COURT: Yes. I didn't say it quite right.

You don't have the right, the ownership, of every single way to do every single method.

Anybody has the right to mimic -- let's say you came up with a great way -- I'll use this example. This is not so trivial. Let's say you wanted to have a method that would take the month and the day, and maybe even the time, and figure out what the declination of the earth was to the sun.

So you wrote a method that would have to be more than one line long. It might be, I don't know, 20 lines long. And let's say that you chose all those publics and the statistics and whichever way you wanted to do it.

You wouldn't have the right to say: Okay, we've now discovered how we can do this. We now own this under copyright law. No one else can come along and do the exact same specification.

I don't think you have the right to say that.

MR. JACOBS: But it's really -- with respect, Your Honor, it's a false hypothetical for our case.

THE COURT: Well, it helps me to -- why is that?

MR. JACOBS: Because what we have here is a case of the comprehensive taking of the entire structure, sequence and organization.

THE COURT: I can see that's a different issue.

MR. JACOBS: And what we see in the copyright cases -- I mean, look, this is copyright, and it's being applied to computer software so we're struggling with it.

But, nonetheless, copyright law is pretty clear on this point. If you get over-granular and say, you know, this name in the phone directory, you can't be the only one to have a phone directory over that name. That name is not protectable. But, you know, creating a business directory of phone listings is protectable.

This is blurring into an originality issue as opposed to a copyright --

THE COURT: I'm not saying originality. No, no, no.

I'm saying if you want -- it's the merger doctrine.

If you want to have a way to specify, this is what we're going to put in, this is what we're going to put out, and you want it to be public or private, or whatever, that is a function. And you say -- and you -- once you decide how you want it to unfold, then there is a precise way to use the declaration to say it. And the fact is, there's only one way --

MR. JACOBS: No.

THE COURT: -- it can possibly be said.

MR. JACOBS: And that's factually wrong. And it's testable.

THE COURT: I don't believe that. Okay. Explain why I'm wrong.

MR. JACOBS: It's testable. Let me start with it's testable.

THE COURT: Okay. Tell me why I'm wrong.

MR. JACOBS: Because Google could have looked at Application Programming Interfaces and method declarations. They could have said, look, there is no claim that we copied the SSO of the non-37 packages. But, look, lo and behold, when we were doing the same method purpose as was being done in Java, in our own independently-created, you know, 38th, 39th API, lo and behold, we came up with the same method declaration.

And there's no claim of copying there. Proof: Two programmers doing the same task would come up with the same thing.

They never introduced any evidence like that.

THE COURT: They don't have to. I'm willing to assume they copied that part. And I'm saying to you that the law would protect them, that you don't have the right to monopolize that method.

MR. JACOBS: We don't have a right to monopolize a collection -- we don't have a right to monopolize the ability to carry out this function by monopolizing the words associated with that function. I think --

THE COURT: But those words in that box can only be said that one way.

MR. JACOBS: We already saw that the variables could be different.

THE COURT: And, in fact, they are different, aren't they, in our case? They didn't copy those; did they?

MR. JACOBS: No, no. We have lots of evidence of direct copying of variables that could be different. I think hundreds and hundreds of them.

MR. KUWAYTI: Two-thirds --

MR. JACOBS: Two-thirds of them, Your Honor. They were counted. And they are in the record.

But, again, this is trivial. The relevant question is that if you gave a programmer an assignment, carry out this purpose, would there be only one way to write a declaration to do that? Or very few ways, such that they really all look similar?

That's the merger doctrine. That's experimentally provable, and Google --

THE COURT: That's true. I'm saying there's only one way to do it.

MR. JACOBS: And this --

THE COURT: That's why they have the right to have -- they have the right to have their own implementation. And merely because it is -- the declaration has to be written in one way to get there, that doesn't block this like -- you're saying you've got a monopoly over all ways to do it.

MR. JACOBS: Again, all I'm saying is that's an empirical or a fact-driven question as to declarations in question, and that you'd have to have proof on the topic, not just surmise based on examination. And we have only this example (indicating) --

THE COURT: No.

MR. JACOBS: And Google never argued that this was representative.

THE COURT: I've looked at those rules and those books you gave me, and put in -- the word "public" has very precise meaning. The word "static" has a very precise meaning. The word "int" has a very precise meaning. All of it.

And the word max: is a name. And that's not protectable. They can borrow that name all they want.

MR. JACOBS: So, then, look at the declaration at the bottom of page 12 of our brief: Public abstract void verified public key key string sig provider throw certificate exception no such algorithm exception invalid key exception no such provider exception signature exception.

That's a method declaration. There are probably a lot of ways to write that method declaration. If it were true that for even the majority of the method declarations in Java there were only one way to do it, Google could have proven that.

THE COURT: I think it's in the rules. I think it's in the rules of the language that if you want to have an overall method that does what that declaration specifies, that is the exact and only way to do it, with the exception of you could have said X and Y instead of arg1 and 2.

MR. JACOBS: So in the hypothetical that I gave, in the hypothetical, the real one -- this is in java.security.cert.certificate -- "public" is defined by the language. I think. I'll check. "Abstract" is defined by the --

THE COURT: That's another word that comes in the language. I've seen that in reading. Abstract is one of the keywords.

MR. JACOBS: And I believe "void" is also a language construct, and maybe even verified. But --

THE COURT: It means that no -- there's no return. "Void" means there is no return.

MR. JACOBS: But then the rest of that method declaration, public key key string sig provider throw certificate, et cetera, is subject of many different ways to write it.

We heard a lot from Mr. Bloch about the creativity in selecting and choosing and writing and authoring the right names of these Application Program Interface constructs.

THE COURT: I've already said names -- you know, the Federal Circuit may reverse me on this, but, in my judgment, names are not protectable.

MR. JACOBS: And we --

THE COURT: No matter how long they are, they are not protectable. They can use those names all they want.

MR. JACOBS: And we are not challenging, in this argument, that conclusion. We are agreeing with your -- with your instruction that while individual names are not protectable on a standalone basis, names must necessarily be used as part of the structure, sequence and organization, and are to that extent protected by copyright. This is not a case of --

THE COURT: Well, that's what I told the jury, and that -- that's correct. That's what I told the jury.

But this whole thing of giving it to the jury was on the assumption -- what I was trying to do was to avoid having to retry the case, so we could just have one trial.

But that -- I'm not even sure that what I told the jury was actually correct as a matter of law on -- that as part of the SSO they are somehow not protected.

MR. JACOBS: So let me just recapitulate what we think the strongest argument to you on this point is.

Our case is not about the taking of any individual or even any small set of method declarations.

Our case is about the comprehensive taking of -- to use the language of the instruction -- the structure, sequence and organization of the computer programs as defined by the Application Programming Interface specifications.

That structure, sequence and organization includes method declarations at the appropriate level. It is like the sub sub subchapter in the outline structure.

The code down here (indicating), if you're a Microsoft Word person, this is body text. And this is in the outline.

And what we are seeking to protect is our very complex outline. It would not be a relevant question, if you were protecting a particular taxonomy, whether any particular element of the taxonomy -- whether plants from Bulgaria is protectable, the relevant question would be: Did the defendant take the entire outline structure of a book on plants from around the world, in which plants from Bulgaria was one tiny fragment of what was taken?

No one would bother to ask the question whether plants from Bulgaria was taken because that's not our claim.

THE COURT: All right. Let me ask Mr. Baber, to respond.

Let's assume that the Court is right on what I said a moment ago. That still does not answer most of what Mr. Jacobs just said, in a way.

In other words, even if the method has to be written in the way it's put there, that method could have shown up under the input/output. It doesn't have to be even in the package or the class.

You could have put it anywhere you wanted, and still had the same functionality. And the problem would have been that the developer community would not have -- would not have liked that. They would have said, Why did you put max in the wrong place? That's what they might have said.

So the fact -- that's just a business thing. That's not required by the language itself. There is more than one way to organize the SSO in the broader -- in the package and class level.

So even if it's true that this declaration is -- that's the only way to write the declaration, so merger protects it, that doesn't answer the whole SSO problem.

MR. BABER: One step at a time, Your Honor.

THE COURT: Mr. Jacobs didn't even like me taking that step. But I'm thinking about that step.

But having thought about that step, I see it as just like one step on a five- to six-step process. And you still have a long way to go.

MR. BABER: Well, Your Honor, take it one step at a time. First step is, I think you're absolutely correct on that issue that the form of a method declaration is the epitome of the merger doctrine.

THE COURT: You didn't have to use arg1 and 2.

MR. BABER: No.

THE COURT: Is it true that two-thirds of the time you copied even that?

MR. BABER: I don't recall candidly, Your Honor, who testified about that or what they said. But there are some common variables that are generally used, X and Y --

THE COURT: X and Y, A and B, I and J. You know, X1, X2. But there's more than one way to write it.

MR. BABER: But just to get more granular, if what you want to have is a public method, something developers can access, that they can call on and invoke it, it's a static method that returns an integer --

THE COURT: Remind me what "static" means.

MR. BABER: I'm going to defer --

THE COURT: Mr. Baber, you're shocking me.

(Laughter)

MR. BABER: I'm sorry, Your Honor. I'm still learning this stuff as I go. One of our folks will have to explain exactly what "static" means, as opposed to "void" or the other words that can go in this space.

But if you want to have a public method that is static, that returns an integer, and it takes as its input two integers, this is the only way you can write that declaration consistent with the language specification.

THE COURT: I think I agree with that. I think I agree with that. And the only parts that you would have any flexibility on are the name and what to call two variables. I think, otherwise, it's dictated by the rules of the program.

MR. BABER: And I think that same --

THE COURT: Rules of the language.

MR. BABER: I agree, Your Honor.

And I think that's true no matter how simple or complicated the method is. The example Mr. Jacobs gave, again, if you want to have a public method that returns --

THE COURT: All right. All right. So how do you address the more fundamental point? Okay. Let's say you win on step one. How do you get all the way to the package level?

Because you do have exactly the same lineup and outline and taxonomy as the -- so how do you explain that part?

MR. BABER: Your Honor, that is driven a hundred percent by the language requirement for fully qualified names.

You've already ruled we have the right to use the names at each level. Package name. Class name. Method name.

And you asked a question this morning --

THE COURT: Let's assume that's right. You could have put this -- you could have put max not under the Math class. You could have put it under a different class.

MR. BABER: You could have. But then you get -- you move from merger to a different copyrightability issue, which is functional requirements for compatibility. Which is, someone who's used to these API methods, who's used to calling max all the time, they know it's java.lang.math.max. And in order for their code that they've written in the past to work, in order for them to continue to use the API methods they've memorized for compatibility reasons -- Professor Astrachan talked about this both on the part of developers as well as on the part of the part of industry --

THE COURT: Is this a fair use argument or copyrightability issue?

MR. BABER: This is a copyrightability issue, Your Honor.

THE COURT: Where does it say that in the law, that protectability turns on this compatibility idea?

MR. BABER: *Sega vs. Accolade*. The Ninth Circuit said that, quote, functional requirements for compatibility are not protected under Section 102(b). It's an idea method system point.

THE COURT: That's -- okay. That is the -- you know, that is the big, big issue in the case, is 102(b). So you fall back on the atomic bomb, the nuclear --

MR. BABER: No, I've got some other bombs, too.

THE COURT: 102(b) is a nuclear option. That's the big issue.

Maybe you're right about that, but I'm searching for, is there a way to get there without getting to 102(b).

MR. BABER: Yes, you can get there on merger as to the class level as well.

THE COURT: No, not at the class level. Because you could have put that -- in more than one class, you could have put that max method in.

MR. BABER: We could have, Your Honor. But we believe under your prior rulings we have the right to use the fully qualified, name java.lang.math.max, which puts it in that class.

THE COURT: If that's what I ruled -- I don't think I did. I thought I held off on that.

But if that were true, yes, you're right, because of the rules of the -- you would have had the right to -- that's the only -- that's right. I don't think I said that. I think I -- I thought I said for multi-word names we were going to hold off.

MR. BABER: Just a second, Your Honor.

THE COURT: Well --

MR. BABER: Sorry. I don't have it in this. I had it in the brief --

THE COURT: My memory could be wrong, but I thought I said for the longer names I wasn't sure. I wouldn't say you were wrong on that. I just said I wanted to have the trial first.

MR. BABER: In your summary judgment order, Your Honor, you say you find that the names of the various items appearing in the disputed API package specifications are not protected by copyright.

I was just trying to see --

THE COURT: I'll go back and read it and see. But the implication of your argument to say that then java.lang.math.max is protected, that that -- that destroys the SSO argument right there.

MR. BABER: I found it, Your Honor.

THE COURT: All right.

MR. BABER: Summary judgment order, page 7. You talk about the API package specifications. You say, quote: Words and short phrases such as names, titles, and slogans, unquote, are, quote, not subject to copyright, unquote.

You cite regulation 202.1. You cite the *Planesi* Ninth Circuit opinion.

"Google argues that, quote, the names of the
Java Language API files, packages, classes,
and methods are not protectable as a matter
of law." Closed quote. Cite to our brief.

"This order agrees."

Because names and others -- sorry. Lost the page.

"Because names and other source phrases are
not subject to copyright. The names of the
various items appearing in the disputed API
package specifications are not protected."

THE COURT: Well, what was the part that I said -- there was more to it than that. There was something I said I was going to wait until the trial was over before I decided.

MR. BABER: Yes, your Honor. That's was where you said, Well, you know, Oracle also was arguing that, well, maybe the selection and arrangement of all these names taken together could have some copyright protection. And you said, you know, that's an issue for later, but for now each of the names, the class names, method names, the package names are not protected.

THE COURT: Did I say -- well, all right.

MR. JACOBS: May I read, your Honor?

THE COURT: Yes.

MR. JACOBS: The right of completeness here, I think, applies.

"In finding that the names of the various items appearing in the disputed API package specifications are not protected by copyright, this order does not foreclose the possibility that the selection or arrangement of those names is subject to copyright protection. See *Lamps Plus*."

The parenthetical on *Lamps Plus*:

"A combination of unprotectable elements -- italicizing unprotectable elements -- "is eligible for copyright protection only if those elements are numerous enough and their selection and arrangement original enough that the combination constitutes an original work of authorship."

So we are -- we were back in originality land in those days. I think we passed originality in this case by stipulation. And there is no question about whether the selection and arrangement of those names is an original work of authorship. And now we're into, okay, infringement and protectability under copyrightability doctrines.

THE COURT: Okay. We've got to bring it to a close here. It's now 3:20.

Is there anything on any of your other motions that -- going either way, that either side has got to have an oral argument on? If so, we will do it, but I -- some of this can be submitted on the papers.

MR. BABER: Just one, your Honor, that I'll mention very briefly, but I think we discussed it many times, so it doesn't need to be reargued.

On rangeCheck, where the jury found infringement based on rangeCheck and you instructed the jury that for purposes of that claim, the work as a whole was just the arrays.java file in which rangeCheck appeared.

We believe that the proper test for infringement always has to be the work as a whole as its registered. And if so, then the nine lines of rangeCheck code is, as a matter of law, diminimus.

THE COURT: Well, if you were right about that, yes, but I don't think you're right about -- your position is that the work is registered.

Now, that would be a -- I've read the cases. The cases specifically reject that proposition and say that I am supposed to identify what the work as a whole is, and it can vary from work to work. So there's policy reasons that might support your argument, but I don't think that's the law in the Ninth Circuit, so.

All right. Is there any other one that anyone wants to really argue?

MR. JACOBS: Your Honor, could I substitute just a brief follow-up on an earlier discussion in response to the -- in response?

THE COURT: Okay.

MR. JACOBS: There is one issue that I wanted to return to, just because I think the record wasn't accurately reported to you, and that's on the question -- back on the interesting question of fair use for some of the classes that were part of the language specification.

THE COURT: All right.

MR. JACOBS: So there is -- there's a bit of outlier testimony from Josh Bloch. He did the downstream packages or downstream classes that you just elicited from Mr. Baber, that that was in 10 packages. But every other witness said it was 60 or 61 classes, including Dr. Astrachan, who specifically and several times agreed during cross-examination with Dr. Mitchell's examination.

So we're talking again about fragments in terms of the overall issue here.

MR. VAN NEST: Your Honor, I wouldn't want to put too much reliance on that. Remember, we went to the jury on 37 packages as a whole. That's what we all agreed to do and that's how it went in.

And our evidence on fair use is certainly by no means limited to the point you raised. The point you raise is a good one, and it may mean that for some of those packages the fair use argument is even better; but it doesn't mean that there is no fair use argument for the rest of them.

Our whole point is that when you look at all of the factors taken together, we tried the case with the 37 packages as a whole and Oracle at the end of the day withdrew any request that they go package-by-package, and that's how they went to the jury.

So I think the fair use case needs to be evaluated on, you know, the merits of all the evidence on all the factors, which go far, far beyond just the fact that some number of these, whatever that number is, are absolutely required just to use the language.

So, again, your point is a good one. It's correct. But in terms of a JMOL, what we're looking at is the verdict that the jury rendered and the question the jury answered, or didn't, which affects all the packages taken as a whole. It's the SSO of the 37 API packages, not just a few.

And that's -- that's the main point that I want to make on that issue on JMOL.

MR. BABER: I have one tiny clarification and a question. I promise.

THE COURT: What is this a tag team?

(Laughter.)

MR. BABER: No, no.

First, just to clarify what I just said about the rangeCheck, that issue. We also believe that even accepting your Honor's decision that the file, the individual file is the appropriate work as a whole for rangeCheck, it's nine lines out of 3,000.

THE COURT: But it gets booted up 20,000 times a second.

MR. BABER: Understand, your Honor, but that's our second level on rangeCheck.

The second is I just don't know whether your Honor wanted -- you told us this morning you were curious about this issue of in the source code, how I read --

THE COURT: Yes.

MR. BABER: Okay. The answer to that is, your Honor, you have exhibits in evidence and testimony from Dr. Astrachan. The answer is, no. They are not in the same order.

And if I can hand up --

THE COURT: Is there -- what have you got there?

MR. BABER: Well, what we have in the record, your Honor, is we have several things.

First, we have from Java 5.0, we have Trial Exhibit 623.101 and what it is is a printout of all the source code in the Math class, java.lang.Math.

THE COURT: I think I've got that right here.

MR. BABER: And we also have Trial Exhibit 47.101, which is the same thing from Android, java.lang.Math.

THE COURT: This is just the Math one.

MR. BABER: It's just Math, your Honor, just one package.

THE COURT: How many differences are there going to be when I look at this?

MR. BABER: You're going to find a lot of differences.

THE COURT: How about in the sequence?

MR. BABER: Well, I have a chart here, your Honor, just to hand out. It's demonstrative. I will give one to Mr. Jacobs as well.

(Whereupon, document was tendered to the Court and counsel.)

MR. BABER: We just printed out the names as they appear in order in the classes. And you'll see they are they are very, very different. And we can use our favorite example "max" and I can show you how that plays out.

THE COURT: So this is the sequence in which they appear?

MR. BABER: Yes, sir. It's just -- it just takes in order what's in the larger exhibit, just in order.

THE COURT: Okay. I -- all right. Go ahead and make your point.

MR. BABER: Okay. So in Java, which is exhibit 623.101, Java.language.Math method appears on Page 15 of the exhibit beginning at Line 782. Where it says what we have there: Public static int max open paren int, et cetera. That's the declaration of the method. Then there's the documentation. Then there is the implementing code.

If we go to the Android file, 47.101, we find the max method declared on Page 11 beginning at Line 555 of the code. You'll see exactly the same thing: Public space static space, et cetera. They are just in different places within the file, although they, obviously, are the same, implementations of the same method.

THE COURT: Where you have the arguments, are these faithful to the way it appears in the code?

MR. BABER: Yes, your Honor. I think if you just line it up with -- you have the code right there with you. For example, if you look at Exhibit 623.101, you will see --

THE COURT: Where can I find double ABS in yours?

MR. BABER: I'm sorry. Where can you find what, your Honor?

THE COURT: Where can I find double ABS. You see the first one under Java is double ABS. So where is double ABS?

MR. BABER: In Java it's going to be --

THE COURT: I'm sorry. In Android.

MR. BABER: First one in Android is double ABS.

Double ABS is in the middle of the second page, about two-thirds of the way down in the Java version.

THE COURT: All right. So that -- that's an example where you have a "D" and they've got an "A."

MR. BABER: Exactly.

THE COURT: All right. What is -- this is just one, one class out of many.

How many classes there are all together? 600?

MR. BABER: 6,000 I believe -- no, I'm sorry.

THE COURT: Classes in the 37.

MR. BABER: It's thousands.

THE COURT: 6,000?

MR. BABER: I believe it is 6,000. Because that, I believe, was the testimony that in order to replicate the SSO, you would need --

MR. VAN NEST: It's 600 or 700 classes.

MR. BABER: 600 or 700 classes, 6,000 or 7,000 methods sounds about right.

THE COURT: All right. Well, you were the one that -- I don't want you to do bad math here.

MR. BABER: I've done that before, your Honor. I don't want to do it again.

THE COURT: It's less than one-tenth of one percent thing.

MR. BABER: And I think what this shows, your

Honor -- and your question this morning shows that the hierarchical structure that we see in documentation and things like that, that's simply so humans can find things. All the computer cares about, is it in the right file. Because then the computer knows if it's in the java.lang.Math file, it can be in any order whatsoever and it can find it.

THE COURT: Let me ask you a different question.

You use -- which one of these is the Java language?

MR. BABER: The Java Platform, your Honor?

THE COURT: The platform.

MR. BABER: 623.

THE COURT: All right. 623, all right.

Using the 623, give me an example of an interface as opposed to a method. I would like to see what one looks like in the flesh.

MR. BABER: I don't know that there are any in java.lang --

THE COURT: It's okay if there aren't any in here.

MR. VAN NEST: I have my file cabinet here, your Honor.

(Laughter.)

MR. VAN NEST: I know where that is in the file cabinet.

THE COURT: All right, in the file cabinet.

All right. How about a field then? You know, the classes have fields. They have got methods. And they have interfaces, and there is another one I'm leaving out. I know what a method is. I can recognize a method.

I would like to be able to recognize a field when it's called out in the -- can you show me one of those?

MR. BABER: Let me back up a minute because I can tell you how to recognize, I think, an interface when it's there if you're looking at code --

THE COURT: Don't do that.

MR. KWUN: Your Honor, right in the beginning of both of these, actually, they define "Pi" and they define "E."

Well, so if you look in 623.101 the first page is basically documentation of the class. And then you see the author information, and then on Line 81 you see public static final double e.

THE COURT: Right.

MR. KWUN: That's defining a field, which in this case is a constant, which is used for natural logarithms, of course, 2.718 and so on.

And then on Line 88 you see a definition of another constant, which is --

THE COURT: So those are regarded as fields?

MR. KWUN: Yes, your Honor.

THE COURT: It's a field of one, really. That's -- is that what that means?

MR. KWUN: It's a field that has the name "E," and --

THE COURT: The value --

MR. KWUN: I'm not sure which of these words, but either "static" or "final," I believe, means this cannot be changed. Once I declare it, you cannot change that field, which makes sense for a constant.

THE COURT: Okay, I've got it. Okay.

Now, "E" I know what that is. Natural logarithm. So if you wanted to have the field that had like an array that had, say, five numbers in it, could that work here, too? Would that be the place you would define it?

MR. KWUN: Frankly, your Honor, I don't know exactly how you would define the array, but you could do it there.

MR. HWANG: Yes, your Honor.

MR. KWUN: And, your Honor, you may remember from trial there was some testimony from Dr. Reinhold about fields and how you could have, for example, a field for a -- he would find something called -- I think for car. He said you could have a field of whether or not it was painted and what color it was. It might have been an example like that. You could have a field like that for an object, which is an object would be something you create out of a class.

THE COURT: All right. If you go further down, the very last line 104. It says: "Return StrictMath.sign." What is StrictMath?

MR. KWUN: StrictMath, your Honor, is another class. So this is saying we're returning --

THE COURT: Where would we find StrictMath?

MR. KWUN: StrictMath is defined, I believe, in another file. It's not defined in here. But StrictMath -- what this is saying is you're not actually returning StrictMath. You're returning the sign of a --

THE COURT: Right. I got that part. But I want to try to find StrictMath.

MR. KWUN: It's not in here.

THE COURT: It's somewhere else.

MR. KWUN: Yes, your Honor. So what this is saying --

THE COURT: So where would I find it?

MR. KWUN: You would need to look in a separate class, and since it doesn't have --

THE COURT: And that's called StrictMath?

MR. KWUN: Pardon me?

THE COURT: The class is called StrictMath?

MR. KWUN: Yes, your Honor. Generally when you see things that start with capital letters, the convention is that's a class.

THE COURT: And if it's lower -- what if it's lower case?

MR. KWUN: So the StrictMath period sign, what that's saying is that the sign method that is inside the StrictMath class is being used here.

THE COURT: If you look in the StrictMath, what language is that written in?

MR. KWUN: Well, we would have to look at it to see. It could have been written in native code, but as a general proposition there would be something that would be in Java. When you went there, it might say look somewhere else yet again, which could be in another language.

THE COURT: I think if you look at it, you'll find it's in native language.

MR. KWUN: Some of these are in native code and you'll see before the method the modifier "native."

THE COURT: All right. Now you've helped me understand what a field would be. That's the "E" and the "pi."

So find an example of an interface that's defined here that is not a method.

MR. KWUN: Your Honor, I don't think the Math class defines any interfaces. I can give your Honor an example of what an interface is.

THE COURT: All right. Give me a simple example.

MR. KWUN: So we had this discussion now many weeks ago, but you can have the interface of compare to. And the basic --

THE COURT: Say again? Compare what?

MR. KWUN: Compare to.

THE COURT: T-o?

MR. KWUN: Yes. And the basic idea is that you, in a variety of different classes, are going to have sometimes the desire to compare two members or two -- excuse me, two objects created out of that class.

So there's something called an interface that says if you are going to be a comparable class, a class where you can compare two objects, what that means is that you must have within your class a method called compare to. So the interface is called comparable. And when you declare in your class that you implement comparable, what that is is that is a promise that inside your class you will have a method called compare to.

THE COURT: Why would you ever do that as opposed to just using a method?

MR. KWUN: Well, two things. When you have an interface, you still must have a method that implements that. And I -- I don't actually know what the reason is of why you have the interfaces. I just know what they are.

THE COURT: Is there another good -- I have reviewed the Math one.

Is there another good example like this, a side-by-side comparison that I could look at that -- in a different context that would -- I don't care what it is. Just one that's about this thick (indicating) that I could look at each version to get a better feel for what's being contested?

MR. JACOBS: Well, we'd like you to look at Java.nio, your Honor, and we can make sure that you have that, those exhibits.

THE COURT: You have it right here? I will take it right now.

MR. JACOBS: No. But that would be --

THE COURT: You have it?

MR. BABER: No. I have a different one for you though.

THE COURT: What is that?

MR. BABER: I've got arrays.java, which is the class from which -- I'll just show you --

THE COURT: You gave me this one. You gave me Math. I want Mr. Jacobs to give me one he wants me to read.

MR. JACOBS: We will get it to you right away, your Honor.

THE COURT: Is it about this thick?

MR. JACOBS: I think it's might be thicker.

THE COURT: Don't give me a big thick one.

MR. JACOBS: I know. But I think we're being -- the simplicity of max and Math is distorting the analysis.

THE COURT: All right. You give my the one you want, but thicker it is, the less I can read.

MR. JACOBS: Understood, your Honor.

THE COURT: Let me just say this. I'm going to deny the motion for JMOL on fair use. And I'm not suggesting how I would come out on it if I were deciding this as the trier of fact, but I think there was enough on the way the jury was instructed that it could come out the way it did.

And I think if we have to have another trial on it, probably the way to do it is to figure out which pieces are protectable, which pieces are not, and then have an analysis on fair use that is limited to the parts that are protected.

So I hate to even contemplate the idea of another trial, but if we get there, that's the way it will have to be.

But I don't think it would be right to grant a Rule 50 on fair use in favor of Oracle.

On the one about declarations are not copyrightable, I don't have to rule on that now. I think that's part of a harder project on the whole SSO project that I am working very hard on, but I don't have an answer for you.

On rangeCheck and whether it's diminimus, I'm not going to set the jury's verdict aside. They said it was infringing and I think the records can be construed to support that.

There is a couple more of these that I'm prepared to rule on. The jury said that the documentation -- there was not infringement on the documentation. I think the record supports that verdict, so no Rule 50 there.

I want to think about the eight decompiled files. No ruling on that yet.

Equitable defenses, no ruling on that yet.

Improper registration and no ownership, I'm going to think about that as well, but I'll just say -- no ruling on that yet.

I think that's -- that's all the items that were on your motions.

MR. VAN NEST: Thank you, your Honor.

THE COURT: We are -- we're getting pretty close -- do we have that -- do we have the jury instructions ready to give to counsel?

LAW CLERK: Yes, we have a draft, yes.

THE COURT: Right now?

LAW CLERK: It doesn't have the read-back part in it.

THE COURT: Oh, oh. I want you two to think about the read-back part.

Do you want me to give an instruction on the jury can ask for read-backs? Generally judges don't like read-backs, but the Ninth Circuit has a recently new pronouncement that -- I, of course, salute when the Ninth Circuit speaks. I don't ask questions. I just do what they say.

But here is what they say, is that the ordinary rule is that you get a -- if the jury asks for a read-back, you read back every word of what the witness says. So if you had a witness on the stand for two days and they wanted to hear about part of it, you do the entire two days.

Now, does that make sense? Of course -- I won't say that. I would say, does that make sense? You can -- a good argument is, no. It would be too long and then it would defeat the purpose and that the judge ought to have more discretion to isolate the part that really is responsive to what the jury wants. And we always have to remember, a lot of these get handed down in the context of a criminal case and there are special considerations there.

But the way it's always worked for many years, as far as I can tell, is that the lawyers are pretty good about agreeing on what should be read back; but the problem is if you don't agree, then we get into the problem of having to read back the entire thing.

I want you to think about whether we suggest -- not suggest, but we say to the jury that if they would like a read-back, they can have it, but it may take some time and so forth.

I need your -- I'd like to have your guidance on that. So think, be thinking. I have been thinking about it and if you can agree on language, then, of course, I would put that in.

But except for that, I think we have a set of jury instructions ready to give you. And probably on Friday we should have the charging conference so that you can -- you can be ready to argue this on Monday.

MR. VAN NEST: We will give it some thought, your Honor. Absolutely. Thank you.

THE COURT: So how much longer do we have with the witness on the stand?

MR. JACOBS: About 20 minutes, your Honor.

THE COURT: All right. And then your cross. Then will that other missing witness be here tomorrow so that we can --

MR. VAN NEST: He will be. Mr. Bornstein is available tomorrow. I think unless we need to do it, I would just as soon finish up with Dr. Mitchell, but I need to confer with counsel on that. And then put Bornstein on and then our case.

THE COURT: What does your case look like?

MR. VAN NEST: Looks good.

(Laughter.)

THE COURT: How long is it going to be? How many witnesses?

MR. VAN NEST: Well, we have probably got six or seven witnesses and, but I still think what you told the jurors and then I did, too, about finishing the evidence this week is right. Assuming that we get through Dr. Mitchell and Mr.

Bornstein tomorrow, I think we'll get a significant part of our case in as well.

We have Mr. McFadden we'll be calling, a couple of Oracle folks. We have Dr. August on the '104 and Dr. Parr on the '520. And, you know, nobody is long.

THE COURT: I don't know, that sounds like we might not finish this week.

MR. VAN NEST: No, I think we will. I'm going to make every effort to do that. I would love to be able to get the evidence in this week and then do the charging conference and argue it on Monday. That is a good plan. And I think we'll try to trim our case down to accommodate it, too.

THE COURT: All right. There we go. So you're going to give me the IO, is that it, Mr. Jacobs? The IO version of these?

MR. JACOBS: Nio or something that's manageable, your Honor.

THE COURT: Great. I look forward to it. Okay.

MR. VAN NEST: Thank you, your Honor.

THE COURT: See you.

(Whereupon at 3:44 p.m. further proceedings
in the above-entitled cause was adjourned
until Thursday, May 10, 2012 at 7:30 a.m.)

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ORDER ON MOTIONS FOR JUDGMENT AS A MATTER OF LAW

DATED MAY 10, 2012

United States District Court
For the Northern District of California

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

ORACLE AMERICA, INC., Plaintiff, v. GOOGLE INC., Defendant. _______________________/	No. C 10-03561 WHA **ORDER ON MOTIONS FOR JUDGMENT AS A MATTER OF LAW**

For the reasons stated at the May 9 hearing, Oracle's motion for judgment as a matter of law regarding fair use, API documentation, and comment-copied files is **DENIED**; Google's motion for judgment as a matter of law regarding rangeCheck is **DENIED**.

IT IS SO ORDERED.

Dated: May 10, 2012.

WILLIAM ALSUP
UNITED STATES DISTRICT JUDGE

ORDER RE COPYRIGHTABILITY OF CERTAIN REPLICATED ELEMENTS OF THE JAVA APPLICATION PROGRAMMING INTERFACE

DATED MAY 31, 2012

United States District Court
For the Northern District of California

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

ORACLE AMERICA, INC.,
Plaintiff,
v.
GOOGLE INC.,
Defendant.
/

No. C 10-03561 WHA

ORDER RE COPYRIGHTABILITY OF CERTAIN REPLICATED ELEMENTS OF THE JAVA APPLICATION PROGRAMMING INTERFACE

INTRODUCTION

This action was the first of the so-called "smartphone war" cases tried to a jury. This order includes the findings of fact and conclusions of law on a central question tried simultaneously to the judge, namely the extent to which, if at all, certain replicated elements of the structure, sequence and organization of the Java application programming interface are protected by copyright.

PROCEDURAL HISTORY

In 2007, Google Inc., announced its Android software platform for mobile devices. In 2010, Oracle Corporation acquired Sun Microsystems, Inc., and thus acquired Sun's interest in the popular programming language known as Java, a language used in Android. Sun was renamed Oracle America, Inc. Shortly thereafter, Oracle America (hereinafter simply "Oracle") sued defendant Google and accused its Android platform as infringing Oracle's Java-related copyrights and patents.

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Both Java and Android are complex platforms. Both include "virtual machines," development and testing kits, and application programming interfaces, also known as APIs. Oracle's copyright claim involves 37 packages in the Java API. Copyrightability of the elements replicated is the only issue addressed by this order.

Due to complexity, the Court decided that the jury (and the judge) would best understand the issues if the trial was conducted in phases. The first phase covered copyrightability and copyright infringement as well as equitable defenses. The second phase covered patent infringement. The third phase would have dealt with damages but was obviated by stipulation and verdicts.

For the first phase, it was agreed that the judge would decide issues of copyrightability and Google's equitable defenses and that the jury would decide infringement, fair use, and whether any copying was de minimis. Significantly, all agreed that Google had not literally copied the software but had instead come up with its own implementations of the 37 API packages. Oracle's central claim, rather, was that Google had replicated the structure, sequence and organization of the overall code for the 37 API packages.

For their task of determining infringement and fair use, the jury was told it should take for granted that the structure, sequence and organization of the 37 API packages as a whole *was* copyrightable. This, however, was not a final definitive legal ruling. One reason for this instruction was so that if the judge ultimately ruled, after hearing the phase one evidence, that the structure, sequence and organization in question was not protectable but was later reversed in this regard, the court of appeals might simply reinstate the jury verdict. In this way, the court of appeals would have a wider range of alternatives without having to worry about an expensive retrial. Counsel were so informed but not the jury.

Each side was given seventeen hours of "air time" for phase one evidence (not counting openings, closings or motion practice). In phase one, as stated, the parties presented evidence on copyrightability, infringement, fair use, and the equitable defenses. As to the compilable code for the 37 Java API packages, the jury found that Google infringed but deadlocked on the follow-on question of whether the use was protected by fair use. As to the documentation for the 37 Java API packages, the jury found no infringement. As to certain small snippets of code, the jury found only one was infringing, namely, the nine lines of code called "rangeCheck." In phase two, the jury found no patent infringement across the board. (Those patents, it should be noted, had nothing to do with the subject addressed by this order.) The entire jury portion of the trial lasted six weeks.[1]

This order addresses and resolves the core premise of the main copyright claims, namely, whether the elements replicated by Google from the Java system were protectable by copyright in the first place. No law is directly on point. This order relies on general principles of copyright law announced by Congress, the Supreme Court and the Ninth Circuit.

* * *

Counsel on both sides have supplied excellent briefing and the Court wishes to recognize their extraordinary effort and to thank counsel, including those behind the scenes burning midnight oil in law libraries, for their assistance.

SUMMARY OF RULING

So long as the specific code used to implement a method is different, anyone is free under the Copyright Act to write his or her own code to carry out exactly the same function or specification of any methods used in the Java API. It does not matter that the declaration or method header lines are identical. Under the rules of Java, they *must be identical* to declare a method specifying the *same* functionality — even when the implementation is different. When there is only one way to express an idea or function, then everyone is free to do so and no one can monopolize that expression. And, while the Android method and class names could have been different from the names of their counterparts in Java and still have worked, copyright protection never extends to names or short phrases as a matter of law.

It is true that the very same functionality could have been offered in Android without duplicating the exact command structure used in Java. This could have been done

[1] After the jury verdict, the Court granted Oracle's Rule 50 motion for judgment as a matter of law of infringement of eight decompiled computer files, which were literally copied. Google admitted to copying eight computer files by decompiling the bytecode from eight Java files into source code and then copying the source code. These files were not proven to have ever been part of Android.

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by re-arranging the various methods under different groupings among the various classes and packages (even if the same names had been used). In this sense, there were many ways to group the methods yet still duplicate the same range of functionality.

But the names are more than just names — they are symbols in a command structure wherein the commands take the form

java.package.Class.method()

Each command calls into action a pre-assigned function. The overall name tree, of course, has creative elements but it is also a precise command structure — a utilitarian and functional set of symbols, each to carry out a pre-assigned function. This command structure is a system or method of operation under Section 102(b) of the Copyright Act and, therefore, cannot be copyrighted. Duplication of the command structure is necessary for interoperability.

STATEMENT OF FINDINGS

1. JAVA AND ANDROID.

Java was developed by Sun, first released in 1996, and has become one of the world's most popular programming languages and platforms.[2] The Java platform, through the use of a virtual machine, enables software developers to write programs that are able to run on different types of computer hardware without having to rewrite them for each different type. Programs that run on the Java platform are written in the Java language. Java was developed to run on desktop computers and enterprise servers.[3]

The Java language, like C and C++, is a human-readable language. Code written in a human-readable language — "source code" — is not readable by computer hardware.

[2] For purposes of this order, the term "Java" means the Java platform, sometimes abbreviated to "J2SE," which includes the Java development kit (JDK), javac compiler, tools and utilities, runtime programs, class libraries (API packages), and the Java virtual machine.

[3] Rather than merely vet each and every finding and conclusion proposed by the parties, this order has navigated its own course through the evidence and arguments, although many of the proposals have found their way into this order. Any proposal that has been expressly agreed to by the opposing side, however, shall be deemed adopted (to the extent agreed upon) even if not expressly adopted herein. It is unnecessary for this order to cite the record for all of the findings herein. In the findings, the phrase "this order finds . . ." is occasionally used to emphasize a point. The absence of this phrase, however, does not mean (and should not be construed to mean) that a statement is not a finding. All declarative fact statements set forth in the order are factual findings.

Only "object code," which is not human-readable, can be used by computers. Most object code is in a binary language, meaning it consists entirely of 0s and 1s. Thus, a computer program has to be converted, that is, compiled, from source code into object code before it can run, or "execute." In the Java system, source code is first converted into "bytecode," an intermediate form, before it is then converted into binary machine code by the Java virtual machine.

The Java language itself is composed of keywords and other symbols and a set of pre-written programs to carry out various commands, such as printing something on the screen or retrieving the cosine of an angle. The set of pre-written programs is called the application programming interface or simply API (also known as class libraries).

In 2008, the Java API had 166 "packages," broken into more than six hundred "classes," all broken into over six thousand "methods." This is very close to saying the Java API had 166 "folders" (packages), all including over six hundred pre-written programs (classes) to carry out a total of over six thousand subroutines (methods). Google replicated the exact names and exact functions of virtually all of these 37 packages but, as stated, took care to use different code to implement the six thousand-plus subroutines (methods) and six-hundred-plus classes.

An API is like a library. Each package is like a bookshelf in the library. Each class is like a book on the shelf. Each method is like a how-to-do-it chapter in a book. Go to the right shelf, select the right book, and open it to the chapter that covers the work you need. As to the 37 packages, the Java and Android libraries are organized in the same basic way but all of the chapters in Android have been written with implementations different from Java but solving the same problems and providing the same functions. Every method and class is specified to carry out precise desired functions and, thus, the "declaration" (or "header") line of code stating the specifications must be identical to carry out the given function.[4]

The accused product is Android, a software platform developed by Google for mobile devices. In August 2005, Google acquired Android, Inc., as part of a plan to develop a smartphone platform. Google decided to use the Java language for the Android platform.

[4] The term "declaration" was used throughout trial to describe the headers (non-implementing code) for methods and classes. While "header" is the more technically accurate term, this order will remain consistent with the trial record and use "declaration" and "header" interchangeably.

In late 2005, Google began discussing with Sun the possibility of taking a license to use and to adapt the entire Java platform for mobile devices. They also discussed a possible co-development partnership deal with Sun under which Java technology would become an open-source part of the Android platform, adapted for mobile devices. Google and Sun negotiated over several months, but they were unable to reach a deal.

In light of its inability to reach agreement with Sun, Google decided to use the Java language to design its own virtual machine via its own software and to write its own implementations for the functions in the Java API that were key to mobile devices. Specifically, Google wrote or acquired its own source code to implement virtually all the functions of the 37 API packages in question. Significantly, all agree that these implementations — which account for 97 percent of the lines of code in the 37 API packages — are different from the Java implementations. In its final form, the Android platform also had its own virtual machine (the so-called Dalvik virtual machine), built with software code different from the code for the Java virtual machine.

As to the 37 packages at issue, Google believed Java application programmers would want to find the same 37 sets of functionalities in the new Android system callable by the same names as used in Java. Code already written in the Java language would, to this extent, run on Android and thus achieve a degree of interoperability.

The Android platform was released in 2007. The first Android phones went on sale the following year. Android-based mobile devices rapidly grew in popularity and now comprise a large share of the United States market. The Android platform is provided free of charge to smartphone manufacturers. Google receives revenue through advertisement whenever a consumer uses particular functions on an Android smartphone. For its part, Sun and Oracle never successfully developed its own smartphone platform using Java technology.

All agree that Google was and remains free to use the Java language itself. All agree that Google's virtual machine is free of any copyright issues. All agree that the six-thousand-plus method implementations by Google are free of copyright issues. The copyright issue, rather, is whether Google was and remains free to replicate the names,

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organization of those names, and functionality of 37 out of 166 packages in the Java API, which has sometimes been referred to in this litigation as the "structure, sequence and organization" of the 37 packages.

The Android platform has its own API. It has 168 packages, 37 of which are in contention. Comparing the 37 Java and Android packages side by side, only three percent of the lines of code are the same. The identical lines are those lines that specify the names, parameters and functionality of the methods and classes, lines called "declarations" or "headers." In particular, the Android platform replicated the same package, method and class names, definitions and parameters of the 37 Java API packages from the Java 2SE 5.0 platform. This three percent is the heart of our main copyright issue.

A side-by-side comparison of the 37 packages in the J2SE 5.0 version of Java versus in the Froyo version of Android shows that the former has a total of 677 classes (plus interfaces) and 6508 methods wherein the latter has 616 and 6088, respectively. Twenty-one of the packages have the same number of classes, interfaces and methods, although, as stated, the method implementations differ.

The three percent of source code at issue includes "declarations." Significantly, the rules of Java dictate the precise form of certain necessary lines of code called declarations, whose precise and necessary form explains why Android and Java *must be* identical when it comes to those particular lines of code. That is, since there is only one way to declare a given method functionality, everyone using that function must write that specific line of code in the same way. The same is true for the "calls," the commands that invoke the methods. To see why this is so, this order will now review some of the key rules for Java programming. This explanation will start at the bottom and work its way upward.

2. THE JAVA LANGUAGE AND ITS API — IMPORTANT DETAILS.

Java syntax includes *separators* (*e.g.*, {, }, ;), *operators* (*e.g.*, +, -, *, /, <, >), *literal values* (*e.g.*, 123, 'x', "Foo"), and *keywords* (*e.g.*, if, else, while, return). These elements carry precise predefined meanings. Java syntax also includes *identifiers* (*e.g.*, String,

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java.lang.Object), which are used to name specific values, fields, methods, and classes as described below.

These syntax elements are used to form statements, each statement being a single command executed by the Java compiler to take some action. Statements are run in the sequence written. Statements are commands that tell the computer to do work.

A method is like a subroutine. Once declared, it can be invoked or "called on" elsewhere in the program. When a method is called on elsewhere in the program or in an application, "arguments" are usually passed to the method as inputs. The output from the method is known as the "return." An example is a method that receives two numbers as inputs and returns the greater of the two as an output. Another example is a method that receives an angle expressed in degrees and returns the cosine of that angle. Methods can be much more complicated. A method, for example, could receive the month and day and return the Earth's declination to the sun for that month and day.

A method consists of the method header and the method body. A method header contains the name of the method; the number, order, type and name of the parameters used by the method; the type of value returned by the method; the checked exceptions that the method can throw; and various method modifiers that provide additional information about the method. At the trial, witnesses frequently referred to the method header as the "declaration." This discrepancy has no impact on the ultimate analysis. The main point is that this header line of code introduces the method body and specifies very precisely its inputs, name and other functionality. Anyone who wishes to supply a method with the same functionality must write this line of code in the same way and must do so no matter how different the implementation may be from someone else's implementation.

The method body is a block of code that then implements the method. If a method is declared to have a return type, then the method body must have a statement and the statement must include the expression to be returned when that line of code is reached. During trial, many witnesses referred to the method body as the "implementation." It is the method body that does the heavy lifting, namely the actual work of taking the inputs, crunching them, and returning an

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answer. The method body can be short or long. Google came up with its own implementations for the method bodies and this accounts for 97 percent of the code for the 37 packages.

Once the method is written, tested and in place, it can be called on to do its work. A method call is a line of code *somewhere else*, such as in a different program that calls on (or invokes) the method and specifies the arguments to be passed to the method for crunching. The method would be called on using the command format “java.package.Class.method()” where () indicates the inputs passed to the method. For example, a = java.package.Class.method() would set the field “a” to equal the return of the method called. (The words “java.package.Class.method” would in a real program be other names like “java.lang.Math.max”; “java.package.Class.method” is used here simply to explain the format.)

After a method, the next higher level of syntax is the class. A class usually includes fields that hold values (such as pi = 3.141592) and methods that operate on those values. Classes are a fundamental structural element in the Java language. A Java program is written as one or more classes. More than one method can be in a class and more than one class can be in a package. All code in a Java program must be placed in a class. A class declaration (or header) is a line that includes the name of the class and other information that define the class. The body of the class includes fields and methods, and other parameters.

Classes can have subclasses that “inherit” the functionality of the class itself. When a new subclass is defined, the declaration line uses the word “extends” to alert the compiler that the fields and methods of the parent class are inherited automatically into the new subclass so that only additional fields or methods for the subclass need to be declared.

The Java language does not allow a class to extend (be a subclass of) more than one parent class. This restrictiveness may be problematic when one class needs to inherit fields and methods from two different non-related classes. The Java programming language alleviates this dilemma through the use of “interfaces,” which refers to something different from the word “interface” in the API acronym. An interface is similar to a class. It can also contain methods. It is also in its own source code file. It can also be inherited by classes. The distinction is that a

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class may inherit from more than one interface whereas, as mentioned, a class can only inherit from one other class.

For convenience, classes and interfaces are grouped into “packages” in the same way we all group files into folders on our computers. There is no inheritance function within packages; inheritance occurs only at the class and interface level.

Here is a simple example of source code that illustrates methods, classes and packages. The italicized comments on the right are merely explanatory and are not compiled:

```
package java.lang;                               // Declares package java.lang
public class Math {                              // Declares class Math
        public static int max (int x, int y) {   // Declares method max
                if (x > y) return x ;            // Implementation, returns x or
                else return y ;                  // Implementation, returns y
        }                                        // Closes method
}                                                // Closes class
```

To invoke this method from another program (or class), the following call could be included in the program:

```
int a = java.lang.Math.max (2, 3);
```

Upon reaching this statement, the computer would go and find the max method under the Math class in the java.lang package, input “2” and “3” as arguments, and then return a “3,” which would then be set as the value of “a.”

The above example illustrates a point critical to our first main copyright issue, namely that the declaration line beginning “public static” is entirely dictated by the rules of the language. In order to declare a particular *functionality*, the language *demands* that the method declaration take a particular form. There is no choice in how to express it. To be specific, that line reads:

```
public static int max (int x, int y) {
```

The word "public" means that other programs can call on it. (If this instead says "private," then it can only be accessed by other methods inside the same class.) The word "static" means that the method can be invoked without creating an instance of the class. (If this instead is an instance method, then it would always be invoked with respect to an object.) The word "int" means that an integer is returned by the method. (Other alternatives are "boolean," "char," and "String" which respectively mean "true/false," "single character," and "character string.") Each of these three parameters is drawn from a short menu of possibilities, each possibility corresponding to a very specific functionality. The word "max" is a name and while any name (other than a reserved word) could have been used, names themselves cannot be copyrighted, as will be shown. The phrase "(int x, int y)" identifies the arguments that must be passed into the method, stating that they will be in integer form. The "x" and the "y" could be "a" and "b" or "arg1" and "arg2," so there is a degree of creativity in naming the arguments. Again, names cannot be copyrighted. (Android did not copy all of the particular argument names used in Java but did so as to some arguments.) Finally, "{" is the beginning marker that tells the compiler that the method body is about to follow. The marker is mandatory. The foregoing description concerns the rules for the language itself. Again, each parameter choice other than the names has a precise functional choice. If someone wants to implement a particular function, the declaration specification can only be written in one way.

Part of the declaration of a method can list any exceptions. When a program violates the semantic constraints of the Java language, the Java virtual machine will signal this error to the program as an exception for special handling. These are specified via "throw" statements appended at the end of a declaration. Android and Java are not identical in their throw designations but they are very similar as to the 37 packages at issue.

A Java program must have at least one class. A typical program would have more than one method in a class. Packages are convenient folders to organize the classes.

This brings us to the application programming interface. When Java was first introduced in 1996, the API included eight packages of pre-written programs. At least three of these packages were "core" packages, according to Sun, fundamental to being able to use the Java

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language at all. These packages were java.lang, java.io, and java.util. As a practical matter, anyone free to use the language itself (as Oracle concedes all are), must also use the three core packages in order to make any worthwhile use of the language. Contrary to Oracle, there is no bright line between the language and the API.

Each package was broken into classes and those in turn broken into methods. For example, java.lang (a package) included Math (a class) which in turn included max (a method) to return the greater of two inputs, which was (and remains) callable as java.lang.Math.max with appropriate arguments (inputs) in the precise form required (see the example above).

After Java's introduction in 1996, Sun and the Java Community Process, a mechanism for developing a standard specifications for Java classes and methods, wrote hundreds more programs to carry out various nifty functions and they were organized into coherent packages by Sun to become the Java application programming interface. In 2008, as stated, the Java API had grown from the original eight to 166 packages with over six hundred classes with over six thousand methods. All of it was downloadable from Sun's (now Oracle's) website and usable by anyone, including Java application developers, upon agreement to certain license restrictions. Java was particularly useful for writing programs for use via the Internet and desktop computers.

Although the declarations must be the same to achieve the same functionality, the names of the methods and the way in which the methods are grouped do not have to be the same. Put differently, many different API organizations could supply the same overall range of functionality. They would not, however, be interoperable. Specifically, code written for one API would not run on an API organized differently, for the name structure itself dictates the precise form of command to call up any given method.

To write a fresh program, a programmer names a new class and adds fields and methods. These methods can call upon the pre-written functions in the API. Instead of re-inventing the wheels in the API from scratch, programmers can call on the tried-and-true pre-packaged programs in the API. These are ready-made to perform a vast menu of functions. This is the whole point of the API. For example, a student in high school can write a program that can call upon java.lang.Math.max to return the greater of two numbers, or to find the cosine of an angle, as one step in a larger homework assignment. Users and developers can supplement the API with their own specialized methods and classes.

The foregoing completes the facts necessary to decide the copyrightability issue but since Oracle has made much of two small items copied by Google, this order will now make findings thereon so that there will be proper context for the court of appeals.

3. RANGECHECK AND THE DE-COMPILED TEST FILES.

Oracle has made much of nine lines of code that crept into both Android and Java. This circumstance is so innocuous and overblown by Oracle that the actual facts, as found herein by the judge, will be set forth below for the benefit of the court of appeals.

Dr. Joshua Bloch worked at Sun from August 1996 through July 2004, eventually holding the title of distinguished engineer. While working at Sun, Dr. Bloch wrote a nine-line code for a function called "rangeCheck," which was put into a larger file, "Arrays.java," which was part of the class library for the 37 API packages at issue. The function of rangeCheck was to check the range of a list of values before sorting the list. This was a very simple function.

In 2004, Dr. Bloch left Sun to work at Google, where he came to be the "chief Java architect" and "Java guru." Around 2007, Dr. Bloch wrote the files, "Timsort.java" and "ComparableTimsort," both of which included the same rangeCheck function he wrote while at Sun. He wrote the Timsort files in his own spare time and not as part of any Google project. He planned to contribute Timsort and ComparableTimsort back to the Java community by submitting his code to an open implementation of the Java platform, OpenJDK, which was controlled by Sun. Dr. Bloch did, in fact, contribute his Timsort file to OpenJDK and Sun included Timsort as part of its Java J2SE 5.0 release.

In 2009, Dr. Bloch worked on Google's Android project for approximately one year. While working on the Android team, Dr. Bloch also contributed Timsort and ComparableTimsort to the Android platform. Thus, the nine-line rangeCheck function was copied into Google's Android. This was how the infringement happened to occur.

When discovered, the rangeCheck lines were taken out of the then-current version of Android over a year ago. The rangeCheck block of code appeared in a class containing 3,179 lines of code. This was an innocent and inconsequential instance of copying in the context of a massive number of lines of code.

Since the remainder of this order addresses only the issue concerning structure, sequence and organization, and since rangeCheck has nothing to do with that issue, rangeCheck will not be mentioned again, but the reader will please remember that it has been readily conceded that these nine lines of code found their way into an early version of Android.

Google also copied eight computer files by decompiling the bytecode from eight Java files back into source code and then using the source code. These files were merely used as test files and never found their way into Android or any handset. These eight files have been treated at trial as a single unit.

Line by line, Oracle tested all fifteen million lines of code in Android (and all files used to test along the way leading up to the final Android) and these minor items were the only items copied, save and except for the declarations and calls which, as stated, can only be written in one way to achieve the specified functionality.

ANALYSIS AND CONCLUSIONS OF LAW

1. NAMES AND SHORT PHRASES.

To start with a clear-cut rule, names, titles and short phrases are not copyrightable, according to the United States Copyright Office, whose rule thereon states as follows:

> Copyright law does not protect names, titles, or short phrases or expressions. Even if a name, title, or short phrase is novel or distinctive or lends itself to a play on words, it cannot be protected by copyright. The Copyright Office cannot register claims to exclusive rights in brief combinations of words such as:
>
> - Names of products or services.
> - Names of business organizations, or groups (including the names of performing groups).
> - Pseudonyms of individuals (including pen or stage names).
> - Titles of works.

- Catchwords, catchphrases, mottoes, slogans, or short advertising expressions.
- Listings of ingredients, as in recipes, labels, or formulas. When a recipe or formula is accompanied by an explanation or directions, the text directions may be copyrightable, but the recipe or formula itself remains uncopyrightable.

U.S. Copyright Office, Circular 34; *see* 37 C.F.R. 202.1(a).

This rule is followed in the Ninth Circuit. *Sega Enters., Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1524 n.7 (9th Cir. 1992). This has relevance to Oracle's claim of copyright ownership over names of methods, classes and packages.

2. The Development of Law on the Copyrightability Of Computer Programs and Their Structure, Sequence and Organization.

Turning now to the more difficult question, this trial showcases a distinction between copyright protection and patent protection. It is an important distinction, for copyright exclusivity lasts 95 years whereas patent exclusivity lasts twenty years. And, the Patent and Trademark Office examines applications for anticipation and obviousness before allowance whereas the Copyright Office does not. This distinction looms large where, as here, the vast majority of the code was *not* copied and the copyright owner must resort to alleging that the accused stole the "structure, sequence and organization" of the work. This phrase — structure, sequence and organization — does not appear in the Act or its legislative history. It is a phrase that crept into use to describe a residual property right where literal copying was absent. A question then arises whether the copyright holder is more appropriately asserting an exclusive right to a functional system, process, or method of operation that belongs in the realm of patents, not copyrights.

A. *Baker v. Seldon.*

The general question predates computers. In the Supreme Court's decision in *Baker v. Seldon*, 101 U.S. 99 (1879), the work at issue was a book on a new system of double-entry bookkeeping. It included blank forms, consisting of ruled lines, and headings, illustrating the system. The accused infringer copied the method of bookkeeping but used different forms. The Supreme Court framed the issue as follows:

> The evidence of the complainant is principally directed to the object of showing that Baker uses the same system as that which is explained and illustrated in Selden's books. It becomes important, therefore, to determine whether, in obtaining the copyright of his books, he secured the exclusive right to the use of the system or method of book-keeping which the said books are intended to illustrate and explain.

Id. at 101. *Baker* held that using the same accounting system would not constitute copyright infringement. The Supreme Court explained that only patent law can give an exclusive right to a method:

> To give to the author of the book an exclusive property in the art described therein, when no examination of its novelty has ever been officially made, would be a surprise and a fraud upon the public. That is the province of letters-patent, not of copyright. The claim to an invention or discovery of an art or manufacture must be subjected to the examination of the Patent Office before an exclusive right therein can be obtained; and it can only be secured by a patent from the government.

Id. at 102. The Supreme Court went on to explain that protecting the method under copyright law would frustrate the very purpose of publication:

> The copyright of a work on mathematical science cannot give to the author an exclusive right to the methods of operation which he propounds, or to the diagrams which he employs to explain them, so as to prevent an engineer from using them whenever occasion requires. The very object of publishing a book on science or the useful arts is to communicate to the world the useful knowledge which it contains. But this object would be frustrated if the knowledge could not be used without incurring the guilt of piracy of the book.

Id. at 103. *Baker* also established the "merger" doctrine for systems and methods intermingled with the texts or diagrams illustrating them:

> And where the art it teaches cannot be used without employing the methods and diagrams used to illustrate the book, or such as are similar to them, such methods and diagrams are to be considered as necessary incidents to the art, and given therewith to the public; not given for the purpose of publication in other works explanatory of the art, but for the purpose of practical application.

Ibid. It is true that *Baker* is aged but it is not passé. To the contrary, even in our modern era, *Baker* continues to be followed in the appellate courts, as will be seen below.

B. The Computer Age and Section 102(b) of the 1976 Act.

Almost a century later, Congress revamped the Copyright Act in 1976. By then, software for computers was just emerging as a copyright issue. Congress decided in the 1976 Act that computer programs would be copyrightable as "literary works." *See* H.R. REP. NO. 94-1476, at 54 (1976). There was, however, no express definition of a computer program until an amendment in 1980.

The 1976 Act also codified a *Baker*-like limitation on the scope of copyright protection in Section 102(b). *See Apple Computer, Inc. v. Microsoft Corp.*, 35 F.3d 1435, 1443 n.11 (9th Cir. 1994). Section 102(b) stated (and still states):

> In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.

The House Report that accompanied Section 102(b) of the Copyright Act explained:

> Copyright does not preclude others from using the ideas or information revealed by the author's work. It pertains to the literary, musical, graphic, or artistic form in which the author expressed intellectual concepts. Section 102(b) makes clear that copyright protection does not extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.
>
> *Some concern has been expressed lest copyright in computer programs should extend protection to the methodology or processes adopted by the programmer, rather than merely to the 'writing' expressing his ideas. Section 102(b) is intended, among other things, to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of the copyright law.*
>
> Section 102(b) in no way enlarges or contracts the scope of copyright protection under the present law. Its purpose is to restate, in the context of the new single Federal system of copyright, that the basic dichotomy between expression and idea remains unchanged.

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H.R. REP. NO. 94-1476, at 56–57 (1976) (emphasis added).[5]

Recognizing that computer programs posed novel copyright issues, Congress established the National Commission on New Technological Uses of Copyrighted Works (referred to as CONTU) to recommend the extent of copyright protection for software. The Commission consisted of twelve members with Judge Stanley Fuld as chairman and Professor Melville Nimmer as vice-chairman.

The Commission recommended that a definition of "computer program" be added to the copyright statutes. This definition was adopted in 1980 and remains in the current statute:

> A "computer program" is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.

17 U.S.C. 101. Moreover, the CONTU report stated that Section 102(b)'s preclusion of copyright protection for "procedure, process, system, method of operation" was reconcilable with the new definition of "computer program." The Commission explained the dichotomy between copyrightability and non-copyrightability as follows:

> Copyright, therefore, protects the program so long as it remains fixed in a tangible medium of expression but does not protect the electromechanical functioning of a machine. The way copyright affects games and game-playing is closely analogous: one may not adopt and republish or redistribute copyrighted game rules, but the copyright owner has no power to prevent others from playing the game.
>
> *Thus, one is always free to make a machine perform any conceivable process (in the absence of a patent), but one is not free to take another's program.*

NAT'L COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT 20 (1979) (emphasis added). The Commission also recognized the "merger" doctrine, a rule of importance a few pages below in this order (emphasis added):

> The "idea-expression identity" exception provides that copyrighted language may be copied without infringing when there is but a limited number of ways to express a given idea. This rule is the logical extension of the fundamental principle that copyright cannot protect ideas. *In the computer context this means that when*

[5] The Court has reviewed the entire legislative history. The quoted material above is the only passage of relevance. This order includes a summary of the CONTU report but it came after-the-fact and had little impact on the Act other than to include a definition of "computer program."

> *specific instructions, even though previously copyrighted, are the only and essential means of accomplishing a given task, their later use by another will not amount to an infringement . . . .* [C]opyright protection for programs does not threaten to block the use of ideas or program language previously developed by others when that use is necessary to achieve a certain result. When other language is available, programmers are free to read copyrighted programs and use the ideas embodied in them in preparing their own works.

Ibid. The Commission realized that differentiating between the copyrightable form of a program and the uncopyrightable process was difficult, and expressly decided to leave the line drawing to federal courts:

> [T]he many ways in which programs are now used and the new applications which advancing technology will supply may make drawing the line of demarcation more and more difficult. To attempt to establish such a line in this report written in 1978 would be futile. . . . Should a line need to be drawn to exclude certain manifestations of programs from copyright, that line should be drawn on a case-by-case basis by the institution designed to make fine distinctions — the federal judiciary.

Id. at 22–23.

Congress prepared no legislative reports discussing the CONTU comments regarding Section 102(b). *See* H.R. REP. NO. 96-1307, at 23–24 (1980). Nevertheless, Congress followed CONTU's recommendations by adding the definition of computer programs to the statute and amending a section of the Act not relevant to this order. *See Apple Computer, Inc. v. Formula Intern. Inc.*, 725 F.2d 521, 522–25 (9th Cir. 1984).

Everyone agrees that no one can copy line-for-line someone else's copyrighted computer program. When the line-by-line listings are different, however, some copyright owners have nonetheless accused others of stealing the "structure, sequence and organization" of the copyrighted work. That is the claim here.

C. Decisions Outside the Ninth Circuit.

No court of appeals has addressed the copyrightability of APIs, much less their structure, sequence and organization. Nor has any district court. Nevertheless, a review of the case law regarding non-literal copying of software provides guidance. Circuit decisions outside the Ninth Circuit will be considered first.

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The Third Circuit led off in *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222 (3d Cir. 1986). In that case, the claimant owned a program, Dentalab, that handled the administrative and bookkeeping tasks of dental prosthetics businesses. The accused infringer developed another program, Dentcom, using a different programming language. The Dentcom program handled the same tasks as the Dentalab program and had the following similarities:

> The programs were similar in three significant respects . . . most of the file structures, and the screen outputs, of the programs were virtually identical . . . five particularly important "subroutines" within both programs — order entry, invoicing, accounts receivable, end of day procedure, and end of month procedure — performed almost identically in both programs.

Id. at 1228. On these facts, the district court had found, after a bench trial, that the accused infringer copied the claimant's software program. *Id.* at 1228–29.

On appeal, the accused infringer argued that the structure of the claimant's program was not protectable under copyright. In rejecting this argument, the court of appeals created the following framework to deal with non-literal copying of software:

> [T]he line between idea and expression may be drawn with reference to the end sought to be achieved by the work in question. In other words, *the purpose or function of a utilitarian work would be the work's idea, and everything that is not necessary to that purpose or function would be part of the expression of the idea*.

Id. at 1236 (emphasis in original). Applying this test, *Whelan* found that the structure of Dentalab was copyrightable because there were many different ways to structure a program that managed a dental laboratory:

> [T]he idea of the Dentalab program was the efficient management of a dental laboratory (which presumably has significantly different requirements from those of other businesses). Because that idea could be accomplished in a number of different ways with a number of different structures, the structure of the Dentalab program is part of the program's expression, not its idea.

Id. at 1236 n.28. The phrase "structure, sequence and organization" originated in a passage in *Whelan* explaining that the opinion used those words interchangeably and that, although not themselves part of the Act, they were intended to capture the thought that "sequence and order could be parts of the expression, not the idea, of a work." *Id*. at 1239, 1248.

To summarize, in affirming the district court's final judgment of infringement, *Whelan* held that the *structure* of the Dentalab program was copyrightable because there were many other ways to perform the same function of handling the administrative and bookkeeping tasks of dental prosthetics businesses with different structures and designs. *Id.* at 1238. Others were free to come up with their own version but could not appropriate the Dentalab structure. This decision plainly seems to have been the high-water mark of copyright protection for the structure, sequence and organization of computer programs. It was also the only appellate decision found by the undersigned judge that affirmed (or directed) a final judgment of copyrightability on a structure, sequence and organization theory.

Perhaps because it was the first appellate decision to wade into this problem, *Whelan* has since been criticized by subsequent treatises, articles, and courts, including our own court of appeals. *See Sega Enters., Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1524–25 (9th Cir. 1992). Instead, most circuits, including ours, have adopted some variation of an approach taken later by the Second Circuit. *See Apple Computer, Inc. v. Microsoft Corp.*, 35 F.3d 1435, 1445 (9th Cir. 1994).

In *Computer Associates International, Inc. v. Altai*, 982 F.2d 693 (2d Cir. 1992), the claimant owned a program designed to translate the language of another program into the particular language that the computer's operating system would be able to understand. The accused infringer developed its own program with substantially similar structure but different source code (using the same programming language). The Second Circuit criticized *Whelan* for taking too narrow a view of the "idea" of a program. The Second Circuit adopted instead an "abstract-filtration-comparison" test. The test first dissected the copyrighted program into its structural components:

> In ascertaining substantial similarity under [the abstract-filtration-comparison test], a court would first break down the allegedly infringed program into its constituent structural parts. Then, by examining each of these parts for such things as incorporated ideas, expression that is necessarily incidental to those ideas, and elements that are taken from the public domain, a court would then be able to sift out all non-protectable material.

Id. at 706.

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Then, the test filtered out structures that were not copyrightable. For this filtration step, the court of appeals relied on the premise that programmers fashioned structures "to maximize the program's speed, efficiency, as well as simplicity for user operation, while taking into consideration certain externalities such as the memory constraints of the computer upon which the program will be run." *Id.* at 698. Because these were "practical considerations," the court held that structures based on these considerations were not copyrightable expressions.

Thus, for the filtration step, the court of appeals outlined three types of structures that should be precluded from copyright protection. *First*, copyright protection did not extend to structures dictated by efficiency. A court must inquire

> whether the use of *this particular set* of modules [is] necessary efficiently to implement that part of the program's process being implemented. If the answer is yes, then the expression represented by the programmer's choice of a specific module or group of modules has merged with their underlying idea and is unprotected.

Id. at 708 (emphasis in original). Paradoxically, this meant that non-efficient structures might be copyrightable while efficient structures may not be. Nevertheless, the Second Circuit explained its reasoning as follows:

> In the context of computer program design, the concept of efficiency is akin to deriving the most concise logical proof or formulating the most succinct mathematical computation. Thus, the more efficient a set of modules are, the more closely they approximate the idea or process embodied in that particular aspect of the program's structure.
>
> While, hypothetically, there might be a myriad of ways in which a programmer may effectuate certain functions within a program — *i.e.*, express the idea embodied in a given subroutine — efficiency concerns may so narrow the practical range of choice as to make only one or two forms of expression workable options.

Ibid. Efficiency also encompassed user simplicity and ease of use. *Id.* at 708–09.

Second, copyright protection did not extend to structures dictated by external factors. The court explained this as follows:

> [I]n many instances it is virtually impossible to write a program to perform particular functions in a specific computing environment without employing standard techniques. This is a result of the fact that a programmer's freedom of design choice is often circumscribed by extrinsic considerations such as (1) the mechanical specifications of the computer on which a particular

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> program is intended to run; (2) compatibility requirements of other programs with which a program is designed to operate in conjunction; (3) computer manufacturers' design standards; (4) demands of the industry being serviced; and (5) widely accepted programming practices within the computer industry.

Id. at 709–10.

Third, copyright protection did not extend to structures already found in the public domain. The court reasoned that materials in the public domain, such as elements of a computer program that have been freely accessible, cannot be appropriated. *Ibid.* Ultimately, in the case before it, the Second Circuit held that after removing unprotectable elements using the criteria discussed above, only a few lists and macros in accused product were similar to the copied product, and their impact on the program was not large enough to declare copyright infringement. *Id.* at 714–15. The copyright claim, in short, failed.

The Tenth Circuit elaborated on the abstract-filtration-comparison test in *Gates Rubber Co. v. Bando Chemical Industries, Ltd.*, 9 F.3d 823 (10th Cir. 1993). There, the claimant developed a computer program that determined the proper rubber belt for a particular machine by performing complicated calculations involving numerous variables. The program used published formulas in conjunction with certain mathematical constants developed by the claimant to determine belt size. The Tenth Circuit offered the following description of a software program's structure:

> The program's architecture or structure is a description of how the program operates in terms of its various functions, which are performed by discrete modules, and how each of these modules interact with each other.

Id. at 835. As had the Second Circuit, the Tenth Circuit held that filtration should eliminate the unprotectable elements of processes, facts, public domain information, merger material, *scenes a faire* material, and other unprotectable elements suggested by the particular facts of the program under examination. For Section 102(b) processes, the court gave the following description:

> Returning then to our levels of abstraction framework, we note that processes can be found at any level, except perhaps the main purpose level of abstraction. Most commonly, processes will be found as part of the system architecture, as operations within modules, or as algorithms.

Id. at 837. The court described the *scenes a faire* doctrine for computer programs as follows:

> The *scenes a faire* doctrine also excludes from protection those elements of a program that have been dictated by external factors. In the area of computer programs these external factors may include: hardware standards and mechanical specifications, software standards and compatibility requirements, *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1525–27 (9th Cir. 1993), computer manufacturer design standards, target industry practices and demands, and computer industry programming practices.
>
> * * *
>
> We recognize that the *scenes a faire* doctrine may implicate the protectability of interfacing and that this topic is very sensitive and has the potential to effect [sic] widely the law of computer copyright. This appeal does not require us to determine the scope of the *scenes a faire* doctrine as it relates to interfacing and accordingly we refrain from discussing the issue.

Id. at 838 & n.14 (all citations omitted except *Sega*). Like the Second Circuit, the Tenth Circuit also listed many external considerations — such as compatibility, computer industry programming practices, and target industry practices and demands — that would exclude elements from copyright protection under the *scenes a faire* doctrine. Ultimately, the Tenth Circuit remanded because the district court had failed to make specific findings that fit this framework.

The First Circuit weighed in with its 1995 decision *Lotus Development Corp. v. Borland International, Inc.*, 49 F.3d 807 (1st Cir. 1995). In *Lotus*, the claimant owned the Lotus 1-2-3 spreadsheet program that enabled users to perform accounting functions electronically on a computer. Users manipulated and controlled the program via a series of menu commands, such as “Copy,” “Print,” and “Quit.” In all, Lotus 1-2-3 had 469 commands arranged into more than 50 menus and submenus. Lotus 1-2-3 also allowed users to write “macros,” whereby a user could designate a series of command choices (sequence of menus and submenus) with a single macro keystroke. Then, to execute that series of commands, the user only needed to type the single pre-programmed macro keystroke, causing the program to recall and perform the designated series of commands automatically. *Id.* at 809–10.

The accused infringer Borland developed a competing spreadsheet program. Borland included the Lotus menu command hierarchy in its program to make it compatible with Lotus 1-2-3 so that spreadsheet users who were already familiar with Lotus 1-2-3 would be able to switch to the Borland program without having to learn new commands or rewrite their Lotus macros. In so doing, Borland did not copy any of Lotus's underlying source or object code. (The opinion did not say whether the programs were written in the same language.)

The district court had ruled that the Lotus 1-2-3 menu command hierarchy was a copyrightable expression because there were many ways to construct a spreadsheet menu tree. Thus, the district court had concluded that the Lotus developers' choice and arrangement of command terms, reflected in the Lotus menu command hierarchy, constituted copyrightable expression. *Id.* at 810–11.

The First Circuit, however, held that the Lotus menu command hierarchy was not copyrightable because it was a method of operation under Section 102(b). The court explained:

> We think that "method of operation," as that term is used in § 102(b), refers to the means by which a person operates something, whether it be a car, a food processor, or a computer. Thus a text describing how to operate something would not extend copyright protection to the method of operation itself; other people would be free to employ that method and to describe it in their own words. Similarly, if a new method of operation is used rather than described, other people would still be free to employ or describe that method.

Id. at 815.

The court reasoned that because the menu command hierarchy was essential to make use of the program's functional capabilities, it should be properly categorized as a "method of operation" under Section 102(b). The court explained:

> The Lotus menu command hierarchy does not merely explain and present Lotus 1-2-3's functional capabilities to the user; it also serves as the method by which the program is operated and controlled . . . . In other words, to offer the same capabilities as Lotus 1-2-3, Borland did not have to copy Lotus's underlying code (and indeed it did not); to allow users to operate its programs in substantially the same way, however, Borland had to copy the Lotus menu command hierarchy. Thus the Lotus 1-2-3 code is not a uncopyrightable "method of operation."

Ibid. Thus, the court reasoned that although Lotus had made "expressive" choices of what to name the command terms and how to structure their hierarchy, it was nevertheless an uncopyrightable "method of operation." The *Lotus* decision was affirmed by an evenly divided Supreme Court (four to four).

The Federal Circuit had the opportunity to apply *Lotus* in an appeal originating from the District of Massachusetts in *Hutchins v. Zoll Medical Corp.*, 492 F.3d 1377 (Fed. Cir. 2007) (affirming summary judgment against copyright owner). In *Hutchins*, the claimant owned a program for performing CPR and argued that his copyright covered the "system of logic whereby CPR instructions are provided by computerized display, and [] the unique logic contained in [his] software program." *Id.* at 1384. The claimant argued that the accused program was similar because it "perform[ed] the same task in the same way, that is, by measuring heart activity and signaling the quantity and timing of CPR compressions to be performed by the rescuer." *Ibid.* The court of appeals rejected this argument, holding that copyright did not protect the "technologic method of treating victims by using CPR and instructing how to use CPR." *Ibid.* (citing *Lotus*).

D. Decisions in the Supreme Court and in our Circuit.

Our case is governed by the law in the Ninth Circuit and, of course, the Supreme Court. The Supreme Court missed the opportunity to address these issues in *Lotus* due to the four-to-four affirmance and has, thus, never reached the general question. Nonetheless, *Baker*, which is still good law, provides guidance and informs how we should read Section 102(b).

Another Supreme Court decision, *Feist Publications, Inc. v. Rural Telephone Services Co., Inc.*, 499 U.S. 340 (1991), which dealt primarily with the copyrightability of purely factual compilations, provided some general principles. In *Feist*, the Supreme Court considered the copyrightability of a telephone directory comprised of names, addresses, and phone numbers organized in alphabetical order. The Supreme Court rejected the notion that copyright law was meant to reward authors for the "sweat of the brow." This meant that we should not yield to the temptation to award copyright protection merely because a lot of sweat went into the work. The Supreme Court concluded that protection only extended to the original components of an author's work. *Id.* at 353. The Supreme Court concluded:

> This inevitably means that the copyright in a factual compilation is thin. Notwithstanding a valid copyright, a subsequent compiler

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> remains free to use the facts contained in another's publication to aid in preparing a competing work, so long as the competing work does not feature the same selection and arrangement.

Id. at 349.

Turning to our own Ninth Circuit, our court of appeals has recognized that non-literal components of a program, including the structure, sequence and organization and user interface, can be protectable under copyright depending on whether the structure, sequence and organization in question qualifies as an expression of an idea rather than an idea itself. *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1175 (9th Cir. 1989). This decision arrived between the Third Circuit's *Whelan* decision and the Second Circuit's *Computer Associates* decision. *Johnson Controls* is one of Oracle's mainstays herein.

In *Johnson Controls*, the claimant developed a system of computer programs to control wastewater treatment plants. The district court found that the structure, sequence and organization of the program was expression and granted a preliminary injunction even though the accused product did not have similar source or object code. *Id.* at 1174. Therefore, the standard of review on appeal was limited to abuse of discretion and clear error. Our court of appeals affirmed the preliminary injunction, stating that the claimant's program was very sophisticated and each individual application was customized to the needs of the purchaser, indicating there may have been room for individualized expression in the accomplishment of common functions. Since there was some discretion and opportunity for creativity in the structure, the structure of the program was expression rather than an idea. *Id.* at 1175. *Johnson Controls*, however, did not elaborate on which particular structures deserved copyright protection.

In *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465 (9th Cir. 1992), our court of appeals outlined a two-part test for determining similarity between computer programs: the extrinsic and intrinsic tests. This pertained to infringement, not copyrightability. The claimant, who owned a computer program for outlining, alleged that an accused infringer copied his program's non-literal features. *Id.* at 1472. The claimant alleged that seventeen specific features in the programs were similar. On summary judgment, the district court had found that each feature was either not protectable or not similar as a matter of law:

> The district court ruled that one group of features represented a claim of copyright in "concepts . . . fundamental to a host of computer programs" such as "the need to access existing files, edit the work, and print the work." As such, these features, which took the form of four options in the programs' opening menus, were held to be unprotectable under copyright.
>
> A second group of features involved "nine functions listed in the menu bar" and the fact that "virtually all of the functions of the PC-Outline program [ ] can be performed by Grandview." The district court declared that "these functions constitute the idea of the outlining program" and, furthermore, "[t]he expression of the ideas inherent in the features are . . . distinct." The court also held that "the similarity of using the main editing screen to enter and edit data . . . is essential to the very idea of a computer outlining program."
>
> The third group of features common to PC-Outline and Grandview concerned "the use of pull-down windows." Regarding these features, the district court made three separate rulings. The court first found that "[p]laintiffs may not claim copyright protection of an . . . expression that is, if not standard, then commonplace in the computer software industry" . . . . [and] that the pull-down windows of the two programs look different.

Id. at 1472–73. Our court of appeals affirmed the district court's order without elaborating on the copyrightability rulings quoted above.

In *Atari Games Corp. v. Nintendo of America Inc.*, 975 F.2d 832 (Fed. Cir. 1992), the Federal Circuit had occasion to interpret Ninth Circuit copyright precedent. In *Atari*, the claimant Nintendo sued Atari for copying the Nintendo 10NES program, which prevented the Nintendo game console from accepting unauthorized game cartridges. Atari deciphered the 10NES program through reverse engineering and developed its own program to unlock the Nintendo game console. Atari's new program generated signals indistinguishable from 10NES but was written in a different programming language. *Id.* at 835–36.

Applying our Ninth Circuit precedents, *Johnson Controls* and *Brown Bag*, the Federal Circuit affirmed the district court's preliminary injunction for copyright infringement.

The Federal Circuit held that the 10NES program contained copyrightable expression because it had organization and sequencing unnecessary to the unlocking function:

> Nintendo's 10NES program contains more than an idea or expression necessarily incident to an idea. Nintendo incorporated within the 10NES program creative organization and sequencing *unnecessary* to the lock and key function. Nintendo chose arbitrary programming instructions and arranged them in a unique sequence to create a purely arbitrary data stream. This data stream serves as the key to unlock the NES. Nintendo may protect this creative element of the 10NES under copyright.

Id. at 840 (emphasis added). The Federal Circuit stated that there were creative elements in the 10NES program

> beyond the literal expression used to effect the unlocking process. The district court defined the unprotectable 10NES idea or process as the generation of a data stream to unlock a console. This court discerns no clear error in the district court's conclusion. The unique arrangement of computer program expression which generates that data stream does not merge with the process so long as alternate expressions are available. In this case, Nintendo has produced expert testimony showing a multitude of different ways to generate a data stream which unlocks the NES console.

Ibid. (citation omitted). Thus, the Federal Circuit held that the district court did not err in concluding that the 10NES program contained protectable expression and affirmed the preliminary injunction.

Next came two decisions holding that Section 102(b) bars from copyright software interfaces necessary for interoperability. The Section 102(b) holdings arose in the context of larger holdings that it had been fair use to copy software to reverse-engineer it so as to isolate the unprotectable segments. These two decisions will now be described in detail.

In *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992), the accused infringer had to copy object code in order to understand the interface procedures between the Sega game console and a game cartridge, that is, how the software in the game console interacted with the software in the game cartridge to achieve compatibility. *Id.* at 1515–16. After learning and documenting these interactions (interface procedures), the accused infringer wrote its own source code to mimic those same interface procedures in its own game cartridges so that its cartridges could run on the Sega console. Our court of appeals held that the copying of object code for the purpose of achieving compatibility was fair use. Notably, in its fair-use analysis, our court of appeals *expressly held that the interface procedures for compatibility were functional aspects not copyrightable under Section 102(b)*: "Accolade copied Sega's software solely in order to discover the functional requirements for compatibility with the Genesis console — aspects of Sega's programs that are not protected by copyright. 17 U.S.C. § 102(b)." *Id.* at 1522. The court used the phrase "interface procedures," a term describing the interface between applications, multiple times to describe the functional aspect of the interaction between software programs and summarized its analysis of copyrightability as follows:

> In summary, the record clearly establishes that disassembly of the object code in Sega's video game cartridges was necessary in order to understand the functional requirements for Genesis compatibility. The *interface procedures* for the Genesis console are distributed for public use only in object code form, and are not visible to the user during operation of the video game program. Because object code cannot be read by humans, it must be disassembled, either by hand or by machine. Disassembly of object code necessarily entails copying. Those facts dictate our analysis of the second statutory fair use factor. If disassembly of copyrighted object code is per se an unfair use, the owner of the copyright gains a de facto monopoly over *the functional aspects of his work — aspects that were expressly denied copyright protection by Congress.* 17 U.S.C. § 102(b). In order to enjoy a lawful monopoly over the idea or functional principle underlying a work, the creator of the work must satisfy the more stringent standards imposed by the patent laws. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 159–64, 109 S.Ct. 971, 982–84, 103 L.Ed.2d 118 (1989). Sega does not hold a patent on the Genesis console.

Sega, 977 F.2d at 1526 (emphasis added). In *Sega*, the interface procedure that was required for compatibility was "20 bytes of initialization code plus the letters S–E–G–A." *Id.* at 1524 n.7. Our court of appeals found that this interface procedure was functional and therefore not copyrightable under Section 102(b). The accused infringer Accolade was free to copy this interface procedure for use in its own games to ensure compatibility with the Sega Genesis game console. Our court of appeals distinguished the *Atari* decision, where the Federal Circuit had found that the Nintendo's 10NES security system was infringed, because there was only one signal that unlocked the Sega console, unlike the "multitude of different ways to unlock" the Nintendo console:

> We therefore reject Sega's belated suggestion that Accolade's incorporation of the code which "unlocks" the Genesis III console is not a fair use. Our decision on this point is entirely consistent

> with *Atari v. Nintendo*, 975 F.2d 832 (Fed. Cir.1992). Although *Nintendo* extended copyright protection to Nintendo's 10NES security system, that system consisted of an original program which generates an arbitrary data stream "key" which unlocks the NES console. Creativity and originality went into the design of that program. *See id.* at 840. Moreover, the federal circuit concluded that there is a "multitude of different ways to generate a data stream which unlocks the NES console." *Atari*, 975 F.2d at 839. The circumstances are clearly different here. Sega's key appears to be functional. It consists merely of 20 bytes of initialization code plus the letters S–E–G–A. There is no showing that there is a multitude of different ways to unlock the Genesis III console.

Sega, 977 F.2d at 1524 n.7.

This order reads *Sega* footnote seven (quoted above) as drawing a line between copying functional aspects necessary for compatibility (not copyrightable) versus copying functional aspects unnecessary for compatibility (possibly copyrightable). Our court of appeals explained that in *Atari*, the Nintendo game console's 10NES program had had functionality *unnecessary* to the lock-and-key function. *See also Atari*, 975 F.2d at 840. Since the accused infringer Atari had copied the entire 10NES program, it also had copied aspects of the 10NES program unnecessary for compatibility between the console and game cartridges. This was inapposite to the facts of *Sega*, where the accused infringer Accolade's final product duplicated *only* the aspect of Sega's program *necessary* for compatibility between the console and game cartridges. Thus, the holding of our court of appeals was that the aspect of a program necessary for compatibility was unprotectable, specifically invoking Section 102(b), but copyrightable expression could still exist for aspects unnecessary for compatibility.

The *Sega* decision and its compatibility reasoning was followed in a subsequent reverse-engineering decision by our court of appeals, *Sony Computer Entertainment, Inc., v. Connectix Corporation*, 203 F.3d 596 (9th Cir. 2000). The facts were somewhat different in *Sony*. There, the accused infringer Connectix did not create its own games for Sony's Playstation game console; instead, the accused infringer created an emulated environment that duplicated the interface procedures of Sony's console so that games written for Sony's console could be played on a desktop computer running the emulator. In order to do this, the accused infringer copied object code for the Sony Playstation's operating software, its BIOS program, in order to discover signals sent between the BIOS and the rest of the game console. *Id.* at 600. After uncovering these signals (again, application interfaces), the accused infringer wrote its own source code to *duplicate these interfaces* in order to create its emulator for the desktop computer. Thus, games written for the Playstation console were playable on Connectix's emulator for the desktop computer. Citing Section 102(b) and *Sega*, our court of appeals stated that the Playstation BIOS contained "unprotected functional elements," and concluded that the accused infringer's intermediate step of copying object code was fair use because it was done for the "purpose of gaining access to the unprotected elements of Sony's software." *Id.* at 602–03.[6]

* * *

With apology for its length, the above summary of the development of the law reveals a trajectory in which enthusiasm for protection of "structure, sequence and organization" peaked in the 1980s, most notably in the Third Circuit's *Whelan* decision. That phrase has not been re-used by the Ninth Circuit since *Johnson Controls* in 1989, a decision affirming preliminary injunction. Since then, the trend of the copyright decisions has been more cautious. This trend has been driven by fidelity to Section 102(b) and recognition of the danger of conferring a monopoly by copyright over what Congress expressly warned should be conferred only by patent. This is not to say that infringement of the structure, sequence and organization is a dead letter. To the contrary, it is not a dead letter. It is to say that the *Whelan* approach has given way to the *Computer Associates* approach, including in our own circuit. *See Sega Enters., Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1525 (9th Cir. 1992); *Apple Computer, Inc. v. Microsoft Corp.*, 35 F.3d 1435, 1445 (9th Cir. 1994).

In this connection, since the CONTU report was issued in 1980, the number of software patents in force in the United States has dramatically increased from barely a thousand in 1980 to hundreds of thousands today. *See* Iain Cockburn, *Patents, Tickets and the Financing*

[6] *Sega* and *Sony* are not the only Ninth Circuit decisions placing a premium on functionality as indicating uncopyrightability. Other such decisions were surveyed in the summary earlier in this order. *See also Triad Sys. Corp. v. Southeastern Exp. Co.*, 64 F.3d 1330, 1336 (9th Cir. 1995); *Apple Computer, Inc. v. Microsoft Corp.*, 35 F.3d 1435, 1444 (9th Cir. 1994); *Apple Computer, Inc. v. Formula Intern., Inc.*, 725 F.2d 521, 525 (9th Cir. 1984).

of Early-Stage Firms: Evidence from the Software Industry, 18 JOURNAL OF ECONOMICS & MANAGEMENT STRATEGY 729–73 (2009). This has caused at least one noted commentator to observe:

> As software patents gain increasingly broad protection, whatever reasons there once were for broad copyright protection of computer programs disappear. Much of what has been considered the copyrightable "structure, sequence and organization" of a computer program will become a mere incident to the patentable idea of the program or of one of its potentially patentable subroutines.

Mark Lemley, *Convergence in the Law of Software Copyright?*, 10 HIGH TECHNOLOGY LAW JOURNAL 1, 26–27 (1995). Both Oracle and Sun have applied for and received patents that claim aspects of the Java API. *See, e.g.*, U.S. Patents 6,598,093 and 7,006,855. (These were not asserted at trial.)[7]

* * *

In view of the foregoing, this order concludes that our immediate case is controlled by these principles of copyright law:

- Under the merger doctrine, when there is only one (or only a few) ways to express something, then no one can claim ownership of such expression by copyright.
- Under the names doctrine, names and short phrases are not copyrightable.
- Under Section 102(b), copyright protection never extends to any idea, procedure, process, system, method of operation or concept

[7] The issue has been debated in the journals. For example, Professor Pamela Samuelson has argued that Section 102(b) codified the *Baker* exclusion of procedures, processes, systems, and methods of operation for computer programs as well as the pre-*Baker* exclusion of high-level abstractions such as ideas, concepts, and principles. Pamela Samuelson, *Why Copyright Law Excludes Systems and Processes from the Scope of Protection*, 85 TEX. L. REV. 1921 (2007). In contrast, Professor David Nimmer (the son of Professor Melville Nimmer) has argued that Section 102(b) should not deny copyright protection to "the expression" of a work even if that work happens to consist of an idea, procedure or process. 1-2 NIMMER ON COPYRIGHT § 2.03[D] (internal citations omitted). Similarly, Professor Jane Ginsburg has argued that the Section 102(b) terms "process," "system," and "method of operation" should not be understood literally for computer programs. Jane Ginsburg, *Four Reasons and a Paradox: The Manifest Superiority of Copyright Over Sui Generis Protection of Computer Software*, 94 COLUM. L. REV. 2559, 2569–70 (1994).

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regardless of its form. Functional elements essential for interoperability are not copyrightable.

- Under *Feist*, we should not yield to the temptation to find copyrightability merely to reward an investment made in a body of intellectual property.

APPLICATION OF CONTROLLING LAW TO CONTROLLING FACTS

All agree that everyone was and remains free to program in the Java language itself. All agree that Google was free to use the Java language to write its own API. While Google took care to provide fresh line-by-line implementations (the 97 percent), it generally replicated the overall name organization and functionality of 37 packages in the Java API (the three percent). The main issue addressed herein is whether this violated the Copyright Act and more fundamentally whether the replicated elements were copyrightable in the first place.

This leads to the first holding central to this order and it concerns the method level. The reader will remember that a method is like a subroutine and over six thousand are in play in this proceeding. As long as the specific code written to implement a method is different, anyone is free under the Copyright Act to write his or her own method to carry out exactly the same function or specification of any and all methods used in the Java API. Contrary to Oracle, copyright law does not confer ownership over any and all ways to implement a function or specification, no matter how creative the copyrighted implementation or specification may be. The Act confers ownership only over the specific way in which the author wrote out his version. Others are free to write their own implementation to accomplish the identical function, for, importantly, ideas, concepts and functions cannot be monopolized by copyright.

To return to our example, one method in the Java API carries out the function of comparing two numbers and returning the greater. Google — and everyone else in the world — was and remains free to write its own code to carry out the identical function so long as the implementing code in the method body is different from the copyrighted implementation. This is a simple example, but even if a method resembles higher mathematics, everyone is still free to try their hand at writing a different implementation, meaning that they are free to use the same

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inputs to derive the same outputs (while throwing the same exceptions) so long as the implementation in between is their own. The House Report, quoted above, stated in 1976 that "the actual processes or methods embodied in the program are not within the scope of the copyright law." H.R. REP. NO. 94-1476, at 57 (1976).

Much of Oracle's evidence at trial went to show that the design of methods in an API was a creative endeavor. Of course, that is true. Inventing a new method to deliver a new output can be creative, even inventive, including the choices of inputs needed and outputs returned. The same is true for classes. But such inventions — at the concept and functionality level — are protectable only under the Patent Act. The Patent and Trademark Office examines such inventions for validity and if the patent is allowed, it lasts for twenty years. Based on a single implementation, Oracle would bypass this entire patent scheme and claim ownership over any and all ways to carry out methods for 95 years — without any vetting by the Copyright Office of the type required for patents. This order holds that, under the Copyright Act, no matter how creative or imaginative a Java method specification may be, the entire world is entitled to use the same method specification (inputs, outputs, parameters) so long as the line-by-line implementations are different. To repeat the Second Circuit's phrasing, "there might be a myriad of ways in which a programmer may . . . express the idea embodied in a given subroutine." *Computer Associates*, 982 F.2d at 708. The method specification is the *idea*. The method implementation is the *expression*. No one may monopolize the *idea*.[8]

To carry out any given function, the method specification as set forth in the declaration *must be identical* under the Java rules (save only for the choices of argument names). Any other declaration would carry out some *other* function. The declaration requires precision. Significantly, when there is only one way to write something, the merger doctrine bars anyone from claiming exclusive copyright ownership of that expression. Therefore, there can be no copyright violation in using the identical declarations. Nor can there be any copyright violation

[8] Each method has a singular purpose or function, and so, the basic function or purpose of a method will be an unprotectable process. *Gates Rubber Co. v. Bando Chemical Industries, Ltd.*, 9 F.3d 823, 836 (10th Cir. 1993); *see Apple Computer, Inc. v. Formula Intern. Inc.*, 725 F.2d 521, 525 (9th Cir. 1984) (holding that while a particular set of instructions is copyrightable, the underlying computer process is not).

due to the *name* given to the method (or to the arguments), for under the law, names and short phrases cannot be copyrighted.

In sum, Google and the public were and remain free to write their own implementations to carry out exactly the same functions of all methods in question, using exactly the same method specifications and names. Therefore, at the method level — the level where the heavy lifting is done — Google has violated no copyright, it being undisputed that Google's implementations are different.

As for classes, the rules of the language likewise insist on giving names to classes and the rules insist on strict syntax and punctuation in the lines of code that declare a class. As with methods, for any desired functionality, the declaration line will *always* read the same (otherwise the functionality would be different) — save only for the name, which cannot be claimed by copyright. Therefore, under the law, the declaration line cannot be protected by copyright. This analysis is parallel to the analysis for methods. This now accounts for virtually all of the three percent of similar code.

*   *   *

Even so, the second major copyright question is whether Google was and remains free to group its methods in the same way as in Java, that is, to organize its Android methods under the same class and package scheme as in Java. For example, the Math classes in both systems have a method that returns a cosine, another method that returns the larger of two numbers, and yet another method that returns logarithmic values, and so on. As Oracle notes, the rules of Java did not insist that these methods be grouped together in any particular class. Google could have placed its trigonometric function (or any other function) under a class other than Math class. Oracle is entirely correct that the rules of the Java language did not require that the same grouping pattern (or even that they be grouped at all, for each method could have been placed in a stand-alone class).[9]

[9] As to the groupings of methods within a class, Google invokes the *scenes a faire* doctrine. That is, Google contends that the groupings would be so expected and customary as to be permissible under the *scenes a faire* doctrine. For example, the methods included under the Math class are typical of what one would expect to see in a group of math methods. Just as one would expect certain items in the alcove for nuts, bolts and screws

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Oracle's best argument, therefore, is that while no single name is copyrightable, Java's overall system of organized names — covering 37 packages, with over six hundred classes, with over six thousand methods — is a "taxonomy" and, therefore, copyrightable under *American Dental Association v. Delta Dental Plans Association*, 126 F.3d 977 (7th Cir. 1997). There was nothing in the rules of the Java language that required that Google replicate the same groupings even if Google was free to replicate the same functionality.[10]

The main answer to this argument is that while the overall scheme of file name organization resembles a taxonomy, it is *also* a command structure for a system or method of operation of the application programming interface. The commands are (and must be) in the form

java.package.Class.method()

and each calls into action a pre-assigned function.[11]

To repeat, Section 102(b) states that "in no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation . . . regardless of the form . . . ." That a system or method of operation has thousands of commands arranged in a creative taxonomy does not change its character as a method of operation. Yes, it is creative. Yes, it is original. Yes, it resembles a taxonomy. But it is nevertheless a command structure, a system or method of operation — a long hierarchy of

in a hardware store, one would expect the methods of the math class to be in, say, a typical math class. At trial, however, neither side presented evidence from which we can now say that the same is true for all the other hundreds of classes at issue. Therefore, it is impossible to say on this record that *all* of the classes and their contents are typical of such classes and, on this record, this order rejects Google's global argument based on *scenes a faire*.

[10] This is a good place to point out that while the groupings appear to be the same, when we drill down into the detail code listings, we see that the actual sequences of methods in the listings are different. That is, the sequence of methods in the class Math in Android is different from the sequence in the same class in Java, although all of the methods in the Java version can be found somewhere in the Android version, at least as shown in their respective listings (TX 47.101, TX 623.101). The Court has not compared all six-hundred-plus classes. Nor has any witness or counsel so far on the record. Oracle does not, however, contend that the actual sequences would track method-for-method and it has not so proven. This detailed observation, however, does not change the fact that all of the methods in the Java version can be found somewhere in the Android version, classified under the same classes.

[11] The parentheses indicate that inputs/arguments may be included in the command.

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over six thousand commands to carry out pre-assigned functions. For that reason, it cannot receive copyright protection — patent protection perhaps — but not copyright protection.

* * *

Interoperability sheds further light on the character of the command structure as a system or method of operation. Surely, millions of lines of code had been written in Java before Android arrived. These programs necessarily used the java.package.Class.method() command format. These programs called on all or some of the specific 37 packages at issue and necessarily used the command structure of names at issue. Such code was owned by the developers themselves, not by Oracle. *In order for at least some of this code to run on Android, Google was required to provide the same java.package.Class.method() command system using the same names with the same "taxonomy" and with the same functional specifications.* Google replicated what was necessary to achieve a degree of interoperability — but no more, taking care, as said before, to provide its own implementations.

That interoperability is at the heart of the command structure is illustrated by Oracle's preoccupation with what it calls "fragmentation," meaning the problem of having imperfect interoperability among platforms. When this occurs, Java-based applications may not run on the incompatible platforms. For example, Java-based code using the replicated parts of the 37 API packages will run on Android but will not if a 38th package is needed. Such imperfect interoperability leads to a "fragmentation" — a Balkanization — of platforms, a circumstance which Sun and Oracle have tried to curb via their licensing programs. In this litigation, Oracle has made much of this problem, at times almost leaving the impression that if only Google had replicated *all* 166 Java API packages, Oracle would not have sued. While fragmentation is a legitimate business consideration, it begs the question whether or not a license was required in the first place to replicate some or all of the command structure. (This is especially so inasmuch as Android has not carried the Java trademark, and Google has not held out Android as fully compatible.) The immediate point is this: fragmentation, imperfect interoperability, and Oracle's angst over it illustrate the character of the command structure as a functional system or method of operation.

In this regard, the Ninth Circuit decisions in *Sega* and *Sony*, although not on all fours, are close analogies. Under these two decisions, interface procedures required for interoperability were deemed "functional requirements for compatibility" and were not copyrightable under Section 102(b). Both decisions held that interface procedures that were necessary to duplicate in order to achieve interoperability were functional aspects not copyrightable under Section 102(b). Here, the command structure for the 37 packages (including inheritances and exception throws), when replicated, at least allows interoperability of code using the replicated commands. To the extent of the 37 packages — which, after all, is the extent of Oracle's copyright claim — *Sega* and *Sony* are analogous. Put differently, if someone could duplicate the interfaces of the Sony BIOS in order to run the Playstation games on desktops (taking care to write its own implementations), then Google was free to duplicate the command structure for the 37 packages in Android in order to accommodate third-party source code relying on the 37 packages (taking care to write its own implementations). Contrary to Oracle, "full compatibility" is not relevant to the Section 102(b) analysis. In *Sony*, the accused product implemented only 137 of the Playstation BIOS's 242 functions because those were the only functions invoked by the games tested. Connectix's Opening Appellate Brief at 18, available at 1999 WL 33623860, (9th Cir. May 27, 1999). Our court of appeals held that the accused product "itself infringe[d] no copyright." *Sony*, 203 F.3d at 608 n.11. This parallels Google's decision to implement some but not all of the Java API packages in Android.

* * *

This explains why *American Dental Association v. Delta Dental Plans Association*, 126 F.3d 977 (7th Cir. 1997), is not controlling. Assuming arguendo that a taxonomy is protectable by copyright in our circuit, *see Practice Mgmt. Info. Corp. v. Am. Med. Ass'n*, 121 F.3d 516 (9th Cir. 1997), the taxonomy in *ADA* had nothing to do with computer programs. It was not a system of commands, much less a system of commands for a computer language. The taxonomy there subdivided the universe of all dental procedures into an outline of numbered categories with English-language descriptions created by the ADA. This was then to be used by insurance companies and dentists to facilitate billings. By contrast, here the taxonomy is

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composed entirely of a system of commands to carry out specified computer functions. For a similar reason, Oracle's analogy to stealing the plot and character from a movie is inapt, for movies involve no "system" or "method of operation" — scripts are entirely creative.

In *ADA*, Judge Frank Easterbrook (writing for the panel) suggested that a "system" under Section 102(b) had to come with "instructions for use." 126 F.3d at 980. Because the taxonomy there at issue had no instructions for use, among other reasons, it was held not to be a system. By contrast, the API at issue here does come with instructions for use, namely, the documentation and embedded comments that were much litigated at trial. They describe every package, class and method, what inputs they need, and what outputs they return — the classic form of instructions for use.

In our circuit, the structure, sequence and organization of a computer program may (or may not) qualify as a protectable element depending on the "particular facts of each case" and always subject to exclusion of unprotectable elements. *Johnson Controls v. Phoenix Control Sys.*, 886 F.2d 1173, 1175 (9th Cir. 1989). Contrary to Oracle, *Johnson Controls* did not hold that all structure, sequence and organization in all computer programs are within the protection of a copyright. On a motion for preliminary injunction, the district court found that the structure, sequence and organization of the copyrighted program, on the facts there found, deserved copyright protection. (The structure, sequence and organization features found protectable were not described in the appellate decision.) On an appeal from the preliminary injunction, our court of appeals merely said no clear error had occurred. Again, the appellate opinion stated that the extent to which the structure, sequence and organization was protectable depended on the facts and circumstances of each case. The circumstances there are not the circumstances here.

In closing, it is important to step back and take in the breadth of Oracle's claim. Of the 166 Java packages, 129 were not violated in any way. Of the 37 accused, 97 percent of the Android lines were new from Google and the remaining three percent were freely replicable under the merger and names doctrines. Oracle must resort, therefore, to claiming that it owns, by copyright, the exclusive right to any and all possible implementations of the taxonomy-like command structure for the 166 packages and/or any subpart thereof — even though it

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copyrighted only one implementation. To accept Oracle's claim would be to allow anyone to copyright one version of code to carry out a system of commands and thereby bar all others from writing their own different versions to carry out all or part of the same commands. No holding has ever endorsed such a sweeping proposition.

CONCLUSION

This order does not hold that Java API packages are free for all to use without license. It does not hold that the structure, sequence and organization of all computer programs may be stolen. Rather, it holds on the specific facts of this case, the particular elements replicated by Google were free for all to use under the Copyright Act. Therefore, Oracle's claim based on Google's copying of the 37 API packages, including their structure, sequence and organization is **DISMISSED**. To the extent stated herein, Google's Rule 50 motions regarding copyrightability are **GRANTED** (Dkt. Nos. 984, 1007). Google's motion for a new trial on copyright infringement is **DENIED AS MOOT** (Dkt. No. 1105).

IT IS SO ORDERED.

Dated: May 31, 2012.

WILLIAM ALSUP
UNITED STATES DISTRICT JUDGE

FINAL JUDGMENT

DATED JUNE 20, 2012

United States District Court
For the Northern District of California

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

ORACLE AMERICA, INC.,

Plaintiff,

v.

GOOGLE INC.,

Defendant.
____________________________________/

No. C 10-03561 WHA

FINAL JUDGMENT

The pleadings in this action asserted the following: Oracle asserted infringement of seven patents, U.S. Patent Nos. 6,125,447; 6,192,476; 5,966,702; 7,426,720; RE38,104; 6,910,205; and 6,061,520. Oracle further asserted infringement of its copyrights in the code, documentation, specifications, libraries, and other materials that comprise the Java platform. Oracle alleged that the infringed elements included Java method and class names, definitions, organization, and parameters; the structure, organization and content of Java class libraries; and the content and organization of Java's documentation. In turn, Google asserted declaratory judgments of non-infringement and invalidity, and equitable defenses. Before trial, Oracle dismissed with prejudice all claims for relief based on the '447, '476, '702, '720, and '205 patents. During trial, Google abandoned claims for relief for invalidity declarations as to the '104 and '520 patents.

Based upon the verdicts by the jury and orders entered by the Court, it is now **ORDERED, ADJUDGED, AND DECREED** that:

With respect to Oracle's claim for relief and Google's counterclaim for declaratory judgment of non-infringement for the '520 and '104 patents, judgment is entered for Google and against Oracle. With respect to Google's counterclaims for declaratory judgment of invalidity for the '520 and '104 patents, judgment is entered for Oracle and against Google, such counterclaims having been abandoned during trial. With respect to the five remaining patents, claims for relief by Oracle were completely dismissed with prejudice by Oracle (and may not be resurrected except as indicated in the orders of May 3, 2011, and March 2, 2012, with respect to new products). In this regard, it is the intent of this judgment and order that general principles of merger of claims into the judgment and res judicata shall be applicable.

With respect to Oracle's claim for relief for copyright infringement, judgment is entered in favor of Google and against Oracle except as follows: the rangeCheck code in TimSort.java and ComparableTimSort.java, and the eight decompiled files (seven "Impl.java" files and one "ACL" file), as to which judgment for Oracle and against Google is entered in the amount of zero dollars (as per the parties' stipulation).

With respect to Google's equitable defenses, judgment is entered for Oracle and against Google as to waiver and implied license. As to equitable estoppel and laches, no ruling need be made due to mootness.

IT IS SO ORDERED.

Dated: June 20, 2012.

WILLIAM ALSUP
UNITED STATES DISTRICT JUDGE

ORDER DENYING MOTION FOR JUDGMENT AS A MATTER OF LAW AND NEW TRIAL

DATED JULY 13, 2012

United States District Court
For the Northern District of California

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

ORACLE AMERICA, INC., Plaintiff, v. GOOGLE INC., Defendant. _____________________________/	No. C 10-03561 WHA **ORDER DENYING MOTION FOR JUDGMENT AS A MATTER OF LAW AND NEW TRIAL**

Plaintiff Oracle America, Inc. moves for judgment as a matter of law under Rule 50(b), or in the alternative, for a new trial under Rule 59, on issues of patent and copyright infringement. Oracle's arguments are repetitive of its Rule 50(a) motions and rely on the same evidence. For reasons stated in prior orders (Dkt. Nos. 1119, 1165, 1201, 1202, 1203, 1211), Oracle's motion is **DENIED**. The hearing scheduled for July 26 is **VACATED**.

IT IS SO ORDERED.

Dated: July 13, 2012.

Wm Alsup
WILLIAM ALSUP
UNITED STATES DISTRICT JUDGE

CERTIFICATE OF SERVICE

I hereby certify that on February 11, 2013, I caused the foregoing Opening Brief And Addendum of Plaintiff-Appellant Oracle America, Inc., to be electronically filed with the Clerk of the Court using CM/ECF, which will automatically send email notification of such filing to the following counsel of record:

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CERTIFICATE OF COMPLIANCE
UNDER FEDERAL RULES OF APPELLATE PROCEDURE 32(a)(7) AND FEDERAL CIRCUIT RULE 32

Counsel for Plaintiff-Appellant certifies that the brief contained herein has a proportionally spaced 14-point typeface, and contains 13,998 words, based on the “Word Count” feature of Word 2007, including footnotes and endnotes. Pursuant to Federal Rule of Appellate Procedure 32(a)(7)(B)(iii) and Federal Circuit Rule 32(b), this word count does not include the words contained in the Certificate of Interest, Table of Contents, Table of Authorities, Abbreviations, and Statement of Related Cases.

Dated: February, 11, 2013 Respectfully submitted,

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