Between Ideas and Computer Programs

Does EU Law Really Preclude Copyright Protection of Application Programming Interfaces?

(re)WIPS[5] Fifth (Online) Workshop
on Intellectual Property Rights in Szeged

dr Bohdan Widła
Jagiellonian University
in Kraków

2012 (Oracle, District Court)

2014 (Oracle, Court of Appeals)

2016 (Oracle, District Court)

2018 (Oracle, Court of Appeals)

2010 (BSA)

2012 (SAS)

Am I late to the party?

2012 (Oracle, District Court)

2014 (Oracle, Court of Appeals)

2016 (Oracle, District Court)

2018 (Oracle, Court of Appeals)

2021 (Oracle, SCOTUS)

2010 (BSA)

2012 (SAS)

2019 (Cofemel)

2020 (Brompton)

But hopefully not too late…

Java standard library has over 160 of packages.

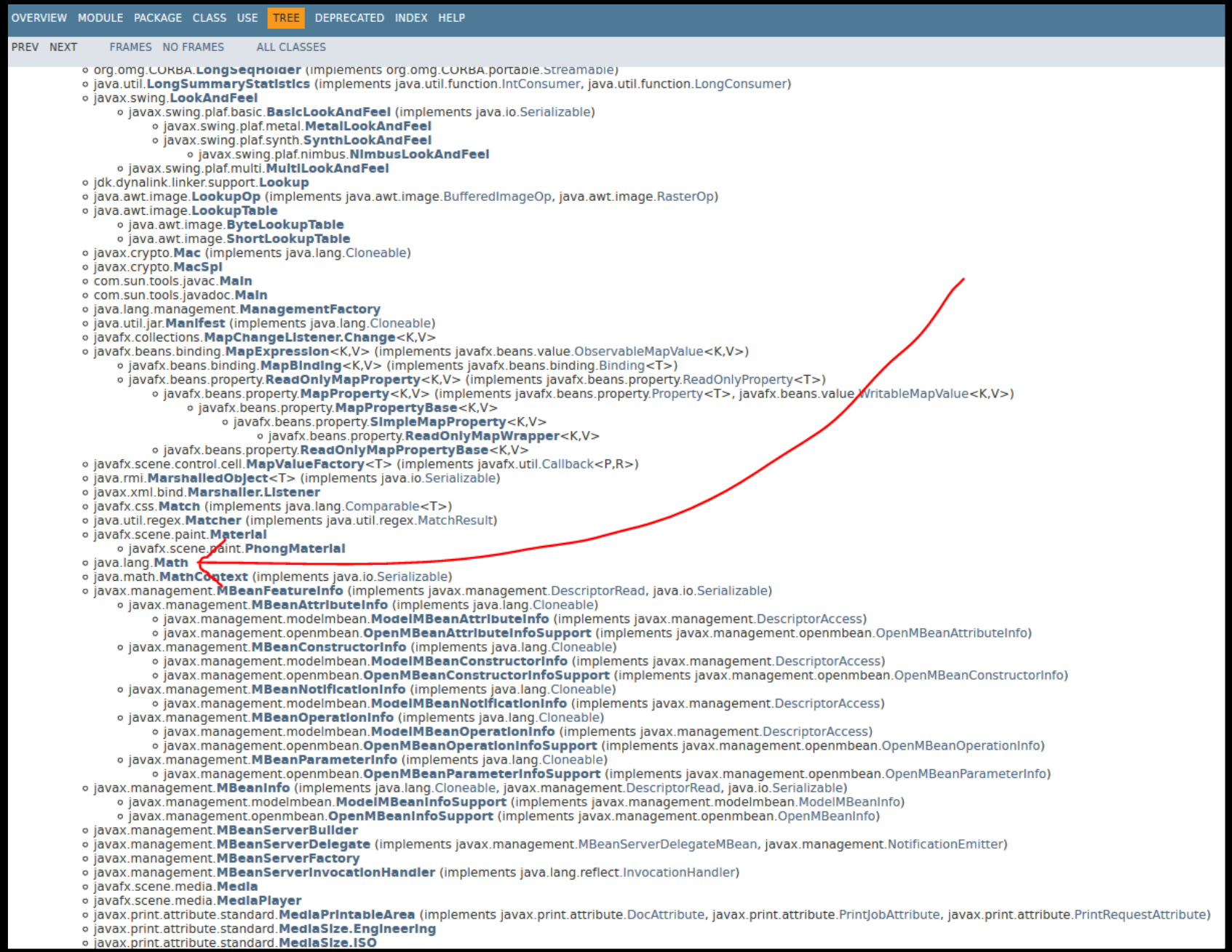
Packages are divided into classes.

Classes contain methods.

Possible syntax of an API call:

java.package.Class.method(), e.g.

- java.lang = package
- Math = class
- max = method



Java Platform, Standard Edition 8, API Specification, https://docs.oracle.com/javase/8/docs/api/overview-tree.html

```java
public static int max(int a, int b)
{
  return (a > b) ? a : b;
}
```

declaring code (what): COPIED

implementing code (how): NOT COPIED

Java OpenJDK (Sun/Oracle)

```java
public static int max(int i1, int i2) {
    return i1 > i2 ? i1 : i2;
}
```

new implementation, but it is still a 'max' function in the 'Math' class in the 'java.lang' package

Android (Google)

Copyright protection of:

the declaring code itself?

the structure, sequence, organization of the API?

SAS can also address first-hand the consequences of curtailing copyright protection for software interfaces. All SAS licenses prohibit reverse engineering and copying without permission. But a British competitor reverse engineered and copied the SAS System to create a drop-in replacement, *i.e.*, a clone of the SAS System. When SAS sued in the United States and Europe, the outcomes were starkly different. Here, the Fourth Circuit affirmed a $79 million award to SAS based on willful breach of license (and other state-law claims). For the same misconduct in the U.K., however, SAS received no redress because Europe has weaker protection for computer programs than the United States. The European courts deemed SAS's software interfaces not copyrightable and its license provisions unenforceable.

brief of SAS Institute inc. as *amicus curiae* in support of Oracle

Really?

The Court also points out that the finding [that neither the functionality of a computer program nor the programming language and the format of data files constitute a form of expression of that program] cannot affect the possibility that the SAS language and the format of SAS Institute's data files might be protected, as works, by copyright under Directive 2001/29 if they are their author's own intellectual creation

C-406/10 SAS Institute
para 45

A holding for Google on either question presented would dispense with Oracle's copyright claims. Given the rapidly changing technological, economic, and business-related circumstances, we believe we should not answer more than is necessary to resolve the parties' dispute. We shall assume, but purely for argument's sake, that the entire Sun Java API falls within the definition of that which can be copyrighted. We shall ask instead whether Google's use of part of that API was a "fair use." Unlike the Federal Circuit, we conclude that it was.

Google LLC v. Oracle America Inc. (593 U.S. ___)

For example, a programmer building a new application for personal banking may wish to use various tasks to, say, calculate a user's balance or authenticate a password. To do so, she need only learn the method calls associated with those tasks. In this way, the declaring code's shortcut function is similar to a gas pedal in a car that tells the car to move faster or the QWERTY keyboard on a typewriter that calls up a certain letter when you press a particular key. As those analogies demonstrate, one can think of the declaring code as part of an *interface* between human beings and a machine.

A. "The Nature of the Copyrighted Work"

The Sun Java API is a "user interface." It provides a way through which users (here the programmers) can "manipulate and control" task-performing computer programs "via a series of menu commands." *Lotus Development Corp.*, 49 F. 3d, at 809. The API reflects Sun's division of possible tasks that a computer might perform into a set of actual tasks that certain kinds of computers actually will perform.

Google LLC v. Oracle America Inc. (593 U.S. ___)

Sounds familiar!

A great way to get usable APIs is to let the customer (namely, the caller) write the function signature, and to give that signature to a programmer to implement. This step alone eliminates at least half of poor APIs: too often, the implementers of APIs never use their own creations, with disastrous consequences for usability. Moreover, an API is not about programming, data structures, or algorithms—an API is a user interface, just as much as a GUI. The user at the using end of the API is a programmer—that is, a human being. Even though we tend to think of APIs as machine interfaces, they are not: they are human–machine interfaces.

M. Henning, *API Design Matters*,
doi:10.1145/1506409.1506424

A court and a computer scientist speaking the same language?!

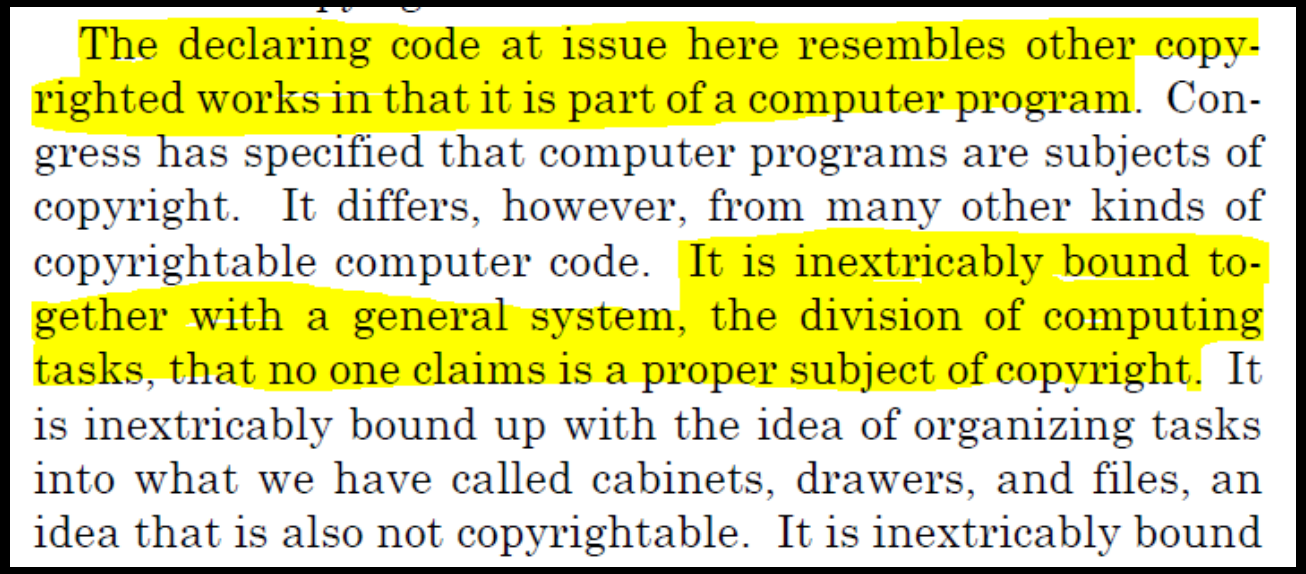
[T]he object of protection under Directive 91/250 includes the forms of expression of a computer program and the preparatory design work capable of leading, respectively, to the reproduction or the subsequent creation of such a program.

C-393/09 Bezpečnostní softwarová asociace
para 37

APIs will only exceptionally be a product of a strictly technically determined process.

See e.g.

- M. Gülker, *Der urheberrechtliche Schutz von Schnittstellen, insbesondere von APIs* – Teil I (InTeR 1/21) & *Der urheberrechtliche Schutz von Schnittstellen, insbesondere von APIs* – Teil II (InTeR 2/21, forthcoming)
- M. Henning, *API Design Matters*, doi:10.1145/1506409.1506424



The declaring code at issue here resembles other copyrighted works in that it is part of a computer program. Congress has specified that computer programs are subjects of copyright. It differs, however, from many other kinds of copyrightable computer code. It is inextricably bound together with a general system, the division of computing tasks, that no one claims is a proper subject of copyright. It is inextricably bound up with the idea of organizing tasks into what we have called cabinets, drawers, and files, an idea that is also not copyrightable. It is inextricably bound

Google LLC v. Oracle America Inc. (593 U.S. ___)

If we protect an API, do we protect functionality?

Finally, given programmers' investment in learning the Sun Java API, to allow enforcement of Oracle's copyright here would risk harm to the public. Given the costs and difficulties of producing alternative APIs with similar appeal to programmers, allowing enforcement here would make of the Sun Java API's declaring code a lock limiting the future creativity of new programs. Oracle alone would hold the key. The result could well prove highly profitable to Oracle (or other firms holding a copyright in computer interfaces). But those profits could well flow from creative improvements, new applications, and new uses developed by users who have learned to work with that interface. To that extent, the lock would interfere with, not further, copyright's basic creativity objectives. See *Connectix Corp.*, 203 F. 3d, at 607; see also *Sega Enterprises*, 977 F. 2d, at 1523–1524 ("An attempt to monopolize the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression");

Google LLC v. Oracle America Inc. (593 U.S. ___)

To what extent do we take public interest into account when we decide if something is protected?

In that regard, it should be noted that the criterion of originality cannot be met by the components of a subject matter which are differentiated only by their technical function. It follows in particular from Article 2 of the WIPO Copyright Treaty that copyright protection does not extend to ideas. Protecting ideas by copyright would amount to making it possible to monopolise ideas, to the detriment, in particular, of technical progress and industrial development.

C-833/18 Brompton Bicycle
(quoting BSA and SAS!)

It follows from the wording of that provision that its primary objective is to limit protection by the sui generis right solely to databases the creation and functioning of which require substantial investments. That objective is in keeping with the objective of Directive 96/9, which is to protect and stimulate such investments. However, that limitation also has the function of protecting competition.

Opinion of AG Szpunar in C-762/19 SIA 'CV-Online Latvia' para 45

dr Bohdan Widła

b.widla@uj.edu.pl

Stripes on top: E. Hawkins, **Warming Stripes** (National Centre for Atmospheric Science, University of Reading); data from Berkeley Earth, NOAA, UK Met Office, MeteoSwiss, DWD, SMHI, UoR, Meteo France & ZAMG; showyourstripes.info/faq).