Text

Description automatically generated

Library Management System

by SP21-BCS-007

## Requirements:

Write a menu driven program that depicts the working of a library. In this regard, you must first create a structure called book to hold the ID, title of the book, author name, price of the book, and flag indicating whether book is issued or not. Your program can create a (partially filled) array named ‘books data’ of ‘book’ structure to hold the information of books present in the library. The maximum capacity of books is 500.

The program should display different options to user for manipulating the books information. The menu options should be:

* **Add book information:** This option will add the book to the end of books data array. Should display an array, if books capacity is full (i.e., already added 500 books).
* **Display book information:** This option will ask the user to enter book id and show the book information (e.g., name, price etc.) after searching it in the books data array.
* **List all books of given author:** This option will ask the user to enter book author name and show the book information (e.g., name, price etc.) after searching it with author name in the books data array.
* **List the count of unissued books in the library:**
* **List the books in the order of ID:** you will have to sort books according to books ID.
* **Save books information:** This function saves all books information from the books data array into a file named ‘books.txt’.
* **Load books information:** This function loads all books information from a file named ‘books.txt’ into the books data array.
* **Exit**

**Note:** The usage of functions in this program is optional, but highly recommended.

<https://drive.google.com/file/d/1x34vFsOxicIywNBvtPg3Y8K479Ge3Vho/view?usp=sharing>

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## CODE Features:

# Case Background

Assignment 3

Professional Practices for IT

## Question 01:

Search the web and find out two intellectual properties copyright real-life cases reported in the national and international media.

## CASE-II

Reported in National and International Media

## Lufthansa Technik AG v Astronics Advanced Electronic Systems and another [2020] EWHC 1968 (Pat)

# Introduction:

The UK High Court handed down its judgment on 22 July 2020 on two patent infringement actions concerning a patent (Patent) owned by Lufthansa Technik AG (Lufthansa). The Patent was for an “electrical power supply device”, namely high voltage sockets for personal electrical devices to be used in commercial aircraft cabins. Lufthansa claimed that the Patent in question was infringed either directly or indirectly, by Astronics Advanced Electronic Systems, Safran Seats GC Ltd., and Panasonic Avionics Corporation respectively (together, the Defendants). In response to the infringement claim, the Defendants argued that the relevant claims of the Patent were invalid for lack of inventive step and novelty (for a patent to be valid it must be new and not obvious as against technology already available at the relevant time).

The High Court undertook a detailed analysis in determining whether the Patent was valid and infringed by the Defendants, which included identifying the “skilled person” and whether the requisite novelty and inventive step requirements had been met.

# Case Background:

The patented invention, an “electrical power supply device”, allows passengers on airplanes to plug in their personal electronic devices into the high voltage socket in their seat, and to charge their personal devices safely. The High Court noted that prior to the invention, “some airplane seats did have a socket into which a passenger could plug his personal electronic device, but the power supply was a low voltage DC and it was necessary to use an adapter to plug the device into the socket”. The Defendants argued that the Patent lacked novelty and inventive step and was therefore invalid.

# Decision:

In determining the validity of the Patent, the High Court began with identifying the skilled person. The High Court described the relevant skilled person as being “a graduate with technical knowledge and experience of the design and implementation of power supply technology, together with the general safety considerations applicable to electrical devices. The skilled person would not be a new graduate acting alone”. The Defendants’ skilled person would “have a degree or equivalent qualification in electrical engineering and three to five years’ experience working in the airplane business, either for an aircraft manufacturer or component manufacturer”.

The High Court decided that the invention was novel given that it included new safety features that were particularly useful in the airline cabin environment.

The High Court also concluded that the invention was not obvious, stressing that the “the issue is whether the matter which is said to involve an inventive concept was technically or practically obvious not whether it was obvious that it could be exploited commercially”. As a result, the High Court ruled that the Patent was valid and infringed by all three Defendants.

# Comment:

Patent infringement claims are not new in the airline sector and have featured in litigation concerning components as diverse as engineered engine parts and airline seats.

However, as the airline cabin environment becomes increasingly sophisticated, we can now expect to see claims expand to cover electronics and telecommunication patents that were historically the preserve of other sectors.

Assignment 3

Professional Practices for IT

## Question 02:

* Reverse Engineering: Game Mechanism
  + Sega Enterprises Ltd. v. Accolade Inc. (1992)

# Introduction:

After the release of the Sega Genesis in 1989, video game publisher Accolade began exploring options to release some of their PC game titles onto the console. At the time, however, Sega had a licensing deal in place for third-party developers that increased the costs to the developer. According to Accolade co-founder Alan Miller, "One pays them between $10 and $15 per cartridge on top of the real hardware manufacturing costs, so it about doubles the cost of goods to the independent publisher.”

In addition to this, Sega required that it would be the exclusive publisher of Accolade's games if Accolade were to be licensed, preventing Accolade from releasing its games to other systems. To get around licensing, Accolade chose to seek an alternative way to bring their games to the Genesis by purchasing a console in order to decompile the executable code of three Genesis games and use it to program their new cartridges in a way that would allow them to disable the security lockouts that prevented playing of unlicensed games. This was done successfully to bring Ishido: The Way of Stones to the Genesis in 1990. In doing so, Accolade had also copied Sega's copyrighted game code multiple times to reverse engineer the software of Sega's licensed Genesis games.

# Case History:

The decision in the district court ruling had been very costly to Accolade. According to Accolade co-founder Alan Miller, "Just to fight the injunction, we had to pay at least half a million dollars in legal fees. “On April 14, 1992, Accolade asked the district court to stay the preliminary injunction pending appeal, but when the court did not rule by April 21, Accolade appealed the injunction to the Ninth Circuit of the U.S. Court of Appeals. A stay was granted on the mandate to recall all of Accolade's Genesis games, but the injunction preventing further reverse engineering and development of Genesis software was maintained until August 28, when the Ninth Circuit ordered it dissolved pending the appeal review. On August 28, 1992, the Ninth Circuit reversed the district court's preliminary injunction and ruled that Accolade's recompilation of the Sega software constituted fair use.

The court's written opinion followed on October 20 and noted that the use of the software was non-exploitative, despite being commercial, and that the trademark infringement, being required by the TMSS for a Genesis game to run on the system, was inadvertently triggered by a fair use act and the fault of Sega for causing false labeling. As a result of the verdict being overturned, the costs of the appeal were assessed to Sega. The injunction remained in force, however, because Sega petitioned the appeals court to rehear the case.

# Allegations:

1. Disassembling, translating, converting, or adapting the copyrighted object code in SEL's game programs in any manner whatsoever.
2. Using, modifying, enhancing, or embellishing SEL's disassembled code in any manner whatsoever.
3. Developing, manufacturing, shipping, distributing, or selling any Genesis-compatible video game programs that were derived from, based upon, or otherwise created in whole or in part by means which included the disassembly, translation, transformation, or enhancement of the copyrighted object code in SEL's game programs.
4. Manufacturing, shipping, distributing, or selling any Genesis-compatible video game program which prompts the message "PRODUCED BY OR UNDER LICENCE FOR SEGA ENTERPRISES LTD." when inserted in a Genesis console.

# Court Decision:

On January 8, 1993, with Sega's petition for a rehearing still pending, the court took the unusual step of amending its October 20, 1992, opinion and lifted the injunction preventing Accolade from developing or selling Genesis software. This was followed by a formal denial of Sega's petition for a rehearing on January 26. As Accolade's counterclaim for false labeling under the Lanham Act was declined by the Ninth Circuit, this essentially left "each party as free to act as it was before the issuance of preliminary injunctive relief" while the district court considered the counterclaim. Sega and Accolade ultimately settled on April 30, 1993. As a part of this settlement, Accolade became an official licensee of Sega, and later developed and released Barkley Shut Up and Jam! while under license. The terms of the licensing, including whether any special arrangements or discounts were made to Accolade, were not released to the public. The financial terms of the settlement were also not disclosed, although both companies agreed to pay their own legal costs.

In an official statement, Sega of America chairman David Rosen expressed satisfaction with the settlement. According to Rosen, "This settlement is a satisfactory ending to what was a very complex set of issues. Not only are we pleased to settle this case amicably, but we’ve also turned a corner in our association with Accolade.

Assignment 3

Professional Practices for IT

## Question 02:

* File Sharing:
  + MGM v. Grokster

# Introduction:

The case is frequently characterized as a re-examination of the issues in Sony Corp. v. Universal City Studios. AKA the "Betamax case", a decision that protected VCR manufacturers from liability for contributory infringement. MGM wants makers of file sharing technology held liable for their users' copyright infringements. In Sony, the court held that technology could not be barred if it was "capable of substantial no infringing uses."

Grokster came before the Supreme Court having already won in two previous courts. The United States District Court for the Central District of California originally dismissed the case in 2003, citing the Betamax decision. Then a higher court, the Ninth Circuit Court of Appeals, upheld the lower court's decision after acknowledging that peer-to-peer ("P2P") software has legitimate and legal uses. Sharman Networks' Kazaa file sharing program was originally amongst the defendants but was dropped because the company is based in Vanuatu.

Computer and Internet technology companies such as Intel, and trade associations including firms such as Yahoo! and Microsoft, filed amicus curiae briefs in support of the file sharing companies, while the RIAA and MPAA both sided with MGM. Napster filed a brief in support of the petitioner copyright holders. Billionaire Mark Cuban partially financed Grokster's fight before the Supreme Court.

# Case History:

The Court stated that:

the argument for imposing indirect liability in this case is, however, a powerful one, given the number of infringing downloads that occur every day using Stream cast’s and Grokster’s software. When a widely shared service or product is used to commit infringement, it may be impossible to enforce rights in the protected work effectively against all direct infringers, the only practical alternative being to go against the distributor of the copying device for secondary liability on a theory of contributory or vicarious infringement. See In re Aimster Copyright Litigation, 334 F.3d 643, 645-646 (C.A.7 2003).

Slip op. at 12. However, instead of finding liability based on the theories of contributory infringement or vicarious liability as traditionally applied in the copyright field, the Court imported from the patent laws the concept of inducement of infringement and viewed it as a form of contributory infringement. Slip op. at 12-13 and n. 9. The Court stated that:

One infringes contributorily by intentionally inducing or encouraging direct infringement, see Gershwin Pub. Corp. v. Columbia Artists Management, Inc., 443 F.2d 1159, 1162 (C.A.2 1971), and infringes vicariously by profiting from direct infringement while declining to exercise a right to stop or limit it, Shapiro, Bernstein & Co. v. H.L. Green Co., 316 F.2d 304, 307 (C.A.2 1963).

Slip op. at 12. The Court also observed that as ”[w]e stated in Sony Corp. of America v. Universal City Studios, Inc., 464 U.S. 417, 104 S.Ct. 774, 78 L.Ed.2d 574 (1984), . . . ‘the lines between direct infringement, contributory infringement and vicarious liability are not clearly drawn’.” Slip op. at 12, n. 9. Accordingly, the Court ruled that:

For the same reasons that Sony took the staple-article doctrine of patent law as a model for its copyright safe-harbor rule, the inducement rule, too, is a sensible one for copyright. We adopt it here, holding that one who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, is liable for the resulting acts of infringement by third parties.

Slip op. at 19 (see also Slip op. at 23, n. 13: “the distribution of a product can itself give rise to liability where evidence shows that the distributor intended and encouraged the product to be used to infringe”).

The Court also concluded that:

# Allegations:

1. Whether a distributor of a product that is capable of lawful and unlawful use is liable for copyright infringement by a 3rd party using that product.
2. During oral argument, the Supreme Court justices appeared divided between the need to protect new technologies and the need to provide remedies against copyright infringement. Justice Antonin Scalia expressed concern that inventors would be chilled from entering the market by the threat of immediate lawsuits. Justice David Souter questioned how the interpretation of the law the plaintiffs argued for would affect devices like copy machines or the iPod.
3. The music industry suggested that iPods have a substantial and legitimate commercial use in contrast to Grokster, to which Souter replied, "I know perfectly well that I can buy a CD and put it on my iPod. But I also know if I can get music without buying it, I'm going to do so."[9] On the other hand, the justices seemed troubled at the prospect of ruling that Grokster's alleged business model of actively inducing infringement and then reaping the commercial benefits was shielded from liability.
4. Grokster argued that affirming the Ninth Circuit would only prevent an injunction against future use of the P2P software, while the plaintiffs would still be free to pursue damages in the district court for alleged past wrongful acts. Much of the Court, however, expressed skepticism that Grokster's continuing enterprise could be severable from the consequences of those prior acts.

# Court Decision:

The opinion was authored by Justice Souter, who wrote:

We hold that one who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, is liable for the resulting acts of infringement by third parties.

Concurring opinions were written by Justice Ginsburg, who was joined by Chief Justice Rehnquist and Justice Kennedy; and by Justice Breyer, joined by Justice Stevens and Justice O'Connor. While the Court unanimously concurred that Grokster could be liable for inducing copyright infringement, there was considerable disagreement over whether the case is substantially different from the Sony case, and whether the precedent established by Sony should be modified.

On the one hand, Justice Ginsburg, joined by Kennedy and Rehnquist, claim that " his case differs markedly from Sony" as there was insufficient evidence of uses which were non-infringing. On the other hand, Justice Breyer, joined by Stevens and O'Connor, claims "a strong demonstrated need for modifying Sony (or for interpreting Sony's standard more strictly) has not yet been shown," primarily because "the nature of lawfully swapped files is such that it is reasonable to infer quantities of current lawful use roughly approximate to those at issue in Sony." These justices concur in the judgment on the narrow ground of Grokster's alleged inducement of its customers to use the product illegally.

Roughly speaking, the Ginsburg concurrence suggests that Grokster would be liable (unprotected by Sony) even absent evidence of inducement. The Breyer concurrence, on the other hand, suggests that Grokster would be protected by Sony without evidence of inducement. The Souter opinion does not address whether Sony protects Grokster. Thus, neither the view that Grokster is protected nor the view that Grokster is unprotected by Sony commanded a plurality of the Court.