

COM6655 Professional Issues

Autumn 2021-22

Intellectual Property (part 1)

Professor Guy Brown

Department of Computer Science, University of Sheffield
g.j.brown@sheffield.ac.uk

Introduction

Aims of this lecture

- In this lecture we will introduce key concepts in intellectual property law:
 - What intellectual property is
 - Areas of law that protect intellectual property
- Copyright of computer software is a particular focus.
- We introduce the Copyright, Designs and Patents Act (1988).

What is intellectual property (IP)?

- Intellectual property (IP) is the name given to legal rights that protect creative works, inventions and commercial goodwill (intangible assets of a business).
- Intellectual property rights (IPR) include the following:
 - copyright
 - patents
 - trade marks
 - law of confidence
 - passing off
 - design rights
 - semiconductor regulations

- Why is intellectual property important?
- Should it be protected?

IP isn't tangible property

- If someone steals your bicycle, you no longer have it.
- A bicycle is *tangible*. You can touch it.
- Latin: *tangere*, to touch, to grasp

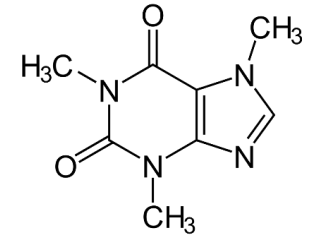


COM6655 PROFESSIONAL ISSUES

SLIDE 5

IP is intellectual property

- If you invent a cure for all known illnesses, and leave the formula on your desk, someone could read it, and then go away and produce the cure themselves.
- But you still have the formula yourself.
- The paper on which it is written is tangible, but the idea is not.



Possible cures for all known illnesses?

COM6655 PROFESSIONAL ISSUES

SLIDE 6

Copyright

- Copyright is a benefit granted by statute.
- First English copyright law (Statute of Anne) was introduced in 1709 and related only to **literary** works.
- It created a **registration system** that protected authors against unauthorised copying of books.
- Registered authors had the exclusive right to copy their book.



Queen Anne
(1665-1714)

COM6655 PROFESSIONAL ISSUES

SLIDE 7

Modern copyright law

- Copyright law now extends to **literary, dramatic, artistic** and **musical** works.
- Currently governed by the **Copyright, Designs and Patents Act 1988 (CDPA)**.
- Copyright provides the owner with exclusive rights to
 - publish,
 - perform,
 - broadcast,
 - adapt or
 - copy
- Applies to the whole or a substantial part of a work, for a set period of time.

COM6655 PROFESSIONAL ISSUES

SLIDE 8

Copyright term (duration)

- In the UK copyright exists (depending on the work and when it was produced) for
 - 70 years after the author's death, or
 - 50 years after the creation of the work
- It is free and automatic on creation of a work (registration is **not** required any more).
- Copyright protects the **expression** of an idea, **not the idea itself**.
- See <http://www.ipo.gov.uk/>

COM6655 PROFESSIONAL ISSUES

SLIDE 9

Who acquires copyright?

- “In the case of **literary, dramatic, musical or artistic works**, the author or creator of the work is usually the first owner of any copyright in it. The joint authors and first owners of copyright in a **film** are the principal director and the film producer. However, there is an exception where such works are made by employees.
- “The author and first owner of copyright in a **sound recording** is the record producer. The author and first owner of the copyright in a **broadcast** is the broadcaster. The author and first owner of the copyright in a **published edition** is the publisher.
- “Copyright in material produced by a **government department** belongs to the Crown.”

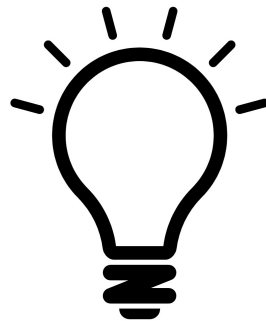
<https://www.gov.uk/guidance/ownership-of-copyright-works>

COM6655 PROFESSIONAL ISSUES

SLIDE 10

Protection of ideas

- The **law of confidence** is a useful supplement to copyright and patent law since it protects ideas before they are sufficiently developed to enable copyrighting or patenting.
- Since the law of confidence is based on common law, it is flexible and has been able to keep pace with advancing technology.

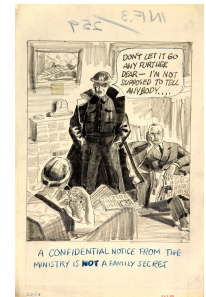


COM6655 PROFESSIONAL ISSUES

SLIDE 11

The law of confidence

- The law of confidence protects information (trade secrets, business data, ideas not expressed physically).
- Copyright and patent law are defined by statute, but the law of confidence is defined by common law.
- The limitation of the law of confidence is that the information must be confidential and not in the public domain.



National Archives, Kew: INF 3/259

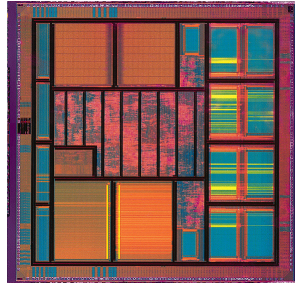
COM6655 PROFESSIONAL ISSUES

SLIDE 12

Law relating to designs

- Design rights are granted by statute.
- They might be appropriate for protecting the design of items such as an ergonomic mouse.
- Silicon chips are protected by the Design Right (Semiconductor Topographies) Regulations 1989.
<http://www.legislation.gov.uk/uksi/1989/1100/contents/made>

By Unknown - Unknown, original uploader on English Wikipedia was User:PeterjohnBishop, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=1340494>



COM6655 PROFESSIONAL ISSUES

SLIDE 13

Trade marks

- Many trade marks in the computer industry, e.g. the phrase 'Microsoft Word' and the Apple logo.
- May be registered under the Trade Marks Act 1994. As amended by the Trade Marks Regulations 2018, a trade mark is a sign which is capable:
 - "... of distinguishing goods or services of one undertaking from those of other undertakings."
 - "consists of words (including personal names), designs, letters, numerals, colours, sounds or the shape of goods or their packaging."
- **Q. Why are trade marks important?**

COM6655 PROFESSIONAL ISSUES

SLIDE 14

Apple Computer Inc. vs. Apple Corps (1989-2006)

- A famous long-running dispute between Apple Computers and Apple Records over the use of the apple logo.
- Good example of how trademark disputes can evolve as companies change focus.



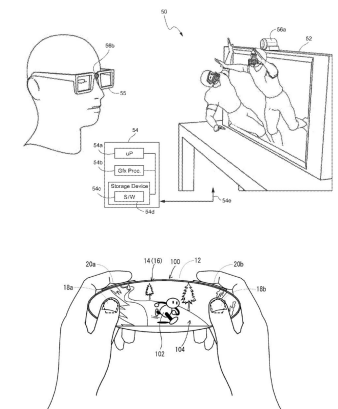
Images used as trade marks by Apple Corp. (left) and Apple Inc. (right).

COM6655 PROFESSIONAL ISSUES

SLIDE 15

Patent law

- Patents give the owner the exclusive right in an invention (such as a new type of computer hardware).
- Seen as a useful form of intellectual property since the owner has a monopoly in an invention for several years.



COM6655 PROFESSIONAL ISSUES

SLIDE 17

Acquiring a patent

- Applications are handled by the **Intellectual Property Office**.
- The European Patent Convention and other treaties provide for international patent protection.
- If a patent is granted, it can be held for up to 20 years.

3. Patent applications

Form no.	Title	Cost	Latest revision date
1	Request for grant of a patent	No fee immediately due; application fee £90	August 2021
AP1	Pay your application fee	£112.50	August 2021
2	Initiation of proceedings before the Comptroller	£50	August 2021
3	Late additions and declarations of priority	£150: Late declaration under rule 7(2) £40: Late claim under rule 6(2)	August 2021
4	Continuation of proceedings before the Comptroller	£350	August 2021
7	Statement of Invention and of right to grant of a patent	No fee	August 2021
8	Request for authorisation of the release of sample biological material	No fee	December 2020
8A	Notice of intention to restrict samples of biological material	No fee	May 2018
9A	Request a search: International applications only	£150 + £20 for each claim over 25	August 2021
9A	Request a search for a UK application	£180 + £20 for each claim over 25 + £112.50 application fee if not already paid	August 2021
9A	Request a further or supplementary search under section 12(3) or section 12(4)	£180	August 2021
10	Request for a substantive examination	£130 + £10 for each page of description over 35	August 2021

What can be patented?

- The invention must be **new**, **involve an inventive step** and must be **capable of industrial application**.
- Protected inventions may be a **product** (e.g., a new kind of storage device) or a **process** (e.g., a new way of manufacturing printed circuit boards).
- Most things directly protected by copyright are **excluded** from patentability.
- Patent Law is implemented by the Patents Act 1977. It was amended (but not replaced) by the Patents Act 2004.

Non-fungible tokens (NFTs)

- Fungibility is a legal concept relating to the ability of an asset to be exchanged with another asset of the same type.
- Non-fungible tokens (NFTs) are digital certificates stored in a decentralized ledger (blockchain).
- NFT records ownership of a particular digital asset; contains a unique identifier that points to the storage location of the asset.
- Most NFTs do not involve transfer of copyright.
- Like a collectible card – there is value in owning/trading the card but you do not own the copyright in it.

Copyright of computer software

Copyright of Computer Software

- Until 1985, it was uncertain whether computer programs were protected by copyright in the UK.
- The view of the courts was that source code listings of computer programs were protected by copyright because they resembled written English.
- **Q. But what about object code, computer files and databases?**

COM6655 PROFESSIONAL ISSUES

SLIDE 22

Apple v Computer Edge (1983)

- Computer Edge Pty Ltd imported “Wombats” into Australia:
 - They were compatible with the Apple operating system
 - Apple claimed infringement of two Apple programs
- Initial decision (Australian courts):
 - Neither source code nor object code could be defined as literary works, so no infringement had occurred
- On appeal (Federal Court of Australia):
 - The Apple programs were indeed literary works
 - The Apple ROM chips in the Wombat were derived works
- On appeal (High Court of Australia, 1986):
 - Machine-readable works are not literary works under the 1968 Copyright Act.

COM6655 PROFESSIONAL ISSUES

SLIDE 23

Capture a Bigger Market Share with the Better Wombat
The First to Win Against Apple!

Wombat 48
*Works with all software that equates to the professional version

Wombat Professional
*Full, standard version, optional disc drive

Finally, even the court has decided that Wombat is the original we've created it to be. With a program in source code that's fully compatible with computer programs run in Applesoft. The real difference is the enhanced original firmware that operates with the HKE 65SC02 chip, designed and manufactured completely in-house by Hua Ko Electronics Ltd., to feature remarkably low power consumption and speedier operation. Add to that our down-to-earth prices, and you've got yourself the computer with the leading edge. Why not trade up for profitable sales and ask for more information today?

Apple and Applesoft are trademarks of Apple Computer Inc.

Hong Kong Sales Office:
C T C Computer Technologies Corporation
42-44 Man King Building, 1/F., Jordan Road, Ferry Point, Kowloon, Hong Kong.
Tel: 3-881811, 3-885807, 3-321238. Telex: 51889 CMGW HX.
Licensed under: Computer Edge (Australia) Pty Ltd.

Apple and Applesoft are trademarks of Apple Computer Inc.
Hong Kong Sales Office:
C T C Computer Technologies Corporation
42-44 Man King Building, 1/F., Jordan Road, Ferry Point, Kowloon, Hong Kong.
Tel: 3-881811, 3-885807, 3-321238. Telex: 51889 CMGW HX.
Licensed under: Computer Edge (Australia) Pty Ltd.

COM6655 PROFESSIONAL ISSUES

SLIDE 25

Current situation

- Software copyright is now covered by the **Copyright, Designs and Patents Act 1988 (CDPA)**.
- The CDPA has itself been amended by regulations concerning the backup, decompilation and error correction of computer programs.
- <http://www.legislation.gov.uk/ukpga/1988/48/introduction>

Changes over time for Section 1

Changes to legislation: Copyright, Designs and Patents Act 1988, Section 1 is up to date with all changes incorporated as at 01 October 2013. There are changes that may be brought into force at a future date. Changes that have been made appear in the content and are referenced with annotations. [View outstanding changes](#)

1 Literary, dramatic and musical works.

(1) In this Part—
“literary work” means any work, other than a dramatic or musical work, which is written, spoken or sung, and accordingly includes—
(a) a letter or correspondence, **[F1] a text message or a program;** **F2**
(b) a computer program; **F3 [F4] a proprietary design material for a computer program;** **F5**
(c) a database;
“dramatic work” includes a work of dance or mime; and
“musical work” includes a work consisting of music, exclusive of any words or action intended to be sung, spoken or performed with the music.

(2) Copyright does not subsist in a literary, dramatic, or musical work unless and until it is recorded, in writing or otherwise, and subsists in that form at the time at which such a work is made and to the time at which it is recorded.

(3) It is immaterial for the purposes of subsection (2) whether the work is recorded by or with the permission of the author, and whether it is so recorded by the author, or by a person acting in the author's name, or by a person acting in the author's name, or by a person acting in the author's name.

Technical Amendments

F1 Words in s. 1(1)(a) inserted (1.10.1988 by S.I. 1988/1032, reg. 4(4) (para. 1)).

F2 Words in s. 1(1)(a) inserted (1.10.1988 by S.I. 1988/1032, reg. 4).

F3 Words in s. 1(1)(a) inserted (1.10.1988 by S.I. 1988/1032, reg. 4(4) (para. 1)).

F4 Words in s. 1(1)(a) inserted (1.10.1988 by S.I. 1988/1032, reg. 4).

F5 S. 1(1)(a) and word preceding it inserted (1.1.1988 by S.I. 1987/1032, reg. 4(4) (para. 1)).

COM6655 PROFESSIONAL ISSUES

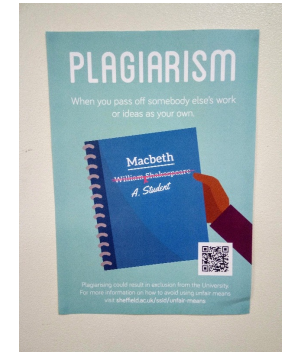
SLIDE 26

The Copyright, Designs and Patents Act 1988

- The CDPA provides copyright for the following:
 - original literary, dramatic, musical or artistic works,
 - sound recordings, films, broadcasts, cable programmes
 - the typographical arrangement of published editions
 - + later additions, e.g. communications to the public
- The **owner** of the copyrighted work is given the exclusive right:
 - to copy the work
 - to issue copies of the work to the public (including rental of copies of sound recordings, films and computer programs to the public)
 - to perform, show or play the work in public
 - to broadcast the work or include it in a cable programme service
 - to make an adaptation of the work or do any of the above in relation to an adaptation.

Infringement of copyright

- A person **infringes** copyright if they do a restricted act or authorise another to do a restricted act without the permission of the copyright owner.
- **Exceptions** to infringement relating to computer programs have been introduced by the Copyright (Computer Programs) Regulations 1992.



Remedies for copyright infringement

- **Injunction**
 - a court order requiring the defendant to do something or refrain from doing something e.g. stop selling unauthorised copies of a computer program.
- **Damages**
 - copyright damages are assessed as the estimated loss resulting from the infringement.
- **Additional damages**
 - when the copyright owner has suffered damage to reputation or feelings as well as purely financial loss.
- **Criminal penalties for 'secondary infringements'**
 - e.g., commercial dealing in pirated software.

Authorship and ownership

- The initial owner of copyright in a work is the author of the work, **except** when the work is made by an employee in the course of their employment, in which case **the employer will be the owner unless otherwise agreed**.
- Because copyright can be sold, other people can subsequently become the copyright owner.
- The CDPA distinguishes between two types of work produced using a computer – those generated by a **human** author and **computer-generated** works.
- **Q. The term 'computer' is not defined in the CDPA. Should it be?**

Types of work under the CDPA

- Computer programs created by a **human author** are protected as form of 'literary work'.
- Copyright in a literary work (including computer programs) expires **70 years** after the year in which the author dies.
- A **computer-generated work** is one which is 'generated by a computer in circumstances such that there is no human author'.
- Computer output such as printed reports are protected by copyright as literary or artistic works.
- Copyright in computer-generated works expires **50 years** after the work was created.

Who is the author?

- The **author** of a computer-generated work is the person *by whom the arrangements necessary for the creation of the work are undertaken*.
- **Q. If a business has a computer system which automatically generates financial reports without any human intervention, who is the author?**

Summary

- Intellectual property (IP) concerns legal rights that protect creative works, inventions and intangible assets of a business.
- Various areas of law protect IP, including copyright, the law of confidence, patents, design rights, trade marks.
- The CDPA gives the owner rights to copy, adapt, perform, broadcast a creative work.
- Computer software is protected under the CDPA as a literary work.
- Unusually the CDPA allows for the notion of a computer-generated work.