

Chapter 6. Intellectual property

“If you gaze long into an abyss, the abyss will gaze back into you”.

Friedrich Wilhelm Nietzsche

- ▶ The Intellectual Property Law
 - ▶ Berne Convention
 - ▶ Authors' rights
 - ▶ Authors' rights vs. Copyright
 - ▶ Private copying vs. Backup copy
- ▶ Software: a particular case
 - ▶ Software licenses
 - ▶ Free software
 - ▶ Software patents
- ▶ Internet copyright infringement



Intellectual property



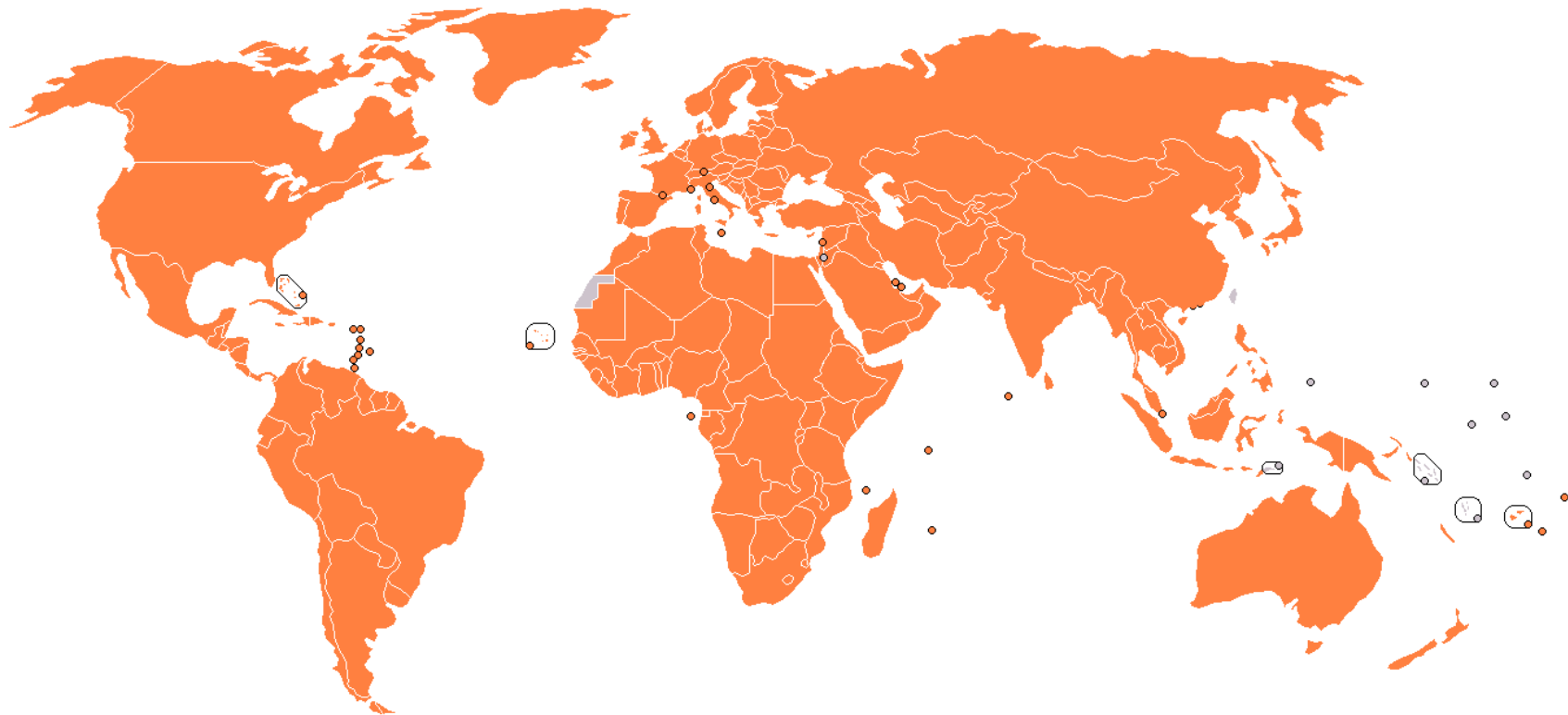
- ▶ Information Technology (IT) facilitates the distribution, copy and / or manipulation of digital works. However this should be implemented in compliance with laws regulating **intellectual property rights**.
- ▶ Affected people
 - ▶ Authors of literary, photographic, cinematographic or musical works
 - ▶ Also computer engineers, particularly **software authors and / or database creators**
- ▶ But the law does not reach all the cases and many times we must rely on **good business practices and codes of conduct**.

Starting point

- ▶ **Berne Convention for the Protection of Literary and Artistic Works**
 - ▶ International agreement governing **copyright**, which was first accepted in Bern, Switzerland in 1886
 - ▶ Before the Berne Convention, national copyright laws usually only applied for works created within each country.
 - ▶ The Berne Convention set up a bureau to handle administrative tasks. In 1967, it became the **World Intellectual Property Organization** (WIPO), and in 1974 became an organization within the United Nations.

Berne Convention

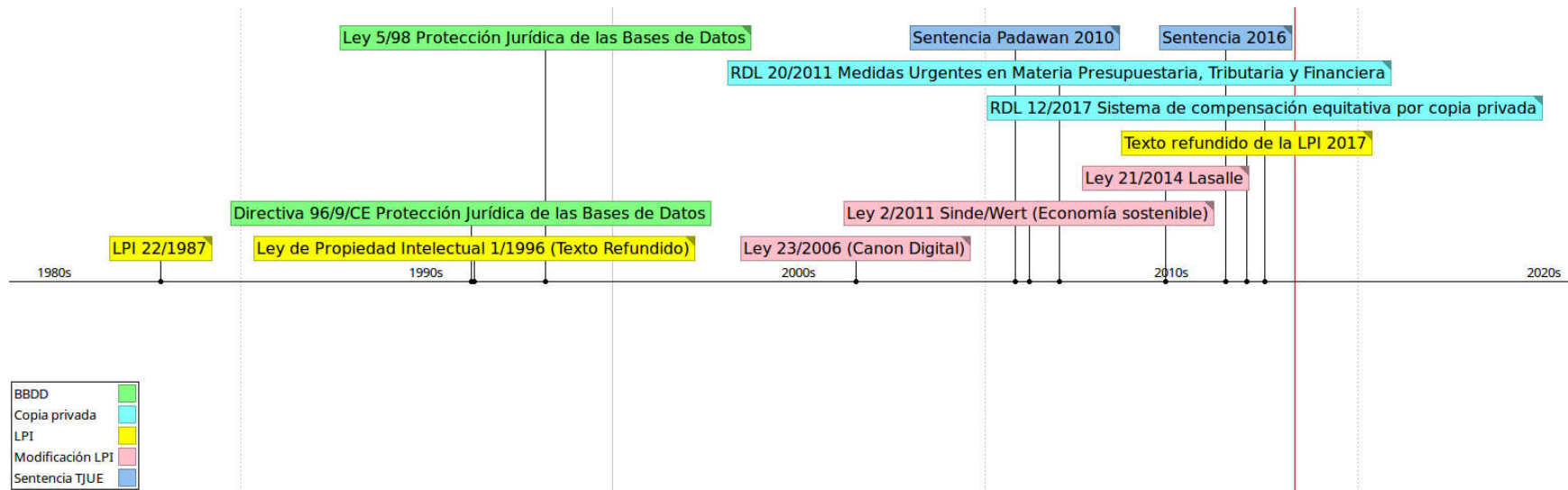
- Blue: Signatories of the **Berne Convention for the Protection of Literary and Artistic Works**
- Orange: Members of the **World Intellectual Property Organization**



In Spain

- ▶ The copyright of authors resident in Spain, or in any other signatory country of the Berne Convention or member country of the World Trade Organization (WTO) bound by the provisions of the TRIPS (**Trade-Related Aspects of Intellectual Property Rights**) Agreement, will be **automatically protected in all countries** that have signed the Convention or that are members of the WTO.
- ▶ In Spain the main law regulating copyright protection is the **1996 Intellectual Property Law**.

Timeline



In Europe

- ▶ Copyright Directive 2001/29/EC
- ▶ Directive on Copyright in the Digital Single Market (2019)
 - ▶ Press publication right
 - ▶ Increased liability for platforms

Intellectual Property Law

- ▶ The subject matter of intellectual property includes all **original literary, artistic or scientific productions** expressed in any mode or form, whether tangible or intangible, known at present or that may be invented in the future, including the following:
 - ▶ **i) Computer programs;**
- ▶ These exclusive rights allow owners of intellectual property to benefit from the property they have created, **providing a financial incentive for the creation of an investment in intellectual property.**



Originating fact

- ▶ The intellectual property of a literary, artistic or scientific work belongs to its author **due to the mere fact of its creation.**
- ▶ **Scope**
 - ▶ Intellectual property encompasses **rights of personal and economic character** giving the author full control over and the exclusive right to the exploitation of the work, without any limitation whatsoever other than those specified by law.

Authors' rights

- ▶ **Moral rights**
 - ▶ Rights which cannot be waived or assigned
- ▶ **Exploitation rights or economic rights**
 - ▶ The exploitation rights in the work may be assigned by inter vivos transfer, the **assignment** being limited to the right or rights assigned, to the means of exploitation expressly provided for and the time and territorial scope specified.

Intellectual Property Register

- ▶ Through its Sub-Directorate-General for Intellectual Property, the **Ministry of Culture** is the Spanish body in charge of proposing the measures needed to adequately protect intellectual property.
- ▶ As copyright is automatically protected in Spain, authors do not have to register their work in order to assert their rights. However, there is an **Intellectual Property Register** in Spain, which can be used on an entirely voluntary basis.

Moral rights



- ▶ 1. The right to decide whether his work is to be made **available to the public**, and if so **in what form**;
- ▶ 2. The right to determine whether such communication should be effected **in his name, under a pseudonym or sign or anonymously**;
- ▶ 3. The right to claim **authorship of the work**;
- ▶ 4. The right to demand **respect for the integrity of the work** and to object to any distortion, modification or alteration of it or any act in relation to it that may be prejudicial to his legitimate interests or to his reputation;

Moral rights



- ▶ 5. The right to **alter the work** subject to respect for the acquired rights of third parties and the protection requirements of goods of cultural interest;
- ▶ 6. The right to **withdraw the work from circulation** due to changes in his intellectual or ethical convictions, after paying damages to the holders of the exploitation rights.
- ▶ If the author later decides to resume exploitation of his work, he shall give preference, when offering the relevant rights, to the previous holder thereof, and shall offer terms reasonably similar to the original terms;



Moral rights

- ▶ 7. The right of **access to the sole or a rare copy of the work**, when it is in another person's possession, to exercise the right of communication or any other applicable right.
- ▶ The aforesaid right does not allow the author to demand the work to be moved, and access to it must be in the place and manner that cause the least inconvenience to the holder, who will be indemnified, where appropriate, for any damages caused.

Exploitation rights

- ▶ Exclusive rights of exploitation and forms of exploitation
- ▶ Authors hold exclusive exercise of the right to exploit their work in any form and especially the rights of:
 - ▶ Reproduction
 - ▶ Distribution
 - ▶ Communication to the public
 - ▶ Alteration
- ▶ These rights may not be exercised without their authorization, except where this Act allows it.



Duration and calculation

- ▶ The exploitation rights in the work shall run for the life of the author and for seventy years after his or her actual or declared death.
- ▶ As in the rest of the European Union, **copyright** applies for the author's lifetime and, as a general rule, for 70 years after his or her death.

Authors' rights vs. Copyright

- ▶ Author's rights (*droit d'auteur*) contrasts with the **Anglo-Saxon** concept of "copyright" which only dealt with economic concerns.
- ▶ Copyright basics



Copyright

- ▶ The copyright notice consists of:
 - ▶ The © symbol, or the word "Copyright" or abbreviation "Copr.";
 - ▶ The year of first publication of the copyrighted work;
 - ▶ An identification of the owner of the copyright, either by name, abbreviation, or other designation by which it is generally known.
- ▶ e.g. : © 2011 John Smith



Private copy exception

- ▶ A directive of the European Union allows its member nations to include in their legal framework this **private copy exception** to the authors' and editors' rights.
- ▶ If a member State chooses to do so, it must also introduce **compensation for the copyright holders**.
- ▶ Compensation takes the form of a **levy excised on all the machines and blank materials** capable of copying copyrighted works.



Right to equitable remuneration for private copying



- ▶ **Reproduction carried out exclusively for private use**, by means of non-typographical technical apparatus or instruments, of works publicly exploited in the form of books or publications assimilated thereto by regulation for those purposes, and also in the form of phonograms, videograms or other sound, visual or audiovisual media, **shall give rise to a single equitable remuneration** for each of the three forms of reproduction mentioned, payable to the persons specified in Subparagraph (b) of Paragraph (4) of this Article and **intended to compensate for the intellectual property royalties** that are not received on account of the said reproduction.

Private copying vs. Backup copy

- ▶ In **Spain**, anyone was allowed to make a private copy of a copyrighted material for their own use and the source copy does not even have to be legal.
- ▶ Making copies for other people, however, is forbidden if done for profit.
- ▶ Private copying is not applicable to electronic databases and to computer programs.
 - ▶ A backup copy is allowed providing that the copier has accessed the original material legally.



Collections. Databases



- ▶ Intellectual property also subsists, as provided in Book I of this Act, in **collections of the works of others, or of data or other independent elements, such as anthologies and databases**, which, by reason of the selection or arrangement of their contents, constitute intellectual creations, without affecting any rights that might subsist in the said contents.
- ▶ The protection given to such collections under this Article **relates solely to their structure**, meaning the form of expression of the selection or arrangement of their contents, but **does not extend to those contents**.

Software: a particular case



Computer programs

- ▶ The Copyright Act includes computer programs as objects of protection.
- ▶ Computer programs whose purpose is to cause harm (e.g. **computer virus**) are not eligible for protection.



Authorship

- ▶ The protection granted to the author by this Act may be enjoyed by **legal persons** in the following cases:
 - ▶ Works of joint authorship
 - ▶ Collective works
 - ▶ Composite works

```
struct group_info init_groups = { .usage = ATOMIC_INIT(2) };
struct group_info *groups_alloc(int gidsetsize) {
    struct group_info *group_info;
    int nblocks;
    int i;

    nblocks = (gidsetsize + NGROUPS_PER_BLOCK - 1) / NGROUPS_PER_BLOCK;
    /* Make sure we always allocate at least one indirect block pointer */
    nblocks = nblocks ? : 1;
    group_info = kmalloc(sizeof(*group_info) + nblocks*sizeof(gid_t *), GFP_USER);
    if (!group_info)
        return NULL;
    group_info->ngroups = gidsetsize;
    group_info->nblocks = nblocks;
    atomic_set(&group_info->usage, 1);

    if (gidsetsize <= NGROUPS_SMALL)
        group_info->blocks[0] = group_info->small_block;
    else {
        for (i = 0; i < nblocks; i++) {
            gid_t *b;
            b = (void *)__get_free_page(GFP_USER);
            if (!b)
                goto out_undo_par
```



Works of joint authorship

- ▶ The rights in a work that is the **unitary result of the collaboration of two or more authors** belong to all of them.
- ▶ The intellectual property rights in a work of joint authorship belong to all the authors **in the proportions determined by them**.
- ▶ In the absence of provisions in this Act, the rules laid down in the Spanish Civil Code on joint ownership apply to such works.

Collective works



- ▶ A work is called a collective work if it is created **on the initiative and under the direction of an individual or legal person**, who edits it and publishes it under his name, and where it consists of the **combination of contributions by various authors** whose personal contributions are so integrated **in the single, autonomous creation** for which they have been conceived that it is not possible to ascribe to any one of them a separate right in the whole work.
- ▶ In the absence of agreement to the contrary, the rights in the collective work will belong to the **person who publishes it and discloses it in his name**.

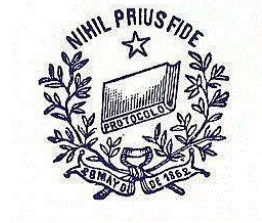


Composite works

- ▶ Composite work
 - ▶ A new work that incorporates a **pre-existing work without the collaboration of the author** of the latter is regarded as a composite work, subject to the rights accruing to the latter and to his or her due license.
- ▶ Independent work
 - ▶ A work that constitutes an **autonomous creation**, even if published in conjunction with other works, is regarded as an independent work.



Software protection



- ▶ Program source code, which can be likened to an intellectual work, can be entered in the Intellectual Property Register.
 - ▶ The register has **evidentiary effects of authorship** and ownership of the work as well as **advertising effects**.
- ▶ An alternative non-exclusive measure would be the software escrow.



Software licenses

- ▶ The owner of proprietary software exercises certain exclusive rights over this software. The owner can restrict use, inspection or modification of source code, and redistribution.
- ▶ In the proprietary software industry, an **end-user license agreement** or **software license agreement** is the contract between the licensor and purchaser, establishing the purchaser's right to use the software.

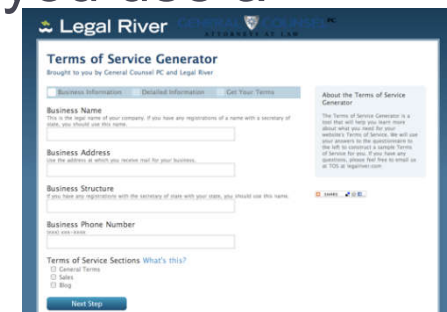
End User License Agreement

- ▶ Many form contracts are only contained in digital form, and only presented to a user as a **click-through** where the user must "accept" the software.
- ▶ EULAlizer or EULA Analyzer software



Software licenses vs. Terms of service

- ▶ **Terms of service** (commonly abbreviated as **ToS** or **TOS** and also known as **Terms of Use**, **Terms & Conditions**) are rules which one must agree to abide by in order to use a service.
- ▶ Terms of Service can also be referred to as **Terms of Use** or sometimes merely a **Disclaimer**, especially regarding the use of websites.
- ▶ ToS and EULA are for different things:
 - ▶ ToS are policies that you agree to when you use a service (ISP, gym membership, etc).
 - ▶ Cloud computing





Free software

- ▶ “Free software” is a matter of *liberty*, not price.
- ▶ Free versus Open Source Software





Four essential freedoms

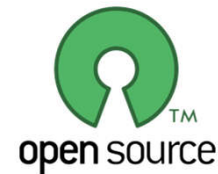
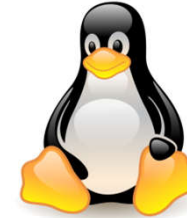
- ▶ A program is free software if the program's users have four essential freedoms:
 - ▶ The freedom to run the program, for any purpose (freedom 0)
 - ▶ The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1)
 - ▶ Access to the source code is a precondition for this.
 - ▶ The freedom to redistribute copies so you can help your neighbor (freedom 2)
 - ▶ The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes.
 - ▶ Access to the source code is a precondition for this.

Freeware

- ▶ Software available for zero price, but not necessarily with the right to modify and redistribute it
- ▶ Popular examples of closed-source freeware include **Adobe reader** and **Skype**.



History of free software



History of Linux



Different types of licenses

- ▶ The differences are not very relevant for the end user, but they can be very relevant for developers and redistributors.
- ▶ Public domain software
 - ▶ The copyright has expired
 - ▶ The work was not copyrighted
 - ▶ The author has released the software onto the public domain (in countries where this is possible)
- ▶ Copyleft ☯
- ▶ Weak copyleft
- ▶ Copyfree ®



Copyleft

- ▶ The author retains copyright and permits redistribution under the restriction that all such redistribution is licensed under the same license.
- ▶ The **GNU General Public License** is the most well-known example.
- ▶ Copyleft concept

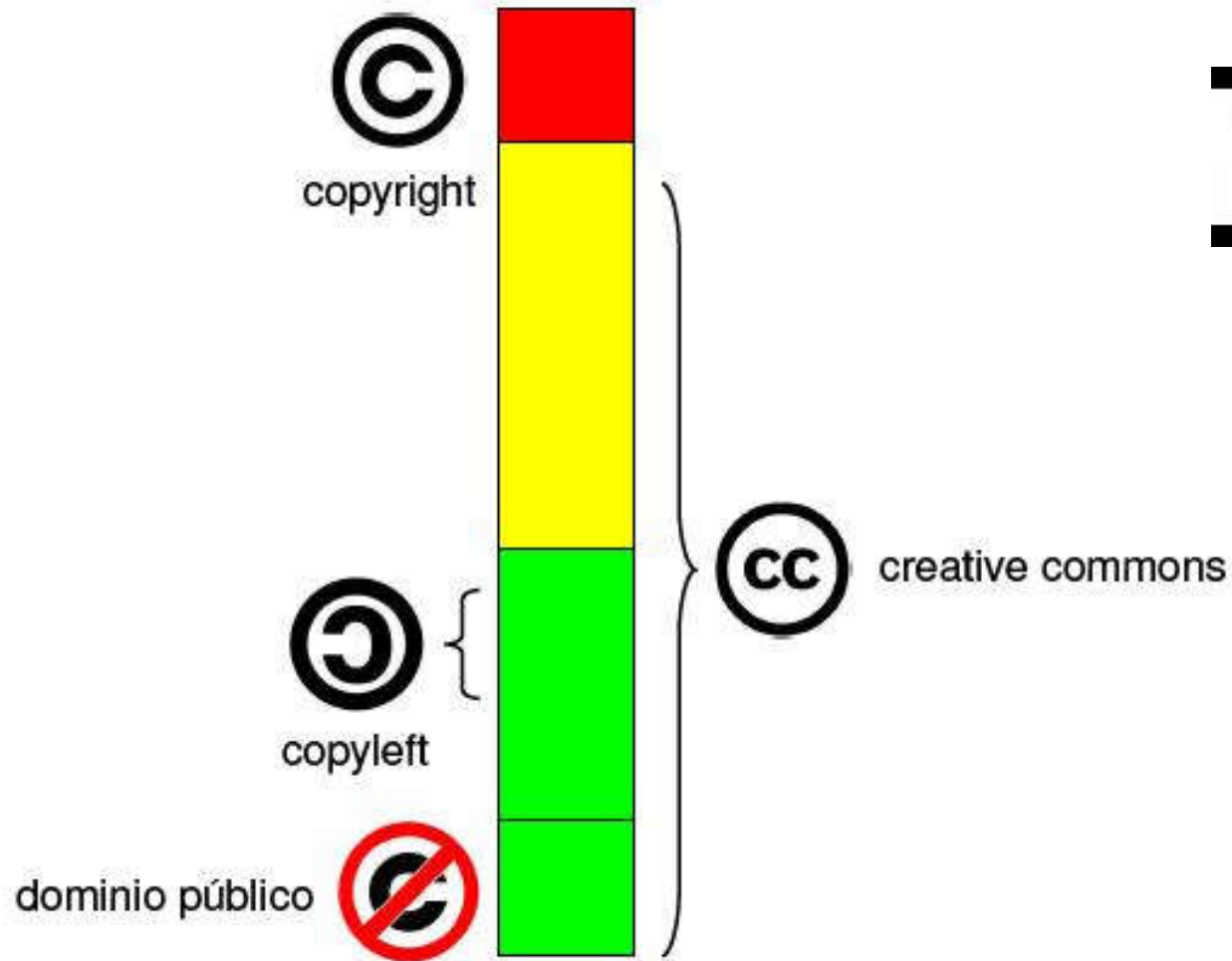




Copyleft

- ▶ Additions and modifications by others must also be licensed under the same "copyleft" license whenever they are distributed with part of the original licensed product.
- ▶ This is also known as a **Viral license**. Due to the restriction on distribution not everyone considers this type of license to be free.
- ▶ Copyleft licensing places more requirement in terms of distribution and combination with software under other licenses.

Creative Commons



Weak copyleft



- ▶ The strength of the copyleft governing a work is an expression of the extent that the copyleft provisions can be efficiently imposed on all kinds of derived works.
- ▶ Refers to licenses where not all derived works inherit the copyleft license;
- ▶ Generally used for the creation of **software libraries**, to allow other software to link to the library, and then be redistributed without the legal requirement for the work to be distributed under the library's copyleft license.



Weak copyleft

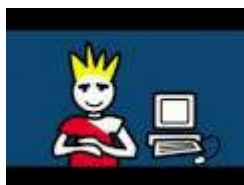
- ▶ This allows programs of any license to be compiled and linked against copylefted libraries such as **glibc** (the **GNU project**'s implementation of the **C standard library**), and then redistributed without any re-licensing required.
- ▶ Well-known examples
 - ▶ The GNU Lesser General Public License
 - ▶ The Mozilla Public License

Permissive licenses

- ▶ The author retains copyright solely to disclaim warranty and require proper attribution of modified works, and permits redistribution and **any** modification, even closed source ones.
 - ▶ Also called BSD-style because they are applied to much of the software distributed with the **BSD** operating systems
 - ▶ Also known as copyfree as they have no restrictions on distribution
- ▶ Well-known examples
 - ▶ The MIT License
 - ▶ The BSD licenses

Threats to free software

- ▶ Software patents



Industrial property

- ▶ With regard to **industrial property**, no single law covers all aspects. Instead, this is regulated by a package of laws, including the following:
 - ▶ Patent Law
 - ▶ Trade Mark Law
 - ▶ Law on Legal Protection of Industrial Designs
- ▶ The only body in Spain with the authority to grant patents and trade marks is the **Spanish Patents and Trade Marks Office** (Oficina Española de Patentes y Marcas - OEPM), which comes under the control of the Ministry of Industry, Tourism and Trade.

European patents

- ▶ **Patentable inventions**
- ▶ European patents are granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application.
- ▶ The following in particular are not be regarded as inventions:
 - ▶ (a) discoveries, scientific theories and mathematical methods;
 - ▶ (b) aesthetic creations;
 - ▶ (c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
 - ▶ (d) presentations of information.

What is a Patent?

- ▶ A patent is an exclusive right granted for an invention, a product or process that provides a new way of doing something, or that offers a new technical solution to a problem. For an invention to be patentable it must:
 - ▶ **Be novel** - it does not form part of “prior art”
 - ▶ **Involve an inventive step** not obvious to a skilled person in the field
 - ▶ **Have an industrial application** - it can be used in some kind of industry
- ▶ A patent provides patent owners with protection for their inventions. Protection is granted for a limited period, generally 20 years if maintenance fees are paid.

IP: Intellectual and Industrial Property

- ▶ Intellectual and Industrial Property, **better known as IP**, refer to creations of the mind: inventions; literary and artistic works; and symbols, names and images used in commerce.
- ▶ IP is divided into two categories:
 - ▶ **Industrial property**, which includes inventions (patents), trademarks, industrial designs, and geographic indications of source;
 - ▶ and **Copyright**, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs.

Internet copyright infringement

- ▶ Downloading in the Internet
- ▶ Stop Online Piracy Act (SOPA)
 - ▶ Megaupload Trial & SOPA
- ▶ Computer havens



Exercise



- ▶ Research one of the following topics:
 - ▶ Directive on Copyright in the Digital Single Market
 - ▶ Software escrow vs. register for protecting Intellectual Property Rights
 - ▶ EULAlizer or EULA Analyzer software
 - ▶ History of free software
 - ▶ Justification of free software and its enlightenment
 - ▶ Free software vs. open-source software
 - ▶ Is the technical superiority of free and open source software proven?
 - ▶ Non-technical superiority of free software
 - ▶ The future of free software

Exercise



- ▶ Research one of the following topics:
 - ▶ History of Linux
 - ▶ Threats to free software
 - ▶ **Creative Commons licenses**
 - ▶ Intellectual property vs. industrial property
 - ▶ History of software patents
 - ▶ **Why protect software through patents?**
 - ▶ Situation of software patents in Europe
 - ▶ Downloading in the Internet
 - ▶ Stop Online Piracy Act (SOPA)
 - ▶ **Data havens**