

Requirement 4. Intellectual Property.

Do the following:

4(a): Explain the four types of intellectual property used to protect computer programs.

1. Copyright

- **Purpose:** Protects the *expression* of ideas, not the ideas themselves.
 - **What it covers in computer programs:**
 - The source code and object code
 - Documentation and user interfaces (to some extent)
 - **Key Features:**
 - Automatic upon creation (no registration required, though registration strengthens enforcement)
 - Lasts for the life of the author + 70 years (in most jurisdictions)
 - **Limitations:**
 - Does not protect the underlying ideas, algorithms, or functional aspects
-

2. Patent

- **Purpose:** Protects *inventions* — new and useful processes, machines, or methods.
 - **What it covers in computer programs:**
 - Innovative algorithms or methods (e.g., data processing, encryption techniques)
 - Software-based inventions that are novel and non-obvious
 - **Key Features:**
 - Must be applied for and granted by a patent office
 - Typically lasts 20 years from the filing date
 - **Limitations:**
 - Expensive and time-consuming to obtain
 - Not all jurisdictions are equally favorable to software patents
-

3. Trademark

- **Purpose:** Protects *brand identifiers* that distinguish goods or services.
 - **What it covers in computer programs:**
 - Software product names, logos, slogans (e.g., “Photoshop” or the Windows logo)
 - **Key Features:**
 - Prevents others from using confusingly similar marks
 - Can last indefinitely, as long as the trademark is used and renewed
 - **Limitations:**
 - Does not protect the program itself or its functionality
-

4. Trade Secret

- **Purpose:** Protects confidential business information that provides a competitive edge.
- **What it covers in computer programs:**

- Proprietary source code, algorithms, formulas, or internal development practices not publicly disclosed
- **Key Features:**
 - No registration required; protection lasts as long as secrecy is maintained
 - Often protected by contracts (e.g., NDAs or employee agreements)
- **Limitations:**
 - Once the secret is disclosed, protection is lost
 - Does not protect against reverse engineering (unless legally restricted)

4 (b) Describe the difference between licensing and owning software.

- **Licensing Software** means you are granted permission to use the software under specific terms and conditions set by the software creator or vendor. You do **not own** the software itself — only the right to use it in a certain way (e.g. number of users, duration, devices). Most commercial software is licensed, not sold outright.
- **Owning Software** (also known as purchasing with full rights or acquiring source code ownership) means you have full legal ownership of the software. This includes the right to use, modify, distribute, and resell it without restriction. This is rare and typically only happens with **custom-built** or **open-source** software (with permissive licenses).

Summary Table:

Aspect	Licensing	Owning
Rights	Limited usage rights	Full control and ownership
Modification	Usually not allowed	Allowed
Distribution	Restricted	Permitted (depending on terms)
Common Example	Microsoft Office (subscription)	Custom-built software for a company

In essence, **licensing is renting the right to use software**, while **owning is having full legal control over it**.

4 (c) Describe the differences between freeware, open source, and commercial software, and why it is important to respect the terms of use of each.

Freeware, open source, and commercial software are all types of computer programs, but they have different rules about how you can use them. **Freeware** means the software is free to use — you don't have to pay for it. But even though it's free, the person or company who made it still owns it, and you usually can't change how it works or share it as if it were your own. A good example is Zoom — you can download and use it for free, but you can't edit the code or sell it to someone else.

Open source software is also free, but with a big difference: the code behind the program is open for anyone to see, change, and share. This means people can work together to improve the software or customize it for

their own needs. For example, the web browser Firefox is open source. If you're into coding, you could learn from its code or even help make it better. But even with open source, there are still rules — some licenses require you to give credit or to keep your changes open for others too.

Commercial software is made to be sold — you usually have to pay for it, either once or through a subscription. Programs like Microsoft Office or Adobe Photoshop fall into this category. The creators expect to earn money from their work, and using it without paying (like pirating it) is illegal. It's important to respect the terms of use for all software because they protect the rights of the creators. Using software the wrong way can lead to legal trouble or viruses from shady downloads. Plus, if people don't follow the rules, it discourages creators from making great software in the future.

Open Source VS Commercial Software

<https://www.youtube.com/watch?v=SdW5pnha9kg>

<https://www.geeksforgeeks.org/software-engineering/difference-between-open-source-software-and-proprietary-software/>

Free VS Open Source Software

<https://www.youtube.com/watch?v=6-zAEjkIMZs>

<https://www.youtube.com/watch?v=Qyb5KZC7d6s>

<https://www.geeksforgeeks.org/software-engineering/difference-between-free-software-and-open-source-software/>