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1. <u>Describe Open Source Software with Example.</u>

The term open source refers to something people can modify and share because its design is publicly accessible.

Open source software is software with source code that anyone can inspect, modify, and enhance.

OSS is any computer software that's distributed with its source code available for modification. That means it usually includes a license for programmers to change the software in any way they choose: They can fix bugs, improve functions, or adapt the software to suit their own needs.

Open source software is released through a specific kind of license that makes its source code legally available to end-users. There are many such licenses, but typically software is considered open source if:

- It is available in source code form without additional cost, meaning users can view the code that comprises the software and make any kind of changes to it they want.
- The source code can be repurposed into other new software, meaning anyone can take the source code and distribute their own program from it.

This open source development model has resulted in some of the most important applications and cloud platforms in use today. The most popular of which comprise LAMP, a model of service stacks that undergird much of the web. The LAMP acronym stands for:

- Linux: an open source operating system (OS) and the largest open source project in the world
- Apache: an open source cross-platform web server that played a key role in the early web

- MySQL: an open source relational database management system used by many database-driven web apps
- PHP: a general purpose scripting language used in software development (Perl or Python languages are sometimes substituted)

2. Describe Free Software with Example

Free software is software that can be freely used, modified, and redistributed with only one restriction: any redistributed version of the software must be distributed with the original terms of free use, modification, and distribution (known as copyleft).

The definition of free software is stipulated as part of the GNU Project and by the Free Software Foundation. Free software may be packaged and distributed for a fee; the "free" refers to the ability to reuse it, modified or unmodified, as part of another software package. As part of the ability to modify, users of free software may also have access to and study the source code.

Free software is easily confused with freeware, a term describing software that can be freely downloaded and used but which may contain restrictions for modification and reuse.

"Free software" does not mean "noncommercial". On the contrary, a free program must be available for commercial use, commercial development, and commercial distribution. This policy is of fundamental importance—without this, free software could not achieve its aims.

The best known example of free software is Linux, an operating system that is proposed as an alternative to Windows or other proprietary operating systems.

3. Difference between Free and Open Source Software

Free Software

- The freedom to deploy the software for any use case without any restrictions. For example, saying that the license of a program expires after 30 days makes it non-free.
- The freedom to study how the software works and modify it according to your needs and preferences.
- The freedom to freely re-distribute the software to assist someone in need. The redistribution can be done at a cost or at no cost.
- The freedom to enhance the performance of the software and release your enhancements for the community to benefit—both programmers and non-programmers. You can do this at a cost or at no cost.

Open Source Software

- Free redistribution of the software.
- The source code should be publicly available.
- The software can be modified and distributed in a different format from the original software.
- The software should not discriminate against persons or groups.
- The software should not restrict the usage of other software.