PRACTICAL NO.3

Basic Understanding on Free and Open Source Software

a) Describe Open Source Software with Example.

Open-source software (**OSS**) is a type of computer software in which source code is released under a license in which the copyright holder grants users the rights to use, study, change, and distribute the software to anyone and for any purpose. Open-source software may be developed in a collaborative public manner. Open-source software is a prominent example of open collaboration.

Open-source software development can bring in diverse perspectives beyond those of a single company.

When an author contributes code to an open-source project (e.g., Apache.org) they do so under an explicit license (e.g., the Apache Contributor License Agreement) or an implicit license (e.g. the open-source license under which the project is already licensing code). Some open-source projects do not take contributed code under a license, but actually require joint assignment of the author's copyright in order to accept code contributions into the project.

Open-source software is usually easier to obtain than proprietary software, often resulting in increased use. Additionally, the availability of an open-source implementation of a standard can increase adoption of that standard. It has also helped to build developer loyalty as developers feel empowered and have a sense of ownership of the end product.

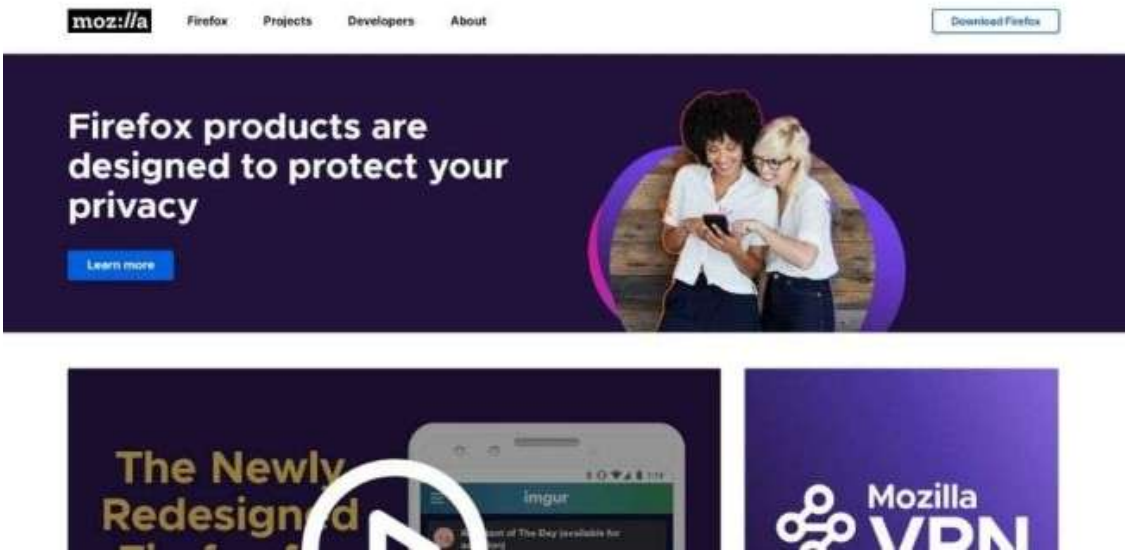
Moreover, lower costs of marketing and logistical services are needed for OSS. It is a good tool to promote a company's image, including its commercial products. The OSS development approach has helped produce reliable, high quality software quickly and inexpensively.

Open-source development offers the potential for a more flexible technology and quicker innovation.

1. Mozilla Firefox

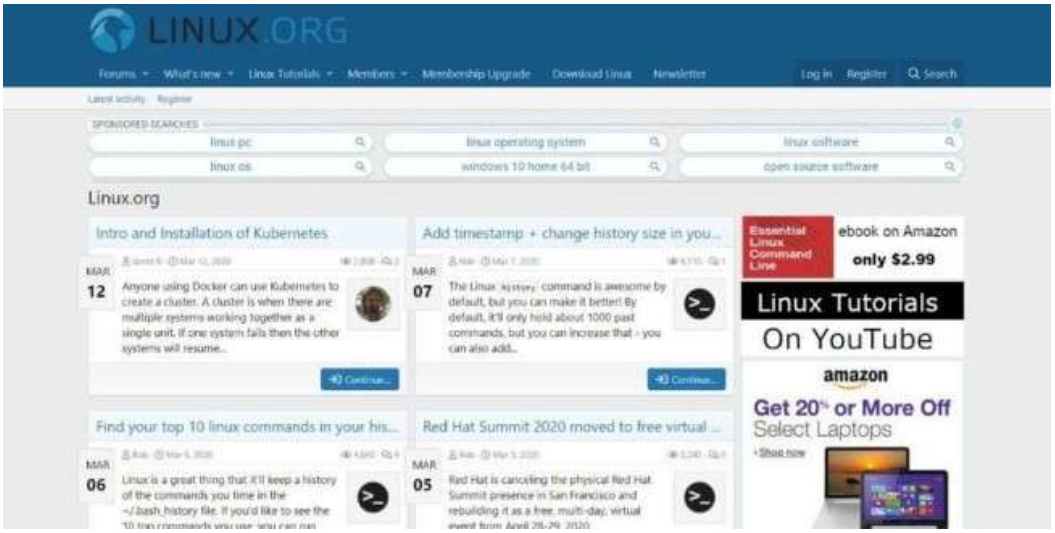
Mozilla Firefox is a customizable internet browser and a free open source software. It offers thousands of plugins that are accessible with a single click of your mouse. The platform holds 3.98% of the worldwide browser market share and it is available for Android, iOS , Windows and Linux. According to CNET,

Mozilla reshaped the technology industry and fanned the flames of open source software that changed the way social networks and operating systems function.



2. Linux

According to a Stack Overflow survey, 83.1% of developers claimed that Linux is the most wanted platform. Linux is one of the most user-friendly open source software on the market. It is most commonly used on Android devices and desktops. What makes this operating system different from the others is that it costs nothing and it is incredibly customizable. Most companies also choose it because it is highly secure and offers excellent community support.



b) Describe Free Source Software with Example.

Free software (or **libre software**) is computer software distributed under terms that allow users to run the software for any purpose as well as to study, change, and distribute it and any adapted versions. Free software is a matter of liberty, not price: all users are legally free to do what they want with their copies of a free software (including profiting from them) regardless of how much is paid to obtain the program. Computer programs are deemed "free" if they give end-users (not just the developer) ultimate control over the software and, subsequently, over their devices.

Four Essential Freedoms of Free Software

- Freedom 0: The freedom to *run* the program for any purpose.
- Freedom 1: The freedom to *study* how the program works, and change it to make it do what you wish.
- Freedom 2: The freedom to *redistribute* and make copies so you can help your neighbor .
- Freedom 3: The freedom to *improve* the program, and release your improvements (and modified versions in general) to the public, so that the whole community benefits.

There are thousands of free applications and many operating systems available on the Internet. Users can easily download and install those applications via a package manager that comes included with most Linux distributions.

The Free Software Directory maintains a large database of free-software packages. Some of the best-known examples include the Linux kernel, the BSD and Linux operating systems, the GNU Compiler Collection and C library; the MySQL relational database; the Apache web server; and the Sendmail mail transport agent. Other influential examples include the Emacs text editor; the GIMP raster drawing and image editor; the X Window System graphical-display system; the LibreOffice office suite; and the TeX and typesetting systems.

Creating a 3D car racing game using the Blender Game Engine.

Replicant smartphone, an Android-based system that is 100% free software.

c) Difference between Free and Open Source Software.

According to the Free software movement's leader, Richard Stallman, the main difference is that by choosing one term over the other (i.e. either "open source" or "free software") one lets others know about what one's goals are: "Open source is a development methodology; free software is a social movement." Nevertheless, there is significant overlap between open source software and free software.

The FSF said that the term "open source" fosters an ambiguity of a different kind such that it confuses the mere availability of the source with the freedom to use, modify, and redistribute it. On the other hand, the "free software" term was criticized for the ambiguity of the word "free" as "available at no cost", which was seen as discouraging for business adoption, and for the historical ambiguous usage of the term.

Developers have used the alternative terms *Free and Open Source Software* (FOSS), or *Free/Libre and Open Source Software* (FLOSS), consequently, to describe open-source software that is also free software. While the definition of open source software is very similar to the FSF's free software definition it was based on the Debian Free Software Guidelines, written and adapted primarily by Bruce Perens with input from Eric S. Raymond and others.

The term "open source" was originally intended to be trademarkable; however, the term was deemed too descriptive, so no trademark exists. The OSI would prefer that people treat open source as if it were a trademark, and use it only to describe software licensed under an OSI approved license.