Name:- Bhavin Nor
Roll no:- 54

PRACTICAL 3: BASIC UNDERSTANDING ON FREE AND OPEN-SOURCE SOFTWARE

a) Describe Open Source Software with Example.

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:

- o **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.
- o **The source code can be repurposed into other new software**, meaning anyone can take the source code and distribute their own program from it.
- o For instance, the source code for Red Hat® Enterprise Linux® is freely available to anyone, but converting that source code into runnable code requires expertise, time, and servers. When organizations want the production-ready code for Red Hat Enterprise Linux without having to reconstruct it themselves from source code, they obtain a subscription.

- o Open source software is also sometimes conflated with the free software movement, which can add to the confusion around whether open source means "free." The free software movement grew out of the hacker culture of the 1970s and was formally founded by Richard Stallman as part of the GNU Project and the non-profit Free Software Foundation. Usually, "free software" is meant to emphasize a freedom in the rights of end-users, but can sometimes be confused as meaning "free of cost."

- o LibreOffice and the GNU Image Manipulation **Program** are **examples** of **open source software**.

b) Describe Free Software with Example :-

"**Free software**" **means software** that respects users' **freedom** and community. Roughly, it **means** that the users have the **freedom** to run, copy, distribute, study, change and improve the **software**. ... With these freedoms, the users (both individually and collectively) control the **program** and what it does for them.

- o The right to study and modify a computer program entails that source code—the preferred format for making changes—be made available to

users of that program. While this is often called "access to source code" or "public availability", the Free Software Foundation recommends against thinking in those terms, because it might give the impression that users have an obligation (as opposed to a right) to give non-users a copy of the program.The Free Software Directory maintains a large database of free-software packages.

- o 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 LaTeX typesetting systems.

c) Difference between Free Software and Open Source Software:

Free Software:

"Free software" means software that respects users' freedom and community. Roughly, it means that the users have the freedom to run, copy, distribute, study, change and improve the software.

The term "free software" is sometimes misunderstood—it has nothing to do with price. It is about freedom.

Open Source Software :

Open Source Software is something which you can modify as per your needs, share with others without any licensing violation burden. When we say Open Source, source code of software is available publicly with Open Source licenses like GNU (GPL) which allows you to edit source code and distribute it. Read these licenses and you will realize that these licenses are created to help us.

S.No.	FS Philosophy	OSS Philosophy
1.	Software is an important part of people's lives.	Software is just software. There are no ethics associated directly to it.
2.	Software freedom translates to social freedom.	Ethics are to be associated to the people not to the software.
3.	Freedom is a value that is more important than any economical advantage.	Freedom is not an absolute concept. Freedom should be allowed, not imposed.
4.	Examples: 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.	Examples: Prime examples of open-source products are the Apache HTTP Server, the e-commerce platform osCommerce, internet browsers Mozilla Firefox and Chromium (the project where the vast majority of development of the freeware Google Chrome is done) and the full office suite LibreOffice.