# PRACTICAL 3:

# BASIC UNDERSTANDING ON FREE AND OPEN-SOURCE SOFTWARE

## a) Describe Open Source Software with Example.

**Open source software (OOS)** is software with source code that anyone can inspect, modify and enhance.

The term open source refers to something people can modify and share because its design is publicly accessible. The term originated in the context of software development to designate a specific approach to creating computer programs.

–Source code‖ is the part of the software that most computer users don't ever see; it's the code computer programmers can manipulate to change how a piece of software (a –program‖ or –application‖ ) works. Programmers who have access to a computer program's source code can improve that program by adding features to it or fixing parts that don't always works correctly.

Open source software is released through a specific kind of license that makes its source code legally available to end-users. The source code can be repurposed into other new software, meaning anyone can take source code and distribute their own program from it.

It includes ten-criteria, relating to matters such as:

- Software redistribution
- Source code availability and integrity
- Distribution and properties of licenses
- Derived works
- Anti-discrimination

## Below given are some examples of OPEN SOURCE SOFTWARE:

- Firefox – a web browser that competes with Internet Explorer
- OpenOffice - a competitor to Microsoft Office
- Gimp - a graphic tool with features found in Photoshop
- Zimbra – open source e-mail software that competes with Outlook server
- MySQL, Ingres and EnterpriseDB - open source database software packages that each go head-to-head with commercial products from Oracle, Microsoft, Sybase and IBM
- Free BSD and Sun's OpenSolaris - open source version of Unix operating system

## b) Describe Free Software with Example:

**Free Software** means software that respect users' freedom and community. Free 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.

Roughly, it means that the users have the freedom to run, copy, distribute, study, change, and improve the software. Thus, ―free software‖ is a matter of liberty, not price.

We campaign for these freedoms because everyone deserves them. With these freedoms, the users control the program and what it does for them. When users don't control the program, we call it a ―nonfree‖ program. The nonfree program controls the users and the developer controls the program.

Today, free software covers just about every field of computer applications. Because of their high quality and openness, several free software programs have become leaders in their field or comprise the core of of an entire industry.

A program is free software if the program's users have the four essential freedoms:

- The freedom to run the program as you wish , for any purpose.
- The freedom to study how the program works, and change it so it does your computing as you wish. Access to the source is a precondition for this.
- The freedom to redistribute copies so you can help others.
- The freedom to distribute copies of your modified versions to other. By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition to this.

## Below given are some examples of FREE SOFTWARE:

- The Linux kernel – Linux kernel is protected by the GPL, and is used daily by millions of people throughout the world. As the kernel, it is one of the most important components of the GNU system
- Apache, the most widely used web server in the world. More than 56% of the web servers on this planet use Apache; far more than its fierce competitors Microsoft and Netscape
- The Gimp is a powerful bitmap mode digital creation program. In spite of being relatively new, The Gimp has rapidly become serious competition for photoshop
- PostgreSQL is an object-relational database. It is currently the most sophisticated free software database available

## c) Difference between Free Software and Open Source Software:

| S.No. | Free Software | Open Source Software |
|---|---|---|
| **1.** | ―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.<br>The term ―free software‖ is sometimes misunderstood—it has nothing to do with price. It is about freedom. | 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 |
| **2.** | Software is an important part of people's lives. | Software is just software. There are no ethics associated directly to it. |
| **3.** | Software freedom translates to social freedom. | Ethics are to be associated to the people not to the software. |
| **4.** | Freedom is a value that is more important than any economical advantage. | Freedom is not an absolute concept. Freedom should be allowed, not imposed. |
| **5.** | 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. |