



CHAPTER- 2: OPEN SOURCE CONCEPTS

Open Source Software: Open Source Software can be freely used, changed, improved, copied and redistributed but it may have some cost for support and further development. Source Code is also available with OSS. It can be modified and redistributed with some guidelines of License.

FOSS/FLOSS: An OSS may come free of cost or with a payment of nominal charges that its developers may charge in the name of development and support of software. FLOSS (Free Libre and OSS) is both free software as well as OSS.

Proprietary software: Proprietary software is the software that is neither open nor free available. Its use requires special permission by the supplier or vendor. They must have some cost and Source code is also not given. It is the property of the developer organization. No change, copy and distribution is allowed.

Free software: Free Software are those which are freely accessible, freely used, changed, improved, copied and distributed. It provides all types of freedom. It has no cost and Source Code is also available with Free Software.

Free ware: Free ware is software which is available freely and can be copied and distributed but no modification is allowed as source code is not available.

Shareware: These software are freely used, copied and distributed for a certain period of time. After expiry, you have to purchase or uninstall them. Modification is not possible due to non-availability of the source code. These are the Demo version and freely distributed for trial purpose.

Free Software Foundation (FSF): FSF is a non-profit organization established to support free software movement. It has funded many software developers to develop free software under GNU GPL. It also works on legal and structural issues for the free software community.

Open Source Initiative (OSI): It specifies the criteria and defines the terms and specifications for Open Software.

Free & Open Source Products:

GNU: GNU refer to GNU's not UNIX. It offers a wide range of free and open source software including application apart from operating system.

LINUX: Linux is a popular Open source operating system and can be downloaded from www.linux.org.

Mozilla Firefox: Freeware, free web browser, it can be download from www.mozilla.org.

Open Office: It is an office applications suite. It is intended to be compatible with most Operating Systems like Windows, Mac OS, UNIX and Linux and directly compete with Microsoft Office. It includes Write (Word Processor), Calc (Spread Sheets), Draw (Graphics program), Impress (Presentation), Math (Mathematical Formula editor) etc.

MYSQL: MySQL is most popular open source database system. MYSQL is a multi-user. It can work on many different platforms like Linux, Microsoft Windows, SUN OS etc. It can be downloaded from www.mysql.com.

JAVA NetBeans: Java NetBeans is a free open source, cross platform IDE with built in support for Java programming language. In fact Net beans run anywhere where there is JVM. It offers many features for application development.

APACHE: Apache web server (or HTTP server) is an open source web server available for many platform such as Linux, Microsoft windows and other platform. Apache is designed as a set of



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modules, enabling administrators to choose which features they wish to use and making it easy to add features to meet specific needs including handling protocols other than the web-standard *HTTP*. It is component of LAMP (Linux, apache, MySQL and PHP).

PHP: It is known as Hypertext Preprocessor. It is an OSS used for server side applications and developing dynamic web content. PHP allows easy interaction with large number of relational database systems such MySQL, Oracle, DB2, PostgreSQL etc. PHP runs on most major OS including windows, Mac OS X, UNIX, Linux

W3C: The World Wide Web consortium exists to realize the full potential of the web.

Advantages of Open Source Software

- Application and platform independence.
- Making the data accessible to all.

Disadvantages of Open Source Software

- Open source development process may not be well defined and the stages in the development process, such as system testing and documentation may be ignored.
- Not all OSS initiatives have been successful.

Types of Standards:

Proprietary standards: it is closed standard and users have to buy license to use them.

Open standards: Open standards are internationally accepted technical standards that guarantee that data can be exchanged or accessible across platforms and applications, even as technologies changes, It is freely available to all.

Some common open standard formats are:

HTML: HTML format is the standard language for the web.

XML: XML is open standard which is used to describe the data. It is text based markup language that allows storing data in structured format

Open document Format (ODF): Open document is an open, XML based file format. It is an open standard, supported by the IBM, Sun etc.

Ogg Vorbis: It is a new audio compression format. It is roughly comparable to other formats used to store and play digital music such as MP3 and mpeg-4 format. It is open, free, unpatented and loosely compression project from Xiph.org foundation.

Indian Language Computing

ASCII: American Standard Code for Information Interchange is widely used alphanumeric code in most microcomputers, minicomputers and in many mainframes. It is 7 bit code hence it can represent $2^7 = 128$ characters.

ISCII: Indian Standard Code for Information Interchange (ISCII) is an 8 bit code capable of coding 256 characters. It retains all ASCII characters and also offers coding for Indian Scripts.

Unicode: Unicode is a 16 bit code used to incorporate almost all the language of the world including Indian language. It provides a unique number for every character. Indian scripts included in Unicode are Devnagari, Bengali, Gurumukhi, Gujarati, Oriya, Tamil, Telegu, Kannada, and Malayalam.

Font: A Font refers to a set of displayable text characters called glyphs, having specific style and size. There are two categories of font: True Type Font and Open Type Font.

Types of Fonts:



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True Type Font: It is developed by Apple and licensed to Microsoft. It is 8 bit font which is compatible with Microsoft Windows and MAC OS.

Open Type Font: It is the extension of the True Type Font Format which is 16 bits font and support Unicode characters.

Static Vs Dynamic Font:

Static Font: In static fonts, the character are designed and digitized and then stored in font files. Every time printing take place, same character will appear with same shape for example Times New Roman, Arial etc.

Dynamic Font: In Dynamic fonts, the characters are redefined at each occurrence. Dynamic fonts generate different font shape using certain parameter-values. All hand written fonts such as handwritten alphabets are dynamic fonts because of individual variations.

Indian Language Text Entry: There are two types of text entries:

- 1) **Phonetic text entry:** In this type of text entry, traditional keyboards with English keys are used. But while typing, the Indian alphabets are written phonetically i.e. the way they sound. So, for phonetic text entry, a combination of keys can be used to represent one Indian language character. English script and then converted to corresponding language word.
- 2) **Key map Based Entry** In this method the keyboard keys are mapped to specific character using a key map. The whole arrangement of mapping the keyboard keys to specific language character is known as key map. A key map is internally stored as a table.

Very Short Answer Type Questions (1 Marks)

1. Write the names of any two free software?
2. Write the names of any proprietary software?
3. Write the names of two open sources software.
4. Which of the following is not a characteristic of Open Source Software?
 - a. Its source code is available for modification
 - b. It is owned by a company or an individual
 - c. It can be downloaded from internet
5. Define the following terms:
Free Software, Open source Software, Proprietary software, freeware, and shareware
6. Identify the free software out of the followings:
Mozilla firefox, PHP, GNU, MS Office, MySQL, Linux
7. What is significance of Unicode?
8. Expand the followings:
OSS, FLOSS, GNU, W3C, ASCII
9. Name the two encoding used for Indian language computing.
10. Name two Indian script included in Unicode.
11. Navneet is using software, which has been downloaded from internet and is available for one month. After one month he has to pay license fee for further use. Which software Navneet is using?
12. What is DoS (Denial of Service)? Explain briefly.
13. Which of the following are open standards?
 - 1) .ogg (2) .doc (3) .ttf (4) . jpeg
14. Which of the following are open standards & which are proprietary standards?



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i) WMA

ii) DOC

iii) JPEG

iv) HTML

Short Answer Type Questions: (2Marks)

1. Difference between free software and open sources software with example.
2. What are the different standards?
3. What do you understand by ODF?
4. What is Ogg Vorbis?
5. What do you understand by TTF and OTF?
6. Mr. Dass is confused between Shareware and Open source software. Mention at least two points of difference to help him understand the same.
7. What is character encoding?
8. What is the difference between static and dynamic fonts?