

Chapter-16

INTERNET AND OPEN SOURCE CONCEPTS

➤ Introduction:

- **Internetwork:** An internetwork is a collection of individual networks, connected by intermediate networking devices, that functions as a single large network.
- **Classification of Internetworks:**
 - **Internet:** The globe public network.
 - **Intranets:** The wholly owned/private internetworks.
 - **Extranets:** The hybrid internetworks: private networks/ internetworks connected through the internet
- *The term “open source” software is used to refer to those categories of software/ programs whose licenses do not impose much condition.*

➤ Terminology and Definitions:

✓ Free Software:

- *Free software means the software is freely accessible and can be freely used, changed, improved, copied and distributed by all who wish to do so.*
- No payments are needed to be made for free software.

✓ Open Source Software:

- Open Source Software, on the other hand, can be freely used but it does not have to be free of charge.
- Open Source doesn't just access to the source code. The distribution terms of Open Source Software must comply with the following criteria.
 1. Free Redistribution
 2. Source Code
 3. Derived works
 4. No Discrimination Against persons or groups
 5. No Discrimination Against Fields or Groups
 6. Distribution of License
 7. License Must Not be Specific to a Product
 8. The license must Not Restrict other Software
 9. License Must Be technology Natural

✓ **OSS:**

- OSS refers to open source software, which refers to software whose source code is available to customers and it can be modified and redistributed without any limitation.

✓ **FLOSS:**

- FLOSS refers to Free Libre and open Source Software or to Free Livre and Open Source Software.
- The term FLOSS is used to refer to software which is both free software as well as open source software.
- Here the words Libre (a Spanish word) and Livre (a Portuguese's word) mean freedom.

✓ **GNU:**

- GNU is a Unix-like computer operating system developed by the GNU project.
- It is composed wholly of free software.
- It refers to GNU's Not Unix. GNU Project emphasizes on freedom and thus its logo type show a GNU, an animal living in freedom

✓ **FSF:**

- FSF is Free Software Foundation. FSF is a non-profit organization created for the purpose of supporting free software movement.
- Richard Stallman founded FSF in 1985 to support GNU project and GNU licenses.

✓ **OSI:**

- OSI is Open Source Initiative. It is an organization dedicated to cause of promoting open source software.
- Bruce Perens and Eric Raymond were the founders of OSI that was founded in February 1998.

✓ **W3C:**

- W3C is acronym for World Wide Web Consortium.
- W3C is responsible for producing the software standards for World Wide Web.
- The W3C was created by Tim Berners-Lee in 1994.

✓ **Proprietary Software:**

- Proprietary software or closed source software is the software that is neither open nor freely available.
- Its use is regulated and further distribution and modifications is either forbidden or requires special permission by the supplier or vendor.
- Source of proprietary software is normally not available.

✓ **Freeware:**

- The term freeware has no clear definition, but is generally used for software, which is available free of cost and which allows copying and further distribution, but not modification and whose source code is not available.
- Freeware is distributed in Binary Form (ready to run) without any licensing fees.

✓ **Shareware:**

- Shareware is software, offered as trial version (for limited period of time) with certain features only available after the license is purchased.
- Its source code is not available and modifications to the software are not allowed.

✓ **WWW (World Wide Web).**

- The World Wide Web (WWW) is a set of protocols that allows you to access any documents on the Net through a naming system based on URLs.
- WWW also specifies a way -- the Hypertext Transfer Protocol (HTTP) - to request and send a document over the internet.
- Attributes of WWW
 - **User friendly** - www resources can be easily used with the help of browser.
 - **Multimedia documents** - A web page may have graphic, audio, video, and animation etc at a time.
 - **Hypertext and hyperlinks** - The dynamic links which can move towards another web page is hyperlink.
 - **Interactive** - www with its pages support and enable interactivity between users and servers.
 - **Frame** - display of more than one section on single web page.
- **Advantages of WWW:**
 - Availability of mainly free information.
 - Low cost of initial connection.
 - It is accessible from anywhere.
 - Facilities rapid interactive communication.
 - Facilities the exchange of huge information.
 - Facilitates the establishment of professional contact.
 - Facilitates access to different sources of information.
- **Disadvantages of WWW:**
 - Danger of overload and excess information
 - It requires an efficient information search strategy

- The search can be slow
 - It is difficult to filter and prioritize information
 - No guarantee of finding what one is looking for
 - Net becomes overloaded because of large number of users
 - No quality control over available data
- ✓ **Telnet (Remote Login):**
- Telnet (Teletype network) is an order Internet utility that lets you log on to remote computer systems.
 - Telnet program gives you a character-based terminal window on another system.
 - You get a login prompt on that system. If you've permitted access, you can work on that system, just as you would if you were sitting next to it.
- ✓ **Web Browser:**
- *A Web Browser is software application that enables the user to view web pages, navigate web sites and move from one website to another.*
 - Some of the web browsers are Google Chrome, Internet Explorer, Netscape Navigator, Mozilla Firefox, and Opera.
- ✓ **Web Server:**
- An internet host computer that many store thousand of websites.
 - *A Web Server is a WWW server that responds made by web browsers.*
 - Example: Apache, IIS, PWS (Personal web server for Windows 98).
- ✓ **Web sites:**
- *A Web site is collection of web pages, images, videos and other digital assets and hosted on a particular domain on the WWW.*
 - Each web site has a unique address called URL.
- ✓ **Web page:**
- *A document that can be viewed in a web browser and residing on a website is a web page.*
 - The web pages use HTTP.
 - **Home page** - A web page that is the starting page and acts as an indexed page is home page.
 - **Web portal** - That facilitates various type of the functionality as website.
 - For example: www.pue.kar.nic.in , www.karnataka.gov.in.
- ✓ **URL and Domain :**
- The internet structure of the www is built on a set of rules called Hypertext Transfer Protocol (HTTP) and a page description language called Hypertext Markup Language (HTML).

- HTTP uses Internet addresses in a special format called a URL.
- A URL (Uniform Resources Locator) specifies the distinct address for each resource on the internet
- URLs look like this: **type://address/path**
- In URL,
 - type specifies the type of server in which the file is located,
 - address is the address of the server,
 - path is the location within the file structure of the server, the path includes the list of folders(or directories) where the desired file is located.
- Consider the URL

http://www.yahoo.com or http://www.facebook.com

✓ Domain name:

- An internet address which is a character based is called a Domain name.
- A domain name is away to identify and locate computer and resources connected to the internet.
- This type of domain name is also called hostname.
- Some most common domains are:

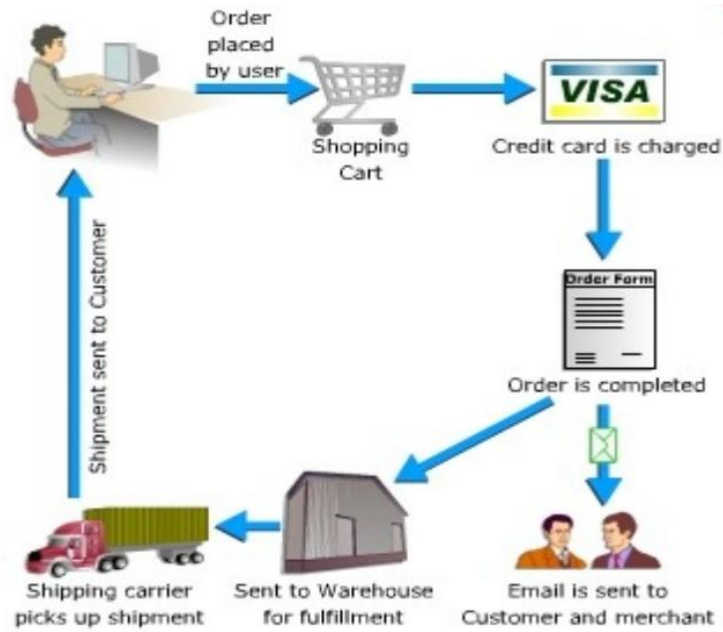
Domain ID	Meaning	Domain Cou	Meaning
.com	Commercial	.au	Australia
.gov	Government	.in	India
.mil	Military	.nz	New Zealand
.ac	Academic	.ca	Canada
.org	Organization	.jp	Japan
.edu	Education	.uk	United Kingdom

➤ E-Commerce:

- E-Commerce is the trade of goods and services with the help of telecommunications and computers.
- E-Commerce involves the automation of a variety of business to consumer transaction through reliable and secure connections.

➤ E-Commerce Process:

- A consumer uses a Web browser to connect to the home page of a merchant's Web site on the Internet.



- The consumer browses the catalog of products featured on the site and selects items to purchase. The selected items are placed in the electronic equivalent of a shopping cart.
- When the consumer is ready to complete the purchase of selected items, it provides a bill to and ship to address for purchase and delivery
- When the credit card number is validated and the order is completed at the Commerce Server site, the merchant's site displays a receipt confirming the customer's purchase.
- The Commerce Server site then forwards the order to a Processing Network for payment processing and fulfillment.

➤ Different types of E-Commerce

- Business-to-Business (B2B)
- Business-to-Consumer (B2C)
- Consumer-to-Business (C2B)
- Consumer-to-Consumer (C2C)
- Business-to-Business (B2B)

✓ Business-to-Business (B2B):

- The exchange of services, information and/or products from one business to another business partners.
- Examples: Intel selling microprocessor to Dell

✓ Business-to-Consumer (B2C):

- The exchange of services, information and/or product from business to a consumer.
- Example: Dell selling me a laptop. Websites: Flipkart, Amazon, Snapdeal.

✓ **Consumer-to-Business (C2B):**

- Customer directly contact with business vendors by posting their project work with set budget online so that needy companies review it and contact the customer directly with bid.
- Example: guru.com, freelancer.com

✓ **Consumer-to-Consumer (C2C)**

- E-commerce is simply commerce between private individuals or consumers.
- Example: Ram buying smartphone from Sham using OLX

➤ **Advantages of e-commerce**

- Buying & selling can be done online at any time (24 hours) money.
- It provides faster payments through Electronic Fund Transfer.
- Online payment reduces work of carrying money to the shop and also saves money.
- Customer can search for competitive prices quickly before purchasing the items.
- Wider choice for item selection.
- Without going to the shops customers can view the products through websites thus saves time.

➤ **Disadvantages of e-commerce**

- Initial cost is high.
- E-Commerce websites needs to be protected from virus attacks, hackers.
- Needs more security.
- Some company may charge more for shipping or other transport.
- There is the possibility of credit card number theft.
- Mechanical failures can cause unpredictable effects on the total processes.

➤ **IPR Issues:**

- IPR stands for Intellectual Property Rights.
- Intellectual Property Rights (IPR) means copyrights, patents, and trademarks, designs etc held by a person or company who have invented or designed a product.
- Copyright, trademarks, industrial designs, patents, integrated circuits are the different forms of Intellectual property.
- The main benefits of IPR are wealth creation, legitimate ownership, talent attraction, image of a trustworthy organization.
- **WIPO – World Intellectual Property Organization.**
- IPR-related issues in India like patents, trademarks, copyrights, designs are governed by the Patents Act 1970 and patents Rules 2003, Trademarks Act 1999, Trademarks Rules 2002, Copyright Act 1957, Design Act 2000 and Rules 2001.

CHAPTER 16 – INTERNET AND OPEN SOURCE CONCEPTS BLUE PRINT				
VSA (1 marks)	SA (2 marks)	LA (3 Marks)	Essay (5 Marks)	Total
01 Question	-	01 Question	-	02 Question
Question no 9	-	Question no 25	-	04 Marks

Important Questions

➤ 1 Marks Question:

1. What is Open source software? [March 2015]
2. What are Freeware? [March 2016]
3. Define E-Commerce. [June 2016]
4. What is telnet?
5. Expand OSS and FLOSS.

➤ 3 Marks Question:

1. Explain Free software.
2. What is meant by shareware? Write its limitations [March 2016]
3. What is Web browser? Mention any two web browser. [March 2015, June 2015]
4. Give the advantages of WWW.
5. Define the terms webpage, website, web server. [June 2016]
6. Explain URLs.
7. What is E-Commerce? Explain types of E-commerce. [June 2015, March 2017]
8. What are the advantages and disadvantages of E-commerce?
9. Explain IPR.
