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STD XII

COMPUTER APPLICATIONS – CHAPTER 14

OPEN SOURCE CONCEPTS

Choose the correct answer

1. If the source code of a software is freely accessible by the public, then it is known as
a) freeware b) Firmware c) **Open source** d) Public source
2. Which of the following is a software program that replicates the functioning of a computer network?
a) Network software b) **Network simulation** c) Network testing d) Network calculator
3. Which of the following can document every incident that happened in the simulation and are used for examination?
a) Net Exam b) Network hardware c) **Trace file** d) Net document
4. Which is an example of network simulator?
a) simulator b) TCL c) **NS2** d) C++
5. NS2 comprises of _____key languages?
a) 13 b) 3 c) **2** d) 4
6. Choose the Correct Pair from the following to build NS2
a) UNIX & TCL b) UNIX & a. C++ c) **C++ & OTcl** d) C++ & NS2
7. Which of the following is not a network simulation software?
a) **NS2** b) OPNET c) SSFNet d) C++
8. Which of the following is a open source network monitoring software?
a) C++ b) OPNET c) **Open NMS** d) OMNet++
9. Open NMS was released in
a) 1999 b) 2000 c) 2003 d) **2004**
10. OpenNMS Group was created by.....
a) Balog b) Matt Brozowski c) David Hustace d) **All of them.**

Give Short Answers

- 1) Explain the history of Open source software.
 - In the early days of computing, program and developers shared software in order to learn from each other and evolve the field computing.
 - Eventually, the open-source notion moved to the way side of commercialization of software in years 1970-1980.
 - The Open Source Initiative .was founded February 1998 to encourage use of the new and evangelize open-source principles.
 - The free-software movement was launched 1983.
 - In 1998, a group of individuals advocated the term free software should be replaced open-source software (OSS) as an which is less ambiguous and more for the corporate world.
 - The open source label came out of a strategy session held on April 7, 1998.
- 2) What is meant by network simulator?
 - A network simulator is a software program replicates the functioning of a computer
 - In simulators, the computer network is typically demonstrated with devices, traffic etc. and the performance are evaluated.
- 3) What is a trace file?
 - A significant output of simulation is the trace files. Trace files can document every incident that happened in the simulation and are used for examination.
- 4) Write a short note on NS2.
 - NS2 is the abbreviation of NETWORK SIMULATOR version 2.
 - It was considered explicitly for exploration in network communication and event driven open-source simulator in computer.
 - OTCL and c++ used to create and run NS2.
 - NS2 works on Windows and Linux platforms, that supports wired or wireless network and also use the command line interface as a user interface

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5) Explain NRCFOSS

- National Resource Centre for Free and Open Source Software an Institution of Government of India.
- To help in development of FOSS in India

6) Write Short note on Open NMS

- Open NMS (Network Management System) is a free and open-source initiative grade network monitoring and management platform.
- Established and maintained by a community of users ,developers and by the Open NMS Group,
- It offering services, training and support.
- The goal is to be an actually distributed, scalable management application platform for all features of the FCAPS network management model.
- Presently the emphasis is on Fault and Performance Management.

7) What is a network simulation?

A network simulation is a method whereby a software program models the activities of a network by calculating the communication between the different network objects such as routers, nodes, switches, access points, links etc.

8) What is BOSS?

- BOSS (Bharat Operating System Solutions) Operating System Developed in India by CDAC (Centre for Development of Advanced Computing)
- Helps to prompt the use of open source software in India.
- It Supports many India Language

9) What is a freeware?

Freeware usually refers to proprietary software that users can download at no cost, but whose source code cannot be changed.

10) Name the Domains that developers can contribute to the open source community.

- Communication tools.
- Distributed revision control systems.
- Bug trackers and task lists.
- Testing and debugging tools.

PART III GIVE BRIEF ANSWERS

1) What are the uses of Open source Network software?

- We can select and use any software that suits our needs from the available
- Can be used free of cost
- Share our ideas with the production team
- We can add the most needed features in the software
- User friendly

2) Explain Free software.

- The free software a concept developed in the 1980s by an MIT computer science researcher, Richard Stallman is defined by four conditions, as outlined by the nonprofit Free Software Foundation.
- These “four freedoms” emphasize the ability of users to use and enjoy software as they see fit.
- Free software are more philosophical than practical

3) List out the popular open source software.

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OPEN SOURCE CONCEPTS

- NS2 , OPEN NMS, Ubuntu , MySQL, PDF Creator, Open Office, 7zip , GNUCASH, GIMP, BLENDER, AUDACITY, VLC, MOZILA FIREFOX, MAGENTO, ANDROID, PHP
- 4) Write note on open source hardware.
- In this period of increased competition and cyber crimes, the computers used by individuals or business organisations may have spy hardwares of rivals.
 - Open source hardware technology helps in such threats.
 - In this technique we get the components of the hardware and its circuit diagram, so that we can remove suspicious spyware if found.
- 5) Explain the functional areas of open NMS?
- **Service monitoring**, where a number of monitor modules can govern if network-based services (ICMP, HTTP, DNS, etc.) are accessible.
 - **Data Gathering** by using SNMP and JMX.
 - **Event management and notifications**, which comprises of alarm reduction and a robust announcement system with accelerations and duty schedules.
- 6) Explain the types of organisations related to open source.
- Apache Software Foundation
 - The Document Foundation
 - The Eclipse Foundation
 - Free Software Foundation
 - Linux Foundation
 - OpenCourseWare Consortium
 - Open Source Initiative

PART IV
Give Detail Answer

- 1) Differentiate Proprietary and Open source software

| Proprietary Software | Open source software |
|--|---|
| It is developed and tested through open collaboration | It is owned by the individual or the organization that developed it |
| Anyone with the academic knowledge can access, inspect, modify and redistribute the source code. | Only the owner or publisher who holds the legal property rights of the source code can access it. |
| The project is managed by an open source community of developers and programmers | The project is managed by a closed group of individuals or a team that developed it |
| They are not aimed at unskilled users outside of the programming community | They are focused on a limited market of both skilled and unskilled end users |
| It Provides better flexibility which means more freedom which encourages innovation | There is a very limited scope of innovation with the restrictions and all |
| Example: Android, Firefox etc | Example: Windows, MacOS |

- 2) List out the Benefits of Open Source Software.
- We can select and use any software that suits our needs.
 - Can be used without any cost and restrictions.

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- Can share our ideas with the team, write the required code and share it with many.
- Can identify the programming techniques of group members, we can learn many ideas and make our program writing skills more efficient.
- It can be groomed by many enthusiastical members of the group. So if we report problems that we have in the program they are quickly mended by the group's effort.
- Can make changes to the open source softwares, we can add the most required features in the software
- Very user friendly.

3) Explain various Open Source License.

- Apache License 2.0
- BSD 3-Clause "New" or "Revised" license
- BSD 2-Clause "Simplified" or "FreeBSD" license
- GNU General Public License (GPL)
- GNU Library or "Lesser" General Public License (LGPL)
- MIT license
- Mozilla Public License 2.0
- Common Development and Distribution License
- Eclipse Public License
- When you change the source code, OSS requires the inclusion of what you altered as well as your methods. The software created after code modifications may or may not be made available for free.

4) Compare Open software vs Free Software

- OSS is slightly different from free software.
- Both deal with the ability to download and modify software without restriction or charge.
- Free software a concept developed in the 1980s by Richard Stallman is defined by four conditions, as outlined by the nonprofit Free Software Foundation. These "four freedoms" emphasize the ability of users to use and enjoy software as they see fit.
- In contrast, the OSS criteria, which the Open Source Initiative developed a decade later, place more emphasis on the modification of software, and the consequences of altering source code, licensing, and distribution.
- Obviously, the two overlap; some would say the differences between OSS and free software are more philosophical than practical.

Note:

| | |
|--------------------|--|
| NS2 | Network Simulation 2 |
| OTCL | Object-oriented Tool Command Language |
| FCAPS | Fault, configuration, accounting, performance, security |
| GNU | General Public License |
| SSFNet | Scalable Simulation Framework Net Models |
| API | APPLICATION PROGRAM INTERFACE |
| SOURCE CODE | Set of Instructions that decide, how the software should work |
| BOSS | Bharat Operating System Solutions |
| C-DAC | Centre for Development of Advanced Computing |
| OpenNMS | First Open Source Network Management Software |
| Trace File | A document file, consists of every incident happens in a simulation |

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