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CLASS ID : 16679

SUBJECT : RAD 2<sup>nd</sup> SEMESTER

QNO1 (a) .

### **Difference between Open-Source and Application Software**

#### Control of Open-Source and Application Software

The idea alone that developers and programmers are allowed to examine and modify the source code as deemed necessary shouts aloud control. More control means more flexibility, which means non-programmers can also benefit from the open collaboration. Application software, on the contrary, restricts control only to the owner of the software.

#### Security of Open-Source and Application Software

Because anyone with the required knowledge can add or modify additional features to the program's source code to make it work better, it allows better sustainability of the software as in discrepancies in the software can be rectified and corrected repeatedly. As developers can work without any restrictions, it allows them to rectify errors that might have missed by the original developers or publishers.

#### Driver Support of Open-Source and Application Software

Open-source software packages often have missing drivers which is natural when you have an open community of users with access to every single line of code. The software may include code modified by one or more individuals, each subject to different terms and conditions. The lack of formal support or sometimes use of generic drivers can put the project at risk.

Application software means closed group support which means better performance.

#### Usability of Open-Source and Application Software

Unlike open-source projects, Application ones are typically designed keeping in mind a limited group of end users with limited skills. They target a small knit circle of end users unlike projects accomplished within open source communities. Users outside the programming community .

#### Opacity of Open-Source and Application Software

The viewing restrictions barred the end users from modifying the code let alone debugging it effectively with no control over possible workarounds. The internal structure of Application software is strictly closed-access meaning they lack transparency which makes it virtually impossible for users to even suggest modifications or optimizations to the software. Open source, on the other hand, promotes open collaboration which means lesser bugs and faster bug fixes with fewer complexities.

#### Summary of Open-Source Verses Application Software

Open-source refers to the software whose source code is available for anybody to access and modify, while Application software refers to the software which is solely owned by the individual or publisher who developed it. Unlike open-source software, Application software is managed by the individual or the organization that holds exclusively the intellectual property rights of the source code and nobody outside the circle is allowed to view the code let alone inspect it. The main difference between the two is that open source projects have the ability to evolve as they can be iterated upon by millions of developers located across the globe.

(b) Write different features of system software?

#### System Software

There are two main types of software: systems software and application software. Systems software includes the programs that are dedicated to managing the computer itself, such as the operating system, file management utilities, and disk operating system (or DOS).

System software is a software that provides platform to other software. Some examples can be operating systems, antivirus software's, disk formatting software, Computer language translators etc. These are commonly prepared by the computer manufacturers. These software consists of programs written in low-level languages, used to interact with the hardware at a very basic level. System software serves as the interface between the hardware and the end users.

The most important features of system software include :

1. Closeness to the system
2. Fast speed
3. Difficult to manipulate
4. Written in low level language.

QNO1 (b) .

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QNO2 (a)

ANS. What is open source software?

Open source software is software with source code that anyone can inspect, modify, and enhance.

"Source code" is the part of 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 work correctly. Open source licenses affect the way people can use, study, modify, and distribute software. In general, open source licenses grant computer users permission to use open source software for any purpose they wish. Some open source licenses—what some people call "copyleft" licenses—stipulate that anyone who releases a modified open source program must also release the source code for that program alongside it. Moreover, some open source licenses stipulate that anyone who alters and shares a program with others must also share that program's source code without charging a licensing fee for it.

By design, open source software licenses promote collaboration and sharing because they permit other people to make modifications to source code and incorporate those changes into their own

projects. They encourage computer programmers to access, view, and modify open source software whenever they like, as long as they let others do the same when they share their work.

QNO2 (b).

ANS : (b) Explain the use of File Transfer Protocol and TelNet services?

File Transfer Protocol

The File Transfer Protocol (FTP) is one of the oldest Internet protocols. The technology for transferring entire files has been used since 1974. In 1985, FTP was precisely defined in the RFC 959. The idea behind the protocol is to trigger downloads and uploads with commands. This allows you to transfer files from your own device (PC, smartphone, etc.) to a server and vice versa.

In this process, the file management systems (that you know from your operating system) are available to the user. Files can be placed in folders, which can in turn be placed in other folders, giving rise to a hierarchical directory structure.

The File Transfer Protocol is often used to build websites. For example, HTML files can be transferred to the server using FTP access. Additionally, website providers can make media files .

QNO3 (a)

ANS . A metropolitan area network (MAN) is a network that interconnects users with computer resources in a geographic area or region larger than that covered by even a large local area network (LAN) but smaller than the area covered by a wide area network (WAN). The term is applied to the interconnection of networks in a city into a single larger network (which may then also offer efficient connection to a wide area network). It is also used to mean the interconnection of several local area networks by bridging them with backbone lines. The latter usage is also sometimes referred to as a campus network.

Examples of metropolitan area networks of various sizes can be found in the metropolitan areas of London, England; Lodz, Poland; and Geneva, Switzerland. Large universities also sometimes use the term to describe their networks. A recent trend is the installation of wireless MANs.

Examples,

A LAN is used in office buildings, schools, and rooms, a MAN is used primarily in cities, and a WAN is used over a state, province or country. Metropolitan area networks typically connect businesses to businesses and businesses to wide area networks.

QNO3 (b).

ANS: Topology refers to how various nodes, devices, and connections on your network are physically

or logically arranged in relation to each other. Think of your network as a city, and the topology as the road map. Just as there are many ways to arrange and maintain a city—such as making sure the avenues and boulevards can facilitate passage between the parts of town getting the most traffic—there are several ways to arrange a network. Each has advantages and disadvantages and depending on the needs of your company, certain arrangements can give you a greater degree of connectivity and security.

There are two approaches to network topology: physical and logical. Physical network topology, as the name suggests, refers to the physical connections and interconnections between nodes and the network—the wires, cables, and so forth. Logical topology is a little more abstract and strategic, referring to the conceptual understanding of how and why the network is.

QNO4.

ANS .

Different types of common media used for Storage, access and transmission of information

☒ Magnetic Storage Device – one of the most popular types of storage used.

o Floppy diskette – A normal 3 ½ inch disk can store 1.44 MB of data.

o Hard drive – An internal hard drive is the main storage device in a computer. An external hard drive is also known as removable hard drive. It is used to store portable data and backups.

o Magnetic strip – Magnetic tape drive stores video and audio using magnetic tape, like tape and video tape recorders.

o Super disk – A disk drive and diskette that can hold 120 MB and 240 MB of data.

o Cassette tape – A magnetic storage device used for audio recording and playback.

o Zip diskette – Like a floppy diskette but more advanced.

☒ Optical Storage Device – uses lasers and lights as its mode of saving and retrieving data.

o Blu-ray disc – A digital optical storage device which was intended to replace the

DVD format.

- o CD-ROM disc – An optical storage device that is read-only or cannot be modified nor deleted.

- o CD-R and CD-RW disc – CD-R is a recordable disc that can be written to once, while CD-RW is a rewritable disc that can be written to multiple times.

- o DVD-R, DVD+R, DVD-RW and DVD+RW disc – DVD-R and DVD+R are recordable discs that can be written to once, while DVD-RW and DVD+RW are rewritable discs that can be written to multiple times. The difference between the + and – is in the formatting and compatibility.

- ☒ Flash Memory Device – is now replacing magnetic storage device as it is economical, more functional and dependable.

- o Memory card – An electronic flash memory device used to store digital information and commonly used in mobile electronic devices.

- o Memory stick – A memory card that is removable.

- o SSD – Solid State Drive – A flash memory device that uses integrated circuit assemblies to save data steadily.

- o USB flash drive, jump drive or thumb drive – A small, portable storage device connected through the USB port.

- ☒ Online and Cloud – is now becoming widespread as people access data from different.