COMPUTER FUNDAMENTAL INTERVIEW QUESTION

1. Q: What is a computer?

A: A computer is an electronic device that can come up with four tasks. These tasks are receiving input, storing, processing and giving output.

- Interview Q&A

2. Q: What is Computer Hardware?

A: Computer hardware is what you can physically touch. Hardware is the collection of physical parts of a computer system. This includes the computer case, monitor, keyboard, and mouse. It also includes all the parts inside the computer case, such as the hard disk drive, transistors, chips etc.

- Interview Q&A

3. Q: Can you give us examples of persistent and non persistent storage devices?

A: Random Access Memory (RAM) is an example of non persistent storage and Hard Disk Drive(HDD) or Solid State Disks (SSD) are persistent storage examples.

- Interview Q&A

4. Q: What is Operating System?

A: Operating System is a software program that enables the computer hardware to communicate and operate with the computer software

- Interview Q&A

5. Q: What is a deadlock in operating systems?

A: Deadlock is a situation when two or more processes wait for each other to finish and none of them ever finish. Consider an example when two trains are coming toward each other on same track and there is only one track, none of the trains can move once they are in front of each other. A similar situation occurs in operating systems when there are two or more processes hold some resources and wait for resources held by other(s).

- Interview Q&A

6. Q: Which operating system/systems do you use and have you ever used [open source](https://lms.clarusway.com/mod/lesson/view.php?id=860) operating system?

A: (You should know which operating system do you use with its version) I am using Ubuntu 19.10/Windows 10.1. I have used OSX last year. Linux [operating systems](https://lms.clarusway.com/mod/lesson/view.php?id=56) are [open source](https://lms.clarusway.com/mod/lesson/view.php?id=860) and I am using Linux-Ubuntu operating system. I am also using Android/iOS operating system on my mobile phone. Android operating system is also [open source](https://lms.clarusway.com/mod/lesson/view.php?id=860).

- Interview Q&A

7. Q: What is a shell?

A: Shell is an interface between the user and the kernel. Even though there can be only one kernel; a system can have many shell running simultaneously. So, whenever a user enters a command at command line from terminal, the shell communicates with the kernel to execute it and then gives the output.

- Interview Q&A

8. Q: What is Directory?

A: Every file is assigned to a directory. A directory is a specialized form of a file that maintains a list of all files in it.

- Interview Q&A

9. Q: How many bit combinations are there in a byte?

A: 256 possible combinations (from 0 to 255) A byte is made of 8 bits. Bits can only be on or off (0 or 1). 00000000 =0 , 00000001 = 1, 00000010 = 2, 00000011 = 3, 00000100 = 4, ... 11111111 = 255.

- Interview Q&A

10. Q: What is ASCII?

A: Ascii is a character encoding standard adopted by the Institute of Electrical and Electronics Engineers (IEEE) in 1963. ASCII is an abbreviation for American Standard Code for Information Interchange. It is a method of representing text characters in a binary representation recognized by computers, communications equipment, and other technological devices.

- Interview Q&A

11. Q: What is the difference between gigabyte and gigahertz?

A: Gigabyte is storage metric that is equal to 1024 megabyte. But gigahertz is a measure of speed. One gigahertz is 1 billion cycles per second.

- Interview Q&A

12. Q: What is Software?

A: Software is a set of instructions, data or programs used to operate computers and execute specific tasks. Opposite of hardware, which describes the physical aspects of a computer, software is a generic term used to refer to applications, scripts and programs that run on a computer.

- Interview Q&A

13. Q: What is Assembler?

A: An assembler is a program that converts assembly language into machine code. It takes the basic commands and operations from assembly code and converts them into binary code.

- Interview Q&A

14. Q: What is the difference between compiler and interpreter?

A: A compiler takes entire program and converts it into object code which is typically stored in a file. The object code is also refereed as binary code and can be directly executed by the machine after linking. An Interpreter directly executes instructions written in a programming or scripting language without previously converting them to an object code or machine code.

- Interview Q&A

15. Q: What is a software library used for?

A: A software library generally consists of pre-written code, classes, procedures, scripts, configuration data and more. So Software Libraries save programmers' time from writing routine processes' codes every time. For example, when developing a mathematical program or application, a developer may add a mathematics software library to the program to eliminate the need for writing complex functions

- Interview Q&A

16. Q: What is Frontend and Backend?

A: The frontend of a website or application is what you see and interact with on your device screen. Also referred to as “client-side”, it includes everything the user experiences directly: from text and colors to buttons, images, and navigation menus.

The backend (or “server-side”) is the portion of the website you don’t see. It’s responsible for storing and organizing data, and ensuring everything on the client-side actually works. The backend communicates with the front-end, sending and receiving information to be displayed as a web page.

- Interview Q&A

17. Q: What Is LAN?

A: Local Area Network. A LAN allows users to share [files](https://lms.clarusway.com/mod/lesson/view.php?id=1052) between computers, send e-mail and access the Internet. Most companies use Local Area Networks so that users can access information within or outside the LAN.

- Interview Q&A

18. Q: What is WAN?

A: Wide Area Network (WAN) is more complex than LAN and covers a large span of the area typically a large physical distance. The Internet is the largest WAN which is spread across the world. WAN is not owned by any single organization but it has distributed ownership.

- Interview Q&A

19. Q: What Is A Protocol?

A: A protocol is a method of communication between two devices. You can think of it as the language the devices use to communicate with each other, although it is not the same as a programming language (by which a human programmer controls a computer). Different brands of printers, for example, each use their own protocol (or "language") by which a computer can communicate with the printer. This is why a driver program must be written for each printer.

- Interview Q&A

20. Q: What do you mean by the TCP/IP Model?

A: TCP/IP stands for Transmission control protocol and Internet protocol. It describes how the data will get transmitted and routed from end to end communication.

- Interview Q&A

21. Q: What do you mean by DNS?

A: DNS Stands for Domain Name System. It’s an internet address mapping process with the local name. We can also call it as an internet phonebook.

- Interview Q&A

22.

Q: Explain Web Server.

A: A Web server is a server on the Internet that holds Web documents and makes them available for viewing by remote browsers..

- Interview Q&A

23. Q: Explain Database and Database Management System.

A: A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS). Some examples of popular database software or DBMSs include MySQL, MongoDB, PostgreSQL, Microsoft SQL Server

- Interview Q&A

24. Q: What is SQL and have you heard about NoSQL?

A: SQL is a programming language used by nearly all relational databases to query, manipulate, define data and to provide access control. A NoSQL, or nonrelational database, allows unstructured and semistructured data to be stored and manipulated (in contrast to a relational database)

- Interview Q&A

25. Q: What are the three V's of big data?

A: Variety: Refers to the different data types i.e. various data formats like text, audios, videos, etc.

Velocity is the rate at which data grows. Social media contributes a major role in the velocity of growing data.

Volume represents the volume i.e. amount of data that is growing at a high rate i.e. data volume in Petabytes(1 Petabytes = 1024 Terabytes).

- Interview Q&A

26. Q: What Is Web Browser?

A: A web browser is a program that you use to view web pages. Some of the most popular web browsers are Microsoft Internet Explorer, Google Chrome, Mozilla Firefox.

27. Q: What is status code in HTTP?

A: It is a standard response code given by web [servers](https://lms.clarusway.com/mod/lesson/view.php?id=1015) on the Internet. It helps to identify the cause of a problem when a web page or other resource does not load properly. There are two major group of HTTP status code error exist:

* 4xx Client Error
* 5xx Server Error

- Interview Q&A

28. Q: What are the header fields in HTTP?

A: HTTP header fields allow the client and server to pass information with the request and response message. Following are the header fields in HTTP:

* General header: It applies for both request and response message.
* Request header: It contains information for the request message.
* Response header: It is used to contain response header information sent by the web server.
* Entity header: It is used to contain more information about the body of the entity.

- Interview Q&A

29. Q: What are SSL certificates?

A: SSL is a standard security protocol which ensures confidentiality and integrity of data while in transit. It encrypts the data flow between the web browser and web server, hence ensures confidentiality. Also, web server and browser exchanges key to decrypt the data, which ensures the integrity of data.

- Interview Q&A

30. Q: What are the benefits of HTTPS certificate?

A: The major benefits of HTTPS certificate are:

* Customer information like credit card number and ATM pin is encrypted and cannot be easily tracked.
* Customers trust and prefer to purchase from the sites that use HTTPS protocol.
* This protocol shows authenticate register domain as secure connection.

- Interview Q&A

31. Q: What is Cookie?

A: Cookie provides a simple way to identify session among a group of HTTP/HTML requests. The cookie value is often an index into a table stored in the memory of a Web server that points to an in-memory object holding the user's records. This has many potential problems: If the user's request is routed to a different server in a subsequent request, the session information is unknown to the server.

If the user is routed to a different server and the server is part of an application cluster, then all the [servers](https://lms.clarusway.com/mod/lesson/view.php?id=1015) that could receive the user's request must have a way to synchronize the session data. Storing cookies and synchronizing sessions among clusters of server usually requires configuration, storage space, and memory.

- Interview Q&A

32. Q: Explain Phishing and how to prevent it.

A: Phishing is a Cyberattack in which a hacker disguises as a trustworthy person or business and attempt to steal sensitive financial or personal information through fraudulent email or instant message.

You can prevent Phishing attacks by using the following practices:

* Don’t enter sensitive information in the webpages that you don’t trust
* Verify the site’s security
* Use Firewalls
* Use AntiVirus Software that has Internet Security
* Use Anti-Phishing Toolbar

- Interview Q&A

33. Q: Define Spyware.

A: Spyware is a malware that aims to steal data about the organization or person. This malware can damage the organization's computer system.

- Interview Q&A

34. Q: Explain SQL Injection and how to prevent it.

A: SQL Injection (SQLi) is a code injection attack where an attacker manipulates the data being sent to the server to execute malicious SQL statements to control a web application’s database server, thereby accessing, modifying and deleting unauthorized data. This attack is mainly used to take over database [servers](https://lms.clarusway.com/mod/lesson/view.php?id=1015).

You can prevent SQL Injection attacks by using the following practices:

* Use prepared statements
* Use Stored Procedures
* Validate user input

- Interview Q&A

35. Q: What is plaintext or cleartext?

A: The decrypted message, when it is returned back into its plain or original state of context which is comprehensible and decipherable, is also known as cleartext or plaintext.

- Interview Q&A

36. Q: What is ciphertext?

A: When the message is encrypted into a state which is totally incomprehensible and indecipherable, this is known as the ciphertext. So, to illustrate all of this, with the previous example, when the sending party creates the written message of “I LOVE YOU”, this is the plaintext or the cleartext. Once this message is encrypted into the format of “UYO I VEOL” and while it is in transit, it becomes known as the ciphertext. Then, once the receiving party gets this ciphertext and then decrypts it into a comprehensible and understandable form of “I LOVE YOU,” this message then becomes the plaintext or the cleartext again.

- Interview Q&A

37. Q: What exactly are encryption and decryption?

A: The terms “scrambling” and “descrambling” are commonly known as “encryption” and “decryption.”

For example: when the written message “I LOVE YOU” is scrambled by the sending party, it becomes what is known as the “encrypted message.” This means that the written message has been disguised in such a manner that it would be totally meaningless, or in the terms of cryptography, it would be undecipherable.

Encryption can also be described as the conversion of information from a readable state to apparent nonsense. When the receiving party receives this encrypted written message, it must be unscrambled into an understandable and comprehensible state of the context. This process of unscrambling is also known as decryption

- Interview Q&A

38. Q: What is the hashing function?

A: The hashing function is a one-way mathematical function. This means that it can be used to encode data, but it cannot decode data. Its primary purpose is not to encrypt the ciphertext; rather, its primary purpose is to prove that the message in the ciphertext has not changed in any way, shape or form. This is also referred to as “message integrity.” If the mathematical function has changed in any way, the message has then changed.

- Interview Q&A