

ASSIGNMENT 1

1.How internet works?

The Internet works by connecting networks together through a series of routers and switches. A router forwards packets of data between different networks while a switch links devices within a single network. This enables computers to communicate with each other and access content stored on remote servers.

2.How browser works?

A web browser helps us find information anywhere on the internet. It is installed on the client computer and requests information from the web server such a type of working model is called a client-server model.

The browser receives information through HTTP protocol. In which transmission of data is defined. When the browser received data from the server, it is rendered in HTML to user-readable form and, information is displayed on the device screen.

3.What is server?

A Server is a program or a device that provides functionality for called clients which are other programs or devices. This architecture is called the client-server model.

A single overall computation is distributed across multiple processes or devices. Servers can provide various functionalities called services. These services include sharing data or resources among multiple clients or performing computations for a client. Multiple clients can be served by a single server, and a single client can use multiple servers.

4.What are the types of servers available?

Web Server

Database Server

Email Server

Web Proxy Server

DNS Server

FTP Server

File Server

DHCP Server

Cloud Server

Application Server

Print Server

NTP Server

Radius Server

Syslog Server

Physical Server

5.What is SEO?Importance of SEO?

SEO (search engine optimization) is a set of processes aimed at improving a website's visibility in search engines, like Google, with the goal of getting more organic traffic. SEO is

about fulfilling users' search needs by creating relevant, high-quality content and providing the best possible user experience.

Importance of SEO:

1. Increased Visibility and Traffic

2. Enhanced User Experience

3. Credibility and Trust

4. Cost-Effectiveness

6. What is Accessibility?

Web accessibility means that websites, tools, and technologies are designed and developed so that people with disabilities can use them. More specifically, people can: perceive, understand, navigate, and interact with the Web. contribute to the Web.

7. What is markup language?

A markup language is a set of rules that defines how the layout and presentation of text and images should appear in a digital document. It allows structuring documents, adding formatting, and specifying how different elements should be displayed (or "rendered") on webpages.

8. What is HTML?

HTML is an acronym which stands for **Hyper Text Markup Language** which is used for creating web pages and web applications. Let's see what is meant by Hypertext Markup Language, and Web page.

Hyper Text: HyperText simply means "Text within Text." A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext. HyperText is a way to link two or more web pages (HTML documents) with each other.

Markup language: A markup language is a computer language that is used to apply layout and formatting conventions to a text document. Markup language makes text more interactive and dynamic. It can turn text into images, tables, links, etc.

9. What is browser engine?

A browser engine (also known as a layout engine or rendering engine) is a core software component of every major web browser that is responsible for transforming HTML documents and other resources of a web page into an interactive visual representation on a user's device. Common browser engines include Blink, Trident, Gecko, and WebKit.

10.What is rendering engine? Share the available rendering engine?

In a software application the rendering engine is the module that is responsible for generating the graphical output. Basically the job of a rendering engine is to convert the applications internal model into a series of pixel brightness's that can be displayed by a monitor (or other graphical device e.g a printer). For example in a 3D game, the rendering engine might take a collection of 3D polygons as inputs (as well as camera and lighting data) and use that to generate 2D images to be outputted to the monitor.

Browser	Rendering Engine
Google Chrome	Blink
Mozilla Firefox	Gecko
Apple Safari	WebKit
Microsoft Edge	Blink
Opera	Blink

Brave	Blink
Vivaldi	Goanna(Fork of WebKit)
Internet Explorer 11	Trident
Android WebView	WebRender
Samsung Internet	WebKit

11.What is Javascript engine? Share the available JS engine? Purpose of JS engine?

JavaScript is a scripting language and is not directly understood by computer but the browsers have inbuilt JavaScript engine which help them to understand and interpret JavaScript codes. These engines help to convert our JavaScript program into computer-understandable language.

A JavaScript engine is a computer program that executes JavaScript code and converts it into computer understandable language.

Browser	Name of Javascript Engine
Google Chrome	V8
Edge (Internet Explorer)	Chakra
Mozilla Firefox	Spider Monkey
Safari	Javascript Core Webkit

12.How website works?

Firstly, you enter a domain name or a website address in the search bar. Then the browser passes the request to DNS Server. DNS server acts as an address directory. It converts the human-readable address to a machine-readable address i.e. the IP address of the Website address to a machine-readable address i.e. the IP address of the website.

Then it passes the request to the main server or the server where your site is stored. Then the server provides the response to the browser and now you are able to access the website. The whole process takes hardly 1 or 2 seconds.

13.what is Data structure?

Data structures are the fundamental building blocks of computer programming. They define how data is organized, stored, and manipulated within a prhsogram. Understanding data structures is very important for developing efficient and effective algorithms. In this tutorial, we will explore the most commonly used data structures, including arrays, linked lists, stacks, queues, trees, and graph.

14.Explain Tree Data Structures?

A tree data structure is a hierarchical structure that is used to represent and organize data in a way that is easy to navigate and search. It is a collection of nodes that are connected by edges and has a hierarchical relationship between the nodes.

The topmost node of the tree is called the root, and the nodes below it are called the child nodes. Each node can have multiple child nodes, and these child nodes can also have their own child nodes, forming a recursive structure.

15.What is user agent? Share the list and its purpose?

The User-Agent request header is a characteristic string that lets servers and network peers identify the application, operating system, vendor, and/or version of the requesting user agent.

16.What is hypertext?

HyperText simply means "Text within Text." A text has a link within it, is a hypertext. Whenever you click on a link which brings you to a new webpage, you have clicked on a hypertext. HyperText is a way to link two or more web pages (HTML documents) with each other.

17.What is HTML tags?

HTML tags are like keywords which defines that how web browser will format and display the content. With the help of tags, a web browser can distinguish between an HTML content and a simple content. HTML tags contain three main parts: opening tag, content and closing tag. But some HTML tags are unclosed tags.

18.what is HTML attributes?

HTML attributes provide additional information about elements within an HTML document. Every HTML element can have attributes. Attributes are always defined in the start tag. They are specified using a name/value pair format, where the attribute name defines the property, and its value provides specific details, like name="value". These attributes impact content display and interaction on web pages.

19.What is HTML Elements?

An HTML Element is a collection of start and end tags with the content inserted between them. HTML elements are building blocks of web pages, representing different types of content such as headings, paragraphs, links, and images.

20. How to convert elements to tree?

Converting elements to trees is a fundamental concept in data structures, and it's a crucial step in various algorithms and applications. It involves transforming a linear sequence of elements into a hierarchical tree-like structure, where each element becomes a node, and the relationships between elements are represented by edges.

Methods used are:

Recursive Function

Tree Construction Algorithms.

Graph-Based Methods

21. What is DOCTYPE?

HTML Doctypes declared at the beginning of HTML documents, inform browsers about the document type and version, ensuring correct rendering. They aren't HTML tags but provide essential information. The most common doctype is `<!DOCTYPE html>`, used for HTML5, ensuring modern web standards.

22. What are the ways we can save html file?

We can save html files by using .html or .htm extensions.

23. What is charset? why we need to use this?

HTML Charset is also called HTML Character Sets or HTML Encoding. It is used to display an HTML page properly and correctly because for displaying anything correctly, a web browser must know which character set (character encoding) to use.

The charset attribute specifies the character encoding for the HTML document.

24. What is meta data? What is the purpose of it?

Metadata is defined as the information that describes and explains data. It provides context with details such as the source, type, owner, and relationships to other data sets. So, it can help you understand the relevance of a particular data set and guide you on how to use it.

25. Explain Web Application Architecture?

Web application architecture can be defined as the glue that holds a web application together. It's the framework of a website app and is responsible for the interactions between various application components, including user interfaces, middleware systems, and databases. The general rundown of this web application framework looks like this:

- A user types in the URL into a browser or searches for it through a search engine such as Google.
- The browser locates the URL and requests access by sending data from the server to the browser. The requested page is displayed by the browser's execution.
- The user views the website and interacts with the webpage. Website application development must include all the sub-components and be able to perform all of the external application communications for the entire website for it to communicate correctly. It has to deal not only with making sure the process runs smoothly but also in making sure it stays reliable, stable, and secure.



