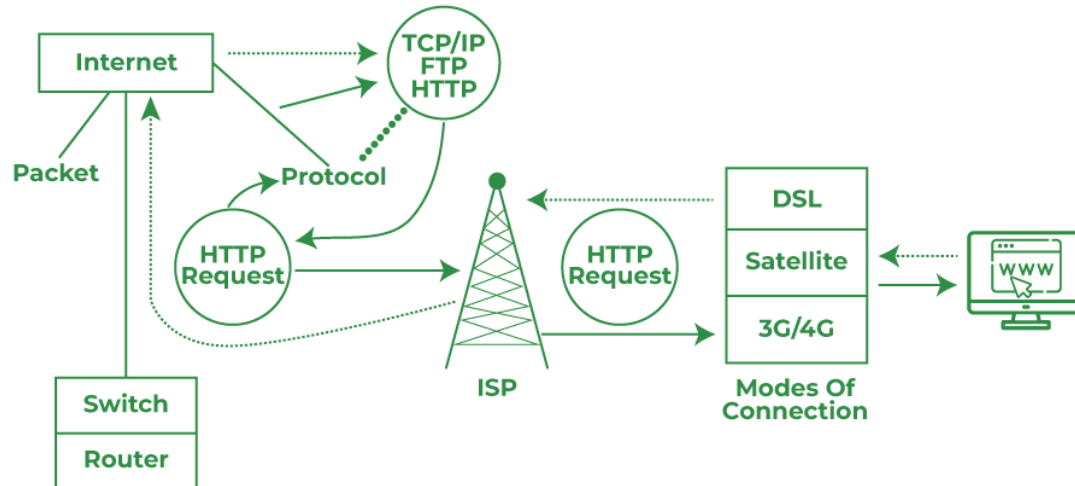


ASSIGNMENT 1

1. How the Internet Works

The Internet is a global network of interconnected computers that communicate using standardized protocols like TCP/IP to transmit data packets. It involves infrastructure components such as routers, servers, and ISPs to enable data exchange and access to web resources.



2. How a Browser Works

A browser sends HTTP requests to servers to retrieve web pages, which are then rendered using a rendering engine. It interprets HTML, CSS, and JavaScript to display content interactively.

3. What is a Server?

A server is a computer system that provides data, resources, or services to other computers (clients) over a network.

4. Types of Servers

Web Server: Hosts websites (e.g., Apache, Nginx)

Database Server: Manages databases (e.g., MySQL, PostgreSQL)

File Server: Stores and manages files

Mail Server: Manages email (e.g., Microsoft Exchange)

5. What is SEO? Importance of SEO?

SEO (Search Engine Optimization) is the practice of improving a website's visibility in search engine results. It is important for increasing organic traffic and enhancing online presence.

6. What is Accessibility?

Accessibility ensures that websites and digital content are usable by people with disabilities, enhancing inclusivity.

7. What is Markup Language?

A markup language uses tags to define elements within a document, enabling structured and formatted content (e.g., HTML, XML).

8. What is HTML?

HTML (HyperText Markup Language) is the standard language for creating and structuring web pages and web applications.

9. What is a Browser Engine?

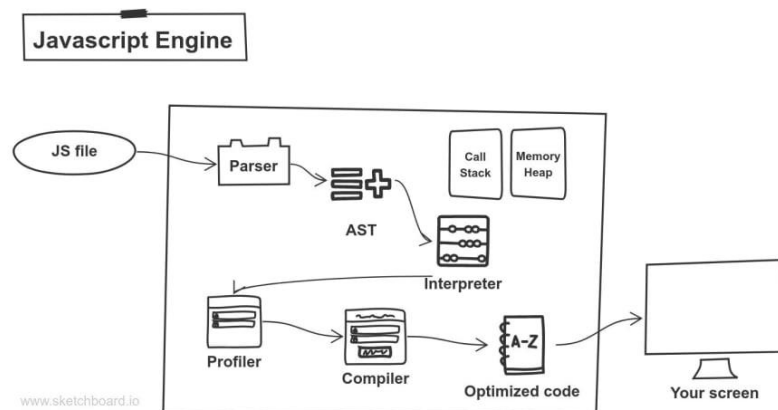
A browser engine is the core software component of a web browser that interprets HTML, CSS, and JavaScript to render web content.

10. What is a Rendering Engine? Available Rendering Engines?

A rendering engine is responsible for displaying web content. Examples include WebKit (Safari), Blink (Chrome), and Gecko (Firefox).

11. What is a JavaScript Engine? Available JS Engines? Purpose of JS Engine?

A JavaScript engine executes JavaScript code. Examples include V8 (Chrome), SpiderMonkey (Firefox), and JavaScriptCore (Safari). It enables dynamic web content.



12. How a Website Works

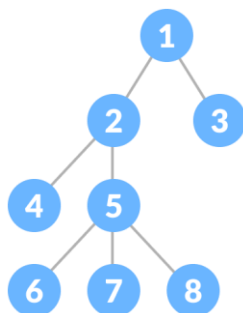
A website is hosted on a server and accessed by users through browsers. When a URL is entered, the browser requests the site from the server, which sends back HTML, CSS, and JavaScript files for rendering.

13. What is Data Structure?

A data structure is a way of organizing and storing data to enable efficient access and modification. Examples include arrays, linked lists, stacks, and queues.

14. Explain Tree Data Structure

A tree is a hierarchical data structure with a root node, branches, and leaves. Each node can have children, used in scenarios like file systems and XML parsing.



15. What is a User Agent? List and Purpose?

A user agent is a string that identifies the browser and operating system to the server. Examples include Mozilla Firefox, Google Chrome, and Safari. It helps servers deliver appropriate content.

16. What is Hypertext?

Hypertext is text displayed on a computer with references (hyperlinks) to other text that the reader can immediately access.

17. What are HTML Tags?

HTML tags are codes that define elements within an HTML document, such as `<p>`, `<a>`, and `<div>`.

18. What are HTML Attributes?

HTML attributes provide additional information about elements, such as `id`, `class`, and `href`.

19. What are HTML Elements?

HTML elements are the building blocks of web pages, defined by tags and their content, such as `<p>Paragraph content</p>`.

20. How to Convert Elements to Tree?

HTML elements can be represented as a Document Object Model (DOM) tree, where each tag is a node, and nested tags are child nodes.

21. What is DOCTYPE?

DOCTYPE is a declaration at the beginning of an HTML document that specifies the HTML version and standards used.

22. Ways to Save an HTML File

An HTML file can be saved using text editors like Notepad, VS Code, or web development environments, with a `.html` extension.

23. What is Charset? Why Use It?

Charset specifies the character encoding for an HTML document, like UTF-8, ensuring proper display of text.

24. What is Metadata? Purpose?

Metadata provides information about an HTML document, such as author, description, and keywords, often used for SEO and indexing.

25. Explain Web Application Architecture

Web application architecture describes the layout and interactions between servers, databases, and clients, typically involving client-side (browser) and server-side (backend) components.

