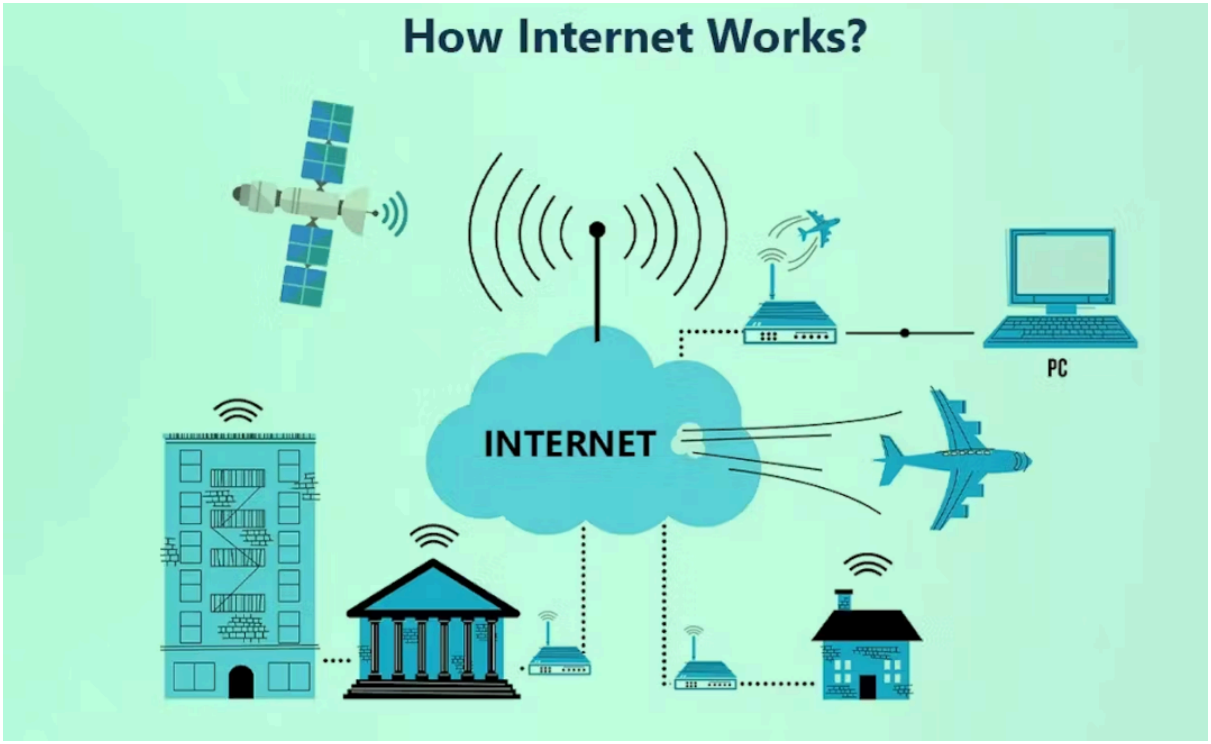
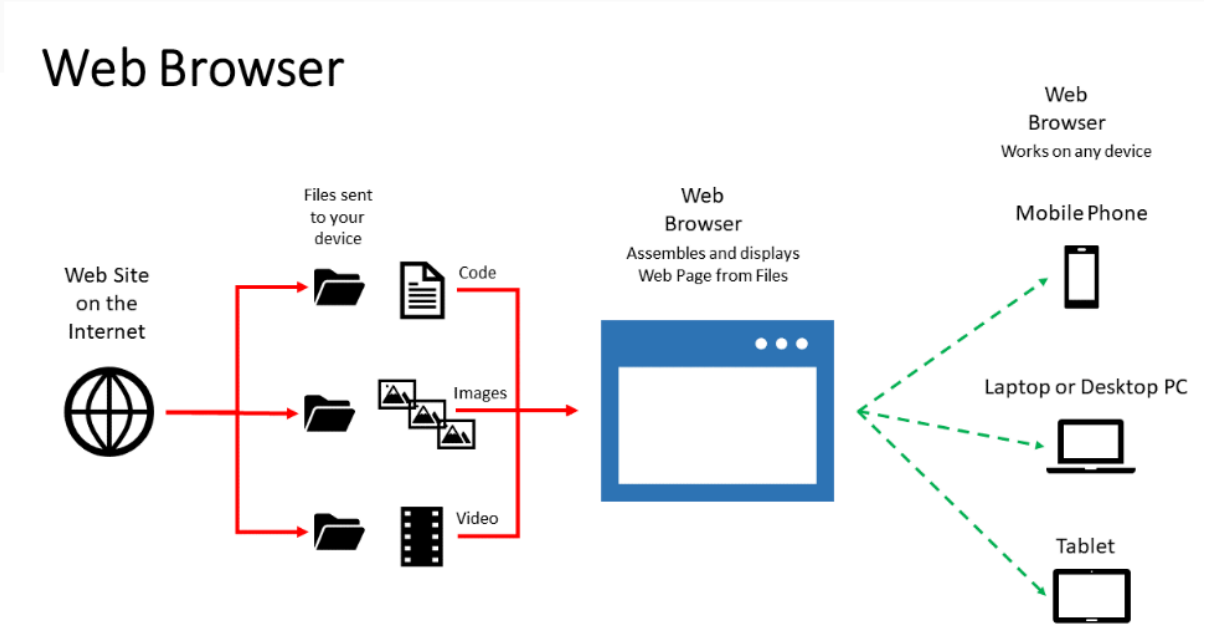
1. How internet works?

Ans: The internet is defined as a global network of linked computers, servers, phones, and smart appliances that communicate with each other using the transmission control protocol (TCP) standard to enable the fast exchange of information and files, along with other types of services.



2. How browser works?

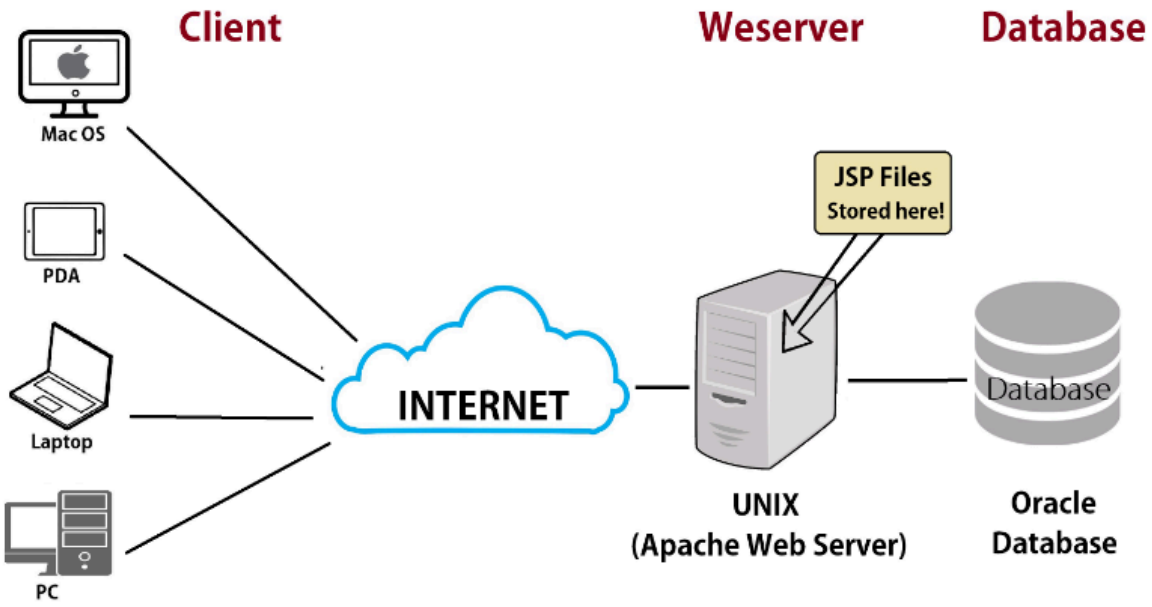
Ans: A web browser takes you anywhere on the internet. It retrieves information from other parts of the web and displays it on your desktop or mobile device. The information is transferred using the Hypertext Transfer Protocol, which defines how text, images and video are transmitted on the web.



3. What is Server?

Ans: A server is a computer or system that provides resources, data, services, or programs to other computers, known as clients, over a network. In theory, whenever computers share resources with client machines they are considered servers. There are many types of servers, including web servers, mail servers, and virtual servers.

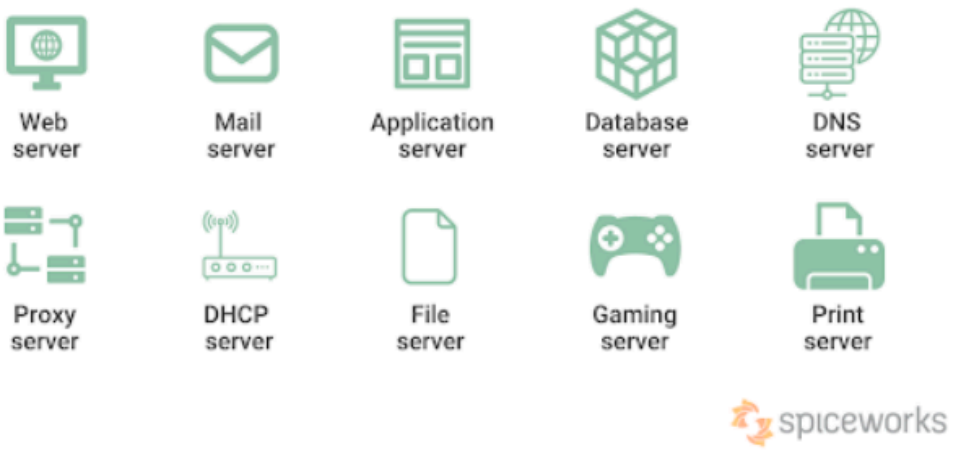
As technology has evolved, the definition of a server has evolved with it. These days, a server may be nothing more than software running on one or more physical computing devices. Such servers are often referred to as virtual servers. Originally, virtual servers were used to increase the number of server functions a single hardware server could do. Today, virtual servers are often run by a third-party on hardware across the Internet in an arrangement called cloud computing.



4. what are the types of server available?

Ans:

1. Web Server
2. Mail Server
3. Application Server
4. Database Server
5. DNS Server
6. ProxyServer
7. DHCP Server
8. File Server
9. Gaming Server
10. Print Server



Server Types

5. What is SEO? Importance of SEO?

Ans: Search engine optimization (SEO) is a set of methods aimed at improving the ranking of a website in search engine listings, and could be considered a subset of Internet or Web marketing. The primary purpose of SEO is to get higher rankings on search engines which in turn creates a larger target audience.

SEO is important for brands as it's a highly effective way to improve your brand's visibility through search, drive more traffic to your website, establish your brand as a trusted authority in your industry, sustainably and reliably grow your business, and much more. Here's how each of these factors contributes to the importance of SEO for your brand.

6. What is Accessibility?

Ans: Accessibility can be viewed as the "ability to access" and benefit from some system or entity. The concept focuses on enabling access for people with disabilities, or enabling access through the use of assistive technology; however, research and development in accessibility brings benefits to everyone.

7. What is Markup Language?

Ans: Markup language, standard text-encoding system consisting of a set of symbols inserted in a text document to control its structure, formatting, or the relationship between its parts. The most widely used markup languages are SGML (Standard Generalized Markup Language), HTML (Hypertext Markup Language), and XML (Extensible Markup Language).

The markup symbols can be interpreted by a device (computer, printer, browser, etc.) to control how a document should look when printed or displayed on a monitor.

8. What is HTML?

Ans: Hypertext: text (often with embeds such as images, too) that is organiased in order to connect related items
Markup: a style guide for typesetting anything to be printed in hardcopy or soft copy format

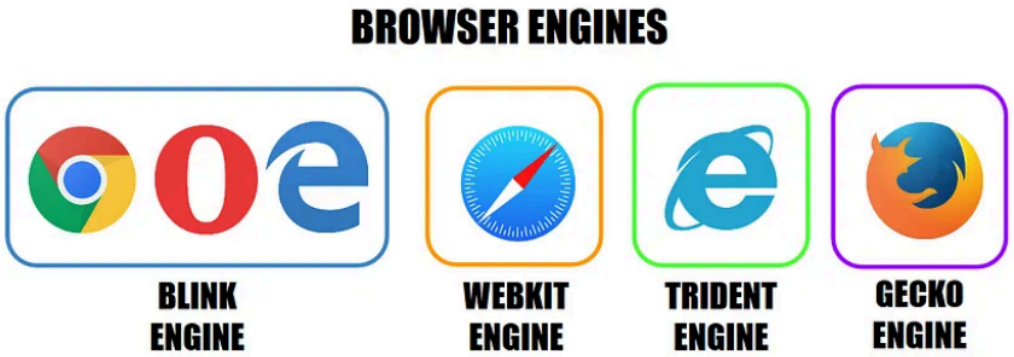
Language: a language that a computer system understands and uses to interpret commands.

HTML determines the structure of web pages. This structure alone is not enough to make a web page look good and interactive. So you'll use assisted technologies such as CSS and JavaScript to make your HTML beautiful and add interactivity, respectively.

9. What is browser engine?

Ans: A web browser is a software application that lets you explore the internet. It retrieves and displays web pages, images, videos, and other content from web servers. Each piece of content has a unique address called a URL (Uniform Resource Locator), which tells the browser where to find it.

While we often focus on the browser itself (Chrome, Firefox, Edge, etc.), each choice also determines the underlying browser engine and rendering engine. These core components work together to create the web experience we see. Though sometimes used interchangeably, they have distinct roles. Here, In this article, we are going to study the browser engine and how it works under the hood.



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

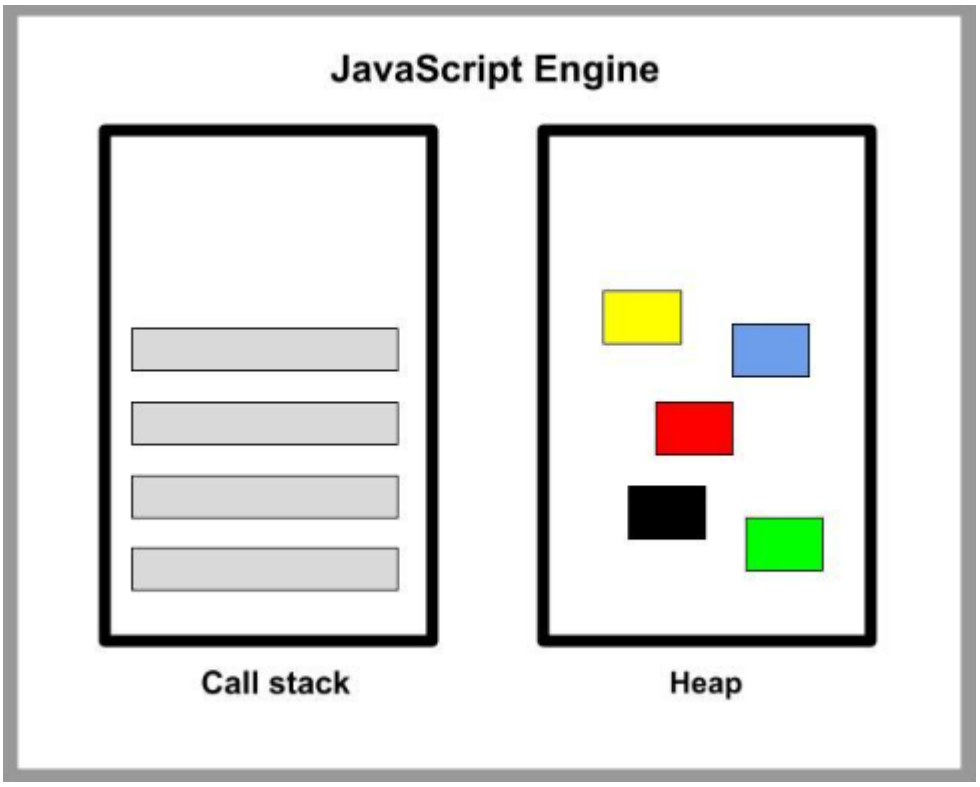
Ans: In a software application the rendering engine is the module that is reasonable for generating the graphical output. Basically the job of a rendering engine is to convert the applications internal model into a series of pixel brightness's that can be displayed by a monitor (or other graphical device 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.

Unity (Unity Engine): A widely-used game engine that includes its own rendering system capable of producing high-quality graphics.
Unreal Engine: Known for its powerful rendering capabilities, Unreal Engine is another popular choice for creating games, simulations, and visualizations..
CryEngine: Developed by Crytek, this engine is renowned for its advanced rendering techniques, particularly for creating realistic environments and lighting effects.
RenderMan: A rendering engine developed by Pixar Animation Studios, RenderMan is widely used in the film industry for creating high-quality CGI (computer-generated imagery).
Arnold: Known for its unbiased, physically-based rendering, Arnold is used in various industries for producing realistic images and animations.
V-Ray: A popular rendering engine used in architecture, automotive design, and visual effects for its realistic lighting and shading capabilities.
Mental Ray: Although no longer actively developed by NVIDIA, Mental Ray was widely used in the past for its global illumination and ray tracing capabilities.

11. What is JavaScript Engine? share the available JS engine? Purpose of JS Engine?

Ans: A JavaScript engine is a software component that executes JavaScript code. The first JavaScript engines were mere interpreters, but all relevant modern engines use just-in-time compilation for improved performance. JavaScript engines are typically developed by web

browser vendors, and every major browser has one.



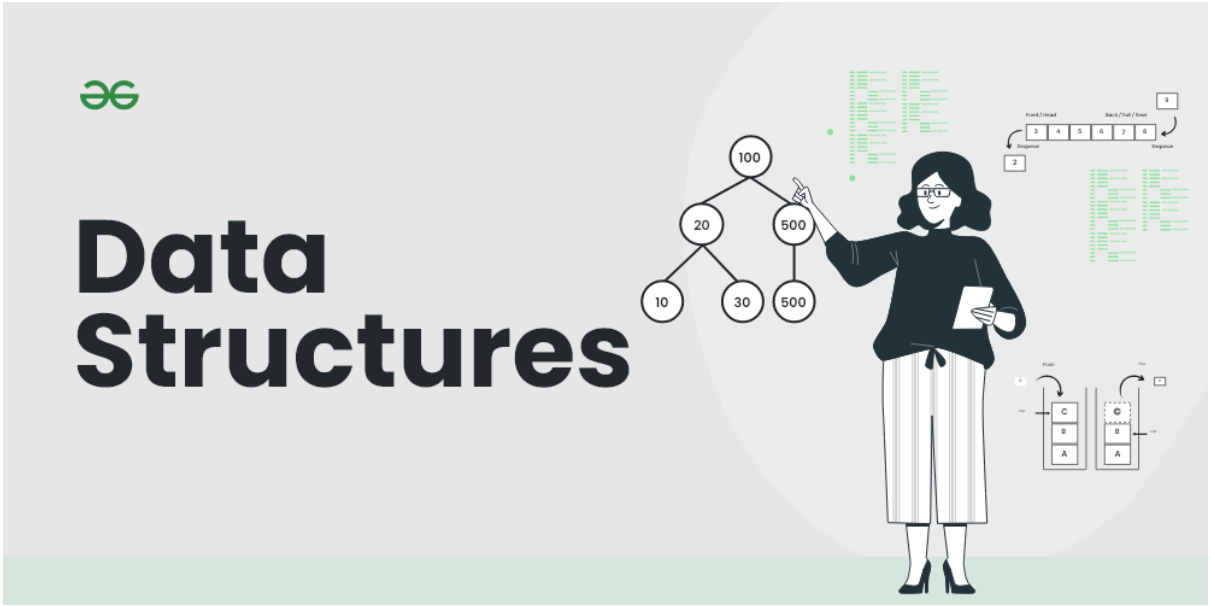
V8: Developed by Google, V8 is used in Google Chrome and also in Node.js. It's known for its performance and efficiency.
SpiderMonkey: Developed by Mozilla, SpiderMonkey is the JavaScript engine used in Mozilla Firefox.
JavaScriptCore (Nitro): Developed by Apple, JavaScriptCore is the engine used in Safari.

12. How website works?

Ans: A website is like a book. And its pages are called ‘webpages’. Just like different books may have different numbers of pages, different websites also have different numbers of web pages. A website can have one or one thousand web pages. And just like different pages may have different text or pictures, different web pages also may have different text or pictures or videos or something else.

13. What is Data Structure?

Ans: Data structure**s** are the fundamental building blocks of computer programming. They define how data is organized, stored, and manipulated within a program. 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 arra**ys,** linked lis**ts,** stacks, queues, trees, and graphs**.**

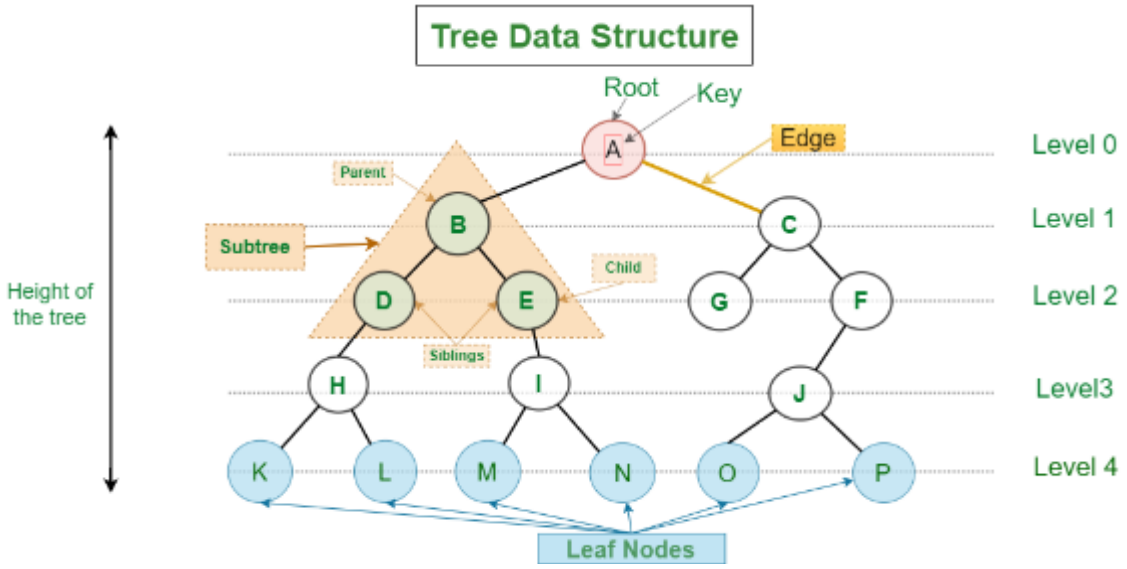


A data structur**e** is a storage that is used to store and organize data. It is a way of arranging data on a computer so that it can be accessed and updated efficiently.

A data structure is not only used for organizing the data. It is also used for processing, retrieving, and storing data. There are different basic and advanced types of data structures that are used in almost every program or software system that has been developed. So we must have good knowledge about data structures.

14. Explain Tree Data Structure?

Ans: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.



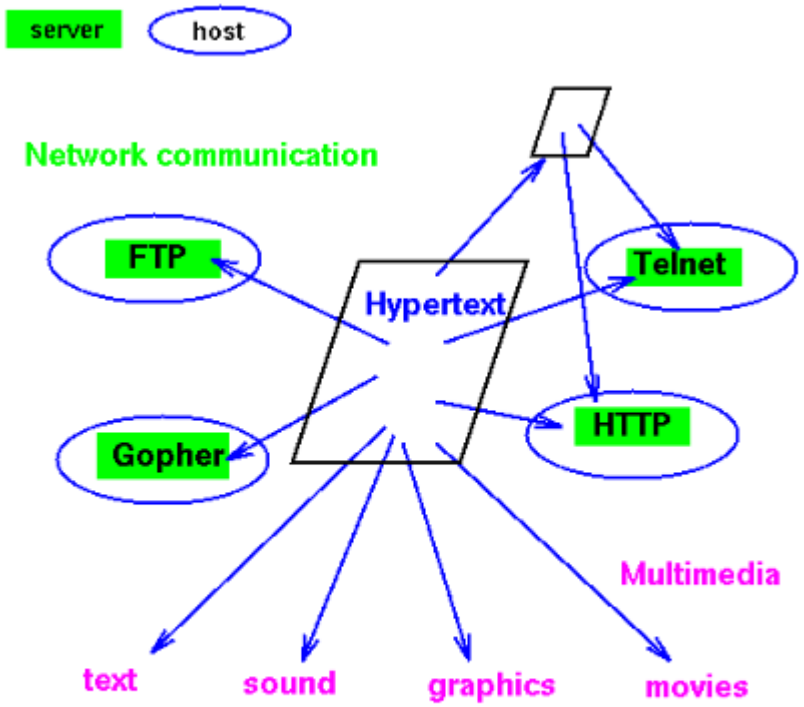
15. What is user agent? share the list and its purpose?

Ans: A user agent acts as an intermediary between a user and the internet, or more precisely, between the user application and the web servers. In its core function, the user agent sends requests to servers and receives responses, which it presents to the user. These software agents can appear in various formats, including as web browsers, which are widely known and used, search engine crawlers, which crawl the Internet for search indexes, and specialized applications such as API-clients and e-mail clients.

16. What is Hypertest?

Ans: The World Wide Web (WWW) combines computer networking (the Internet) and Hypertext MarkUp Language (HTML) into an easy to use system by which people can access information around the world from a desktop computer. Hypertext is the medium used to transmit the information in a non-linear fashion via computer by clicking on a "link" using a mouse.We commonly think of links as the underlined text on graphical Web browsers, such as Netscape and Internet Explore, which, when we click it, takes us to a new document or other type of information. Before there was a graphical Web browser, computer users could

access linked material on the Internet by using a program such as LYNX, a non-graphical Web browser.



17. What is HTML Tags?

Ans: HTML (HyperText Markup Language) is the standard markup language used to create the structure and layout of web pages. HTML documents consist of a series of elements, and these elements are defined using HTML tags. HTML tags are essential building blocks that define the structure and content of a webpage. In this article, we'll explore what HTML tags are, how they work, and provide detailed examples of common HTML tags.

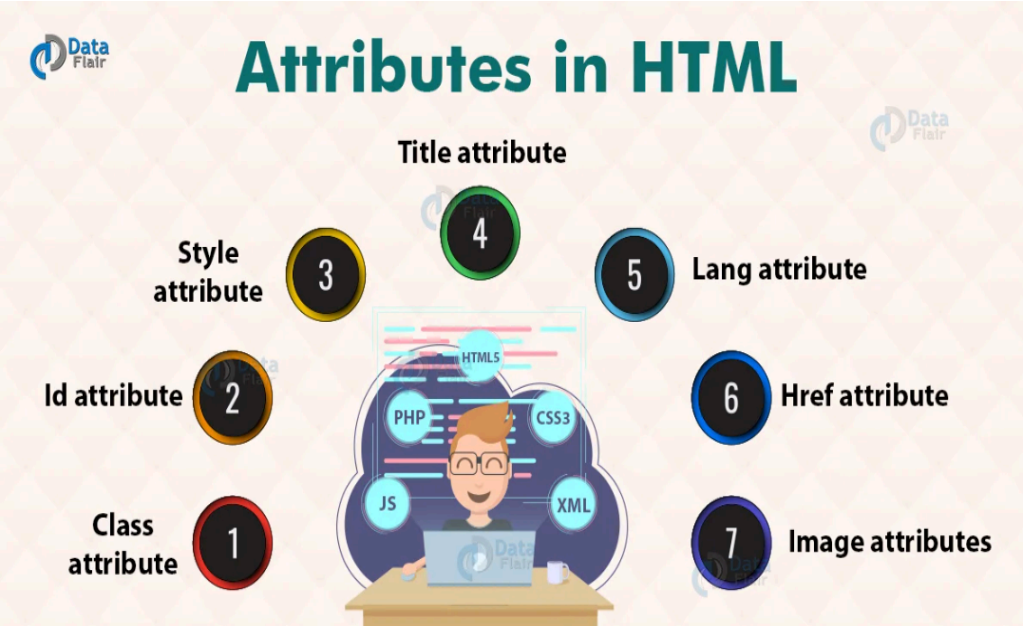
HTML tags are composed of an opening tag, content, and a closing tag. The opening tag marks the beginning of an element, and the closing tag marks the end. The content is the information or structure that falls between the opening and closing tags. Here's the basic structure of an HTML tag:

```
<tagname> Content... </tagname>
```

18. What is HTML Attributes?

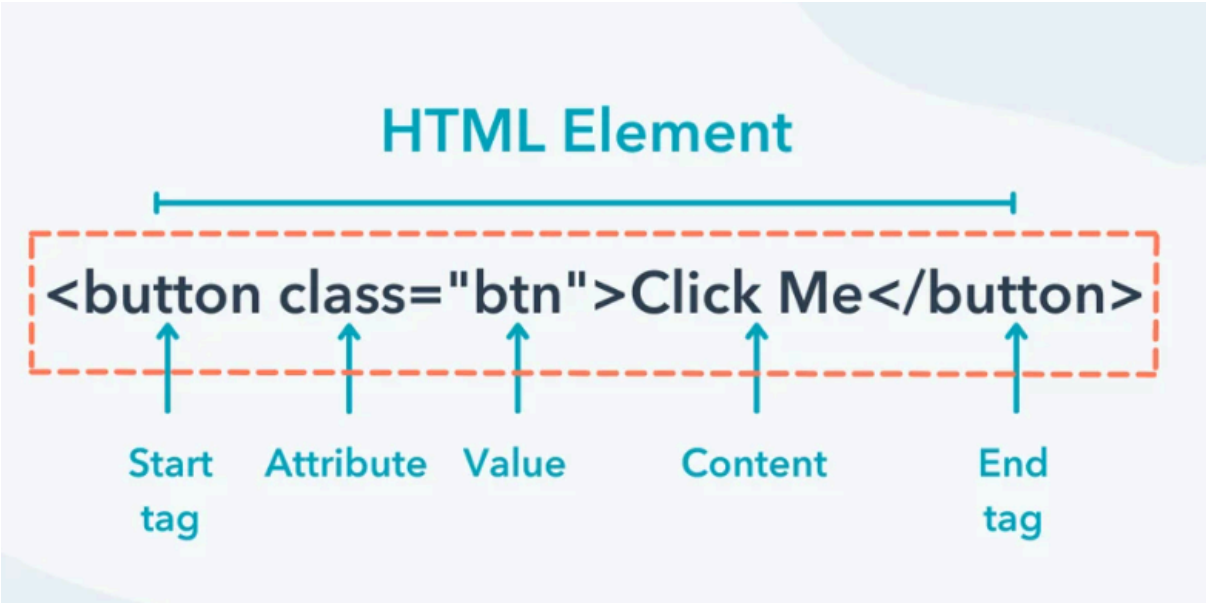
Ans: HTML attributes structure the elements and manipulate their behavior as per the user's jurisdiction and preferences. Attributes are inserted in the opening tags of the elements and have a name-value pair.

- All HTML elements can have attributes
- Attributes provide additional information about elements
- Attributes are always specified in the start tag
- Attributes usually come in name/value pairs like: name="value"



19. What is HTML Elements?

Ans: An HTML element is defined by a start tag, some content, and an end tag.
HTML documents are made up of elements that define content in that webpage. It is made of tags that surround different types of content.



20. How do convert elements to tree?

Ans: We can use the knowledge that the array is sorted . We can divide the array into two equal parts and assign the mid-value as a root node. The elements in the array to the left of

the mid-value would the left subtree and the elements in the array to the right of the mid-value would the right subtree .

21. What is DOCTYPE?

Ans:DOCTYPE stands for "Document Type Declaration." It is an instruction or directive that is used in HTML and XML documents to specify the version and type of the document. The DOCTYPE declaration is not an HTML tag; rather, it informs the web browser or XML parser about the version and type of the document being used, so that it can render the content correctly.

In HTML, the DOCTYPE declaration is typically written at the very beginning of the HTML document, before the <html> tag. It helps the browser to determine how to render the content by indicating whether the document is HTML5, HTML 4.01, XHTML, or another type of HTML document.

This declaration tells the browser that the document is an HTML5 document. In older versions of HTML, such as HTML 4.01, the DOCTYPE declaration was more complex and included a Document Type Definition (DTD) that specified the rules for the markup language.In XML, the DOCTYPE declaration is used similarly to define the document type and may include a reference to an external DTD or schema.

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

Ans: Saving an HTML file can be done in several ways, depending on whether you're creating or downloading the file from a web browser, or saving it programmatically through code. Here are the main methods:

1. Using a Text Editor or IDE
2. Creating HTML File in a Web Browser
3. Using Command Line or Terminal (for advanced users)
4. Programmatically (using programming languages like Python)

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

Ans: The charset attribute specifies the character encoding for the HTML document. The HTML5 specification encourages web developers to use the UTF-8 character set, which covers almost all of the characters and symbols in the world!

charsets are important and why we need to use them:

1. Character Representation
2. Internationalization Support
3. Web Standards

4. Data Integrity

Common charsets include ASCII, UTF-8, ISO-8859-1 (Latin-1), and UTF-16, each with its own rules for encoding characters. UTF-8 has become the dominant charset for web content due to its ability to represent virtually all characters in Unicode while remaining backwards-compatible with ASCII.

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

Ans: Metadata is data about the data or documentation about the information which is required by the users. In data warehousing, metadata is one of the essential aspects.

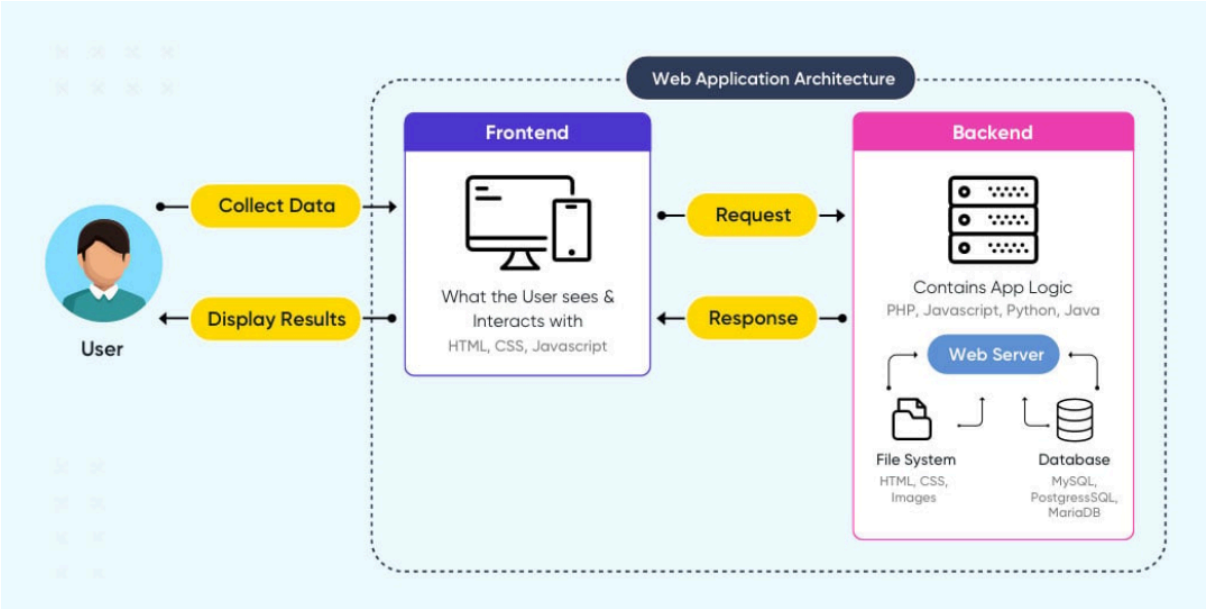
Metadata includes the following:

1. The location and descriptions of warehouse systems and components.
2. Names, definitions, structures, and content of data-warehouse and end-users views.
3. Identification of authoritative data sources.
4. Integration and transformation rules used to populate data.
5. Integration and transformation rules used to deliver information to end-user analytical tools.
6. Subscription information for information delivery to analysis subscribers.
7. Metrics used to analyze warehouses usage and performance.
8. Security authorizations, access control list, etc.

25. Explain Web Application Architecture?

Ans: The web application architecture describes the interactions between applications, databases, and middleware systems on the web. It ensures that multiple applications work simultaneously. Let us understand it with a simple example of opening a webpage.
As soon as the user hits the go button after typing a URL in the address bar of a web browser, it requests for that particular web address. The server sends files to the browser as a response to the request made. The browser then executes those files to show the requested page.

Finally, the user is able to interact with the website. The most important thing to note here is the code parsed by the web browser. A web app works in a similar way.This code might or might not have specific instructions that tell the browser how to respond with respect to the different types of user inputs.


Web Application Architecture
Frontend
Backend
Collect Data
Display Results
User
What the User sees &
Interacts with
HTML, CSS, Javascript
Request
Response
Contains App Logic
PHP, Javascript, Python, Java
Web Server
File System
HTML, CSS,
Images
Database
MySQL,
PostgressSQL,
MariaDB