

## **1. What is client-side and server-side in web development, and what is the main difference between the two?**

### **Answer---**

Client-side in web development refers to the part of the application that runs on the user's device, handling tasks such as rendering web pages and user interactions. On the other hand, server-side refers to the part that runs on the server, responsible for processing requests, executing business logic, and accessing databases. The main difference between the two is that client-side focuses on the presentation and interactivity, while server-side handles the backend processing and data management.

## **2. What is an HTTP request and what are the different types of HTTP requests?**

### **Answer---**

An HTTP (Hypertext Transfer Protocol) request is a message sent by a client (usually a web browser) to a server to initiate a specific action or retrieve information. It is a fundamental concept in web communication, where clients request resources from servers, and servers respond with the requested data.

There are several types of HTTP requests, each serving a different purpose:

**GET:** The GET request is used to retrieve data from a specified resource. It is the most common type of request and is typically used to fetch HTML pages, images, stylesheets, or other static content from a server.

**POST:** The POST request is used to submit data to be processed by the server. It is commonly used when submitting forms, uploading files, or making API requests that modify server-side data. The data sent with a POST request is included in the body of the request.

**PUT:** The PUT request is used to update or replace an existing resource on the server. It requires the client to send the entire updated representation of the resource in the request body. If the resource does not exist, it may be created.

**DELETE:** The DELETE request is used to delete a specified resource on the server. It instructs the server to remove the specified resource permanently.

**PATCH:** The PATCH request is used to partially update a resource on the server. It is similar to the PUT request but only requires the client to send the specific changes to be applied, rather than sending the entire updated representation.

### **3.What is JSON and what is it commonly used for in web development?**

#### **Answer-**

JSON stands for JavaScript Object Notation

JSON is a lightweight data-interchange format

JSON is plain text written in JavaScript object notation

JSON is used to send data between computers

JSON is language independent

The JSON syntax is derived from JavaScript object notation, but the JSON format is text only.

Code for reading and generating JSON exists in many programming languages.

The JSON format is syntactically similar to the code for creating JavaScript objects. Because of this, a JavaScript program can easily convert JSON data into JavaScript objects.

Since the format is text only, JSON data can easily be sent between computers, and used by any programming language.

JavaScript has a built in function for converting JSON strings into JavaScript objects:

`JSON.parse()`

JavaScript also has a built in function for converting an object into a JSON string:

`JSON.stringify()`

You can receive pure text from a server and use it as a JavaScript object.

You can send a JavaScript object to a server in pure text format.

You can work with data as JavaScript objects, with no complicated parsing and translations.

#### **Storing Data**

When storing data, the data has to be a certain format, and regardless of where you choose to store it, text is always one of the legal formats.

JSON makes it possible to store JavaScript objects as text.

### **4.What is a middleware in web development, and give an example of how it can be used.**

**Answer-**

Middleware is a commonly used term in web development. It can mean many things depending on the context, which makes the term a bit confusing.

Middleware is a software that acts as an intermediary between two applications or services to facilitate their communication.

You can think of it as a proxy that can act as a data accumulator, translator, or just a proxy that forwards requests.

**5.What is a controller in web development, and what is its role in the MVC architecture?****Answer-**

The controller accepts user requests, interacts with the model and selects the view for response.

The **Model-View-Controller (MVC)** framework is an architectural pattern that separates an application into three main logical components Model, View, and Controller. Hence the abbreviation MVC. Each architecture component is built to handle specific development aspect of an application. MVC separates the business logic and presentation layer from each other. It was traditionally used for desktop graphical user interfaces (GUIs). Nowadays, MVC architecture in web technology has become popular for designing web applications as well as mobile apps.