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

=> **Client Side:** Client side is the visible part of website.This includes what the user sees, such as contents, text, images, and the rest of the UI, along with any actions that an application performs within the user browser.

Server-side: Server side means everything that happens on the server. All Business Logic run on the server side. Serer side works with redering webpages, Inaracting with database, Verify authentications and many more.

The main difference between Client side and Server side: One of the main differences between server-side and client-side processes is the amount of control and access to resources that each has. Server-side processes have access to the server's resources, such as its CPU, memory, and storage, as well as any databases or other servers that the web application uses. Client-side processes, on the other hand, have access only to the resources of the user's device, such as its CPU, memory, and storage.

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

=> All request Send as HTTP Request from client side to server side. The method designates the type of request being made to the web server. The most common types of request methods are GET and POST but there are many others, including HEAD, PUT, DELETE, CONNECT, and OPTIONS. GET and POST are widely supported while support for other methods is sometimes limited but expanding.

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

=> JSON stands for JavaScript Object Notation. JSON is a text format for stroing and transporting data. The JSON format is syntactically identical to the code for creating JavaScript objects. Because of this similarity, a JavaScript program can easily convert JSON data into native JavaScript objects.

In the web development, you can send data in the format of JSON, which will take less time to transfer as it is very lightweight. You can send the data to any platform from your database. It is mostly used while creating an API for mobile applications communication.

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

=> Middleware is a special types of controller executed after request but before in response.It is a type of filtering mechanism to ensure API securities and more.
Middleware acts as a bridge between a request and a response.

Imagine a user want to request an authenticated resource for example the user profile. This user will successfully retrieve the profile if only if he is authenticated. Before your system send the request directly to your application code where it handle retrieving the profile, it will first do checking in middleware if the request can pass through or not, for example check for user is already login or if their login session is still valid or etc. This is just on of the example, there are many various use cases.

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

=> A controller is a program component that serves as a mediator between a user and application and handles business-related tasks.

MVC stand for Model – View – Controller , Controller is a important part of MVC Architecture. Controller make logic to response upon users requests. Imagine that a user requested for Register an account . In that part user will send request from website signup or register page. In that case controller will check that , is the user filled all required fileds or not! Controller is very important part to make business logic and other kind of logic in a applications.