**6.** **Introduction to Client-Server Architecture**

**• Theory:**

**1.Overview of client-server architecture:-** Client-server architecture is a design model for applications where tasks or workloads are divided between service providers (servers) and service requesters (clients). It is commonly used in network computing, where multiple clients interact with a centralized server to request services or resources.

**2. Difference between client-side and server-side processing:-**

**1. Client-Side Processing**

Client-side processing occurs on the user's device (the client)usually a web browser or mobile app. In a typical web application, the client is the user's browser or app that interacts with the server.

**2. Server-Side Processing**

Server-side processing occurs on the server. The client sends requests to the server, which processes the request (e.g., fetching data from a database, performing complex computations) and sends the result back to the client.

**3. Roles of a client, server, and communication protocols:-**

**1. Roles of the Client**

The client is the entity that initiates requests for services, data, or resources. It is typically a device or application that interacts with the server over a network (e.g., a web browser, mobile app, or desktop application).

**2. Roles of the Server**

The server is the provider in the client-server architecture. It listens for requests from clients, processes them, and returns the appropriate responses. The server manages the resources and logic necessary to fulfill client requests.

**3. Roles of Communication Protocols**

Communication protocols define the rules, formats, and procedures for data exchange between the client and server. These protocols ensure that both parties understand how to structure, transmit, and interpret the data being exchanged.