Capacity Estimation

Capacity estimation is a critical aspect of system design that involves predicting the maximum workload a system can handle while maintaining acceptable performance levels.

It aims to ensure that the system has sufficient resources such as processing power, memory, network bandwidth and storage to meet the expected demand.

To understand or perform capacity estimation, system designers consider various factors which includes

1. [Workload characterization]: Understanding the nature and characteristics of the workload, such as number of users etc.
2. [Performance Requirement]: Defining the desired performance metrics such as response time.
3. [Resource Constraints]: Identifying the available resources, including hardware capabilities, software limitations.
4. [Scalability]: System's ability to handle increased workloads in the future, either by scaling up or scaling out.

Visit :
https://-medium.com/@jeyabalaji5/capacity-estimation-in-system-design-89cbd0d3a0f for better understanding and practice.

HTTP and HTTPS protocol

→ Hypertext transfer protocol (HTTP) is an application layer protocol that is used to access and transfer data (text, images, video, multimedia etc.)

→ HTTP uses port number 80.

→ HTTP is a client-server protocol that runs on top of the TCP/IP protocol and uses the request/response protocol.

→ In HTTP, the client sends a request message to the server. After the client responds, HTTP establishes a TCP connection between the client and the server. HTTP delivers a request to the server, which collects the data that was requested. After the server sends data to a client, the connection will be terminated.

→ If we want something else from the server, we have to reestablish the connection b/w client and server.

→ Features of HTTP

① HTTP is connectionless, which means the client-server connection is closed and that same connection is never

used again.

② HTTP is media independent, means that any sort of data can be send unless the client and server knows how to process the data.

③ HTTP is stateless, meaning client and server only knows each other until the connection is there, after that they forget each other.

HTTPS

→ Hypertext transfer protocol secure is a extension of HTTP that is used for providing security to the data sent over the world wide web.

→ This protocol allows the transferring the data in an encrypted form.

→ To encrypt communication HTTPS uses an encryption protocol called Transport layer security (TLS) formerly known as secure sockets layer (SSL)

→ HTTPS protocol uses port number 443 for communication.