

Internet → Interconnection of computers.

The internet was the brainchild of the U.S. Military. They used ARPNET to connect their internal systems together. This was the underlying foundation of the internet.

COMMON TERMINOLOGIES.

HTTP : Hypertext Transfer Protocol. → It is an internet protocol which uses the concept of hypertext to connect different resources on the internet together.

HYPERTEXT
↓
Text which can link to
other documents / resources
on the internet.

HTTPS : Secured HTTP → The data sent through HTTPS is secured through encryption.

Server: A specialized computer/node on the internet whose job is to do two things:—

- (i) Serve data to the users / clients
- (ii) Fetch and process data coming from a database.

Client → A computer / node on the internet which consumes data being served by the server. Eg: our web-browsers, mobile phone, tablets etc.

Server:

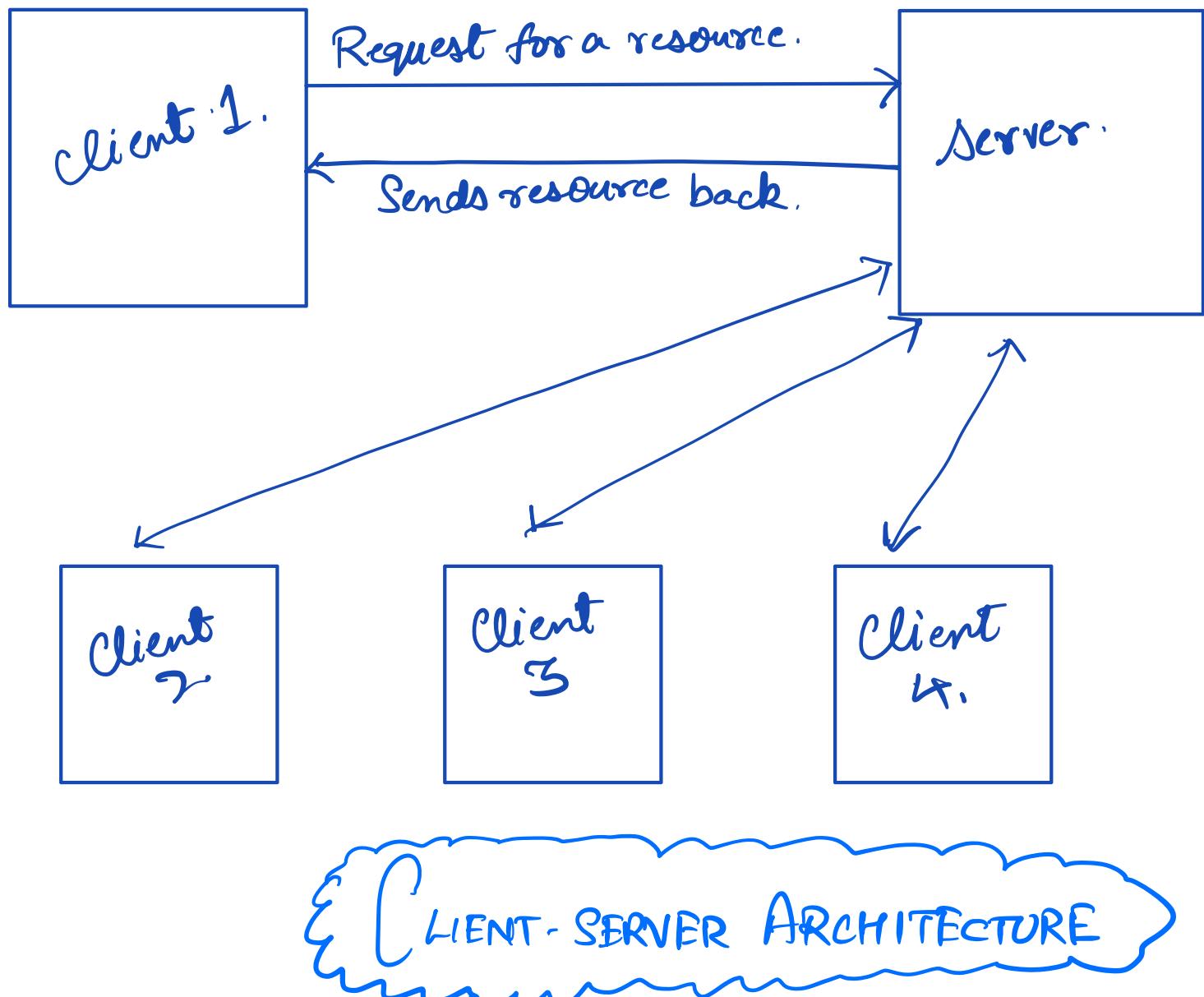
① Specialized and powerful hardware to process large no. of client requests.

② Limited capabilities in terms of doing diff tasks.

Client

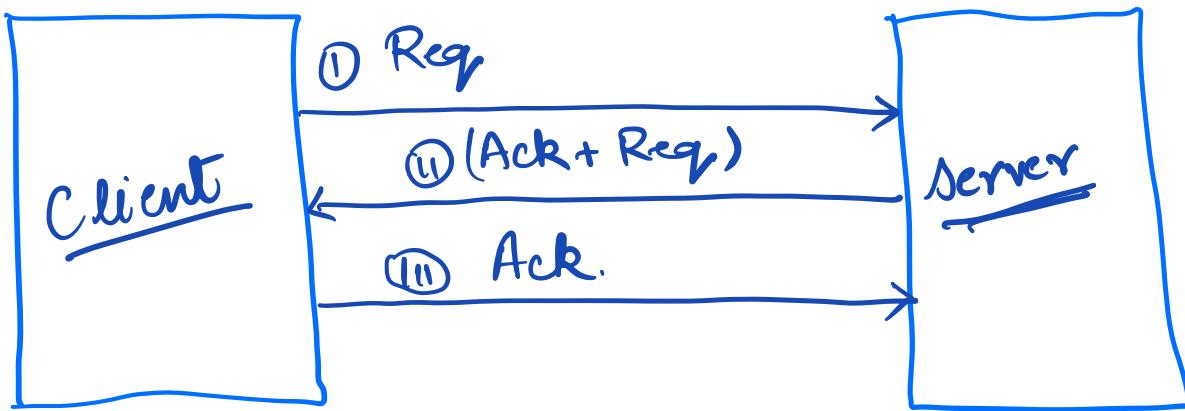
① Average low system specs. The hardware of a client is often less than that of a server.

③ Can do multitude of tasks at once.



Three-way handshake : It is a mechanism by which a client and a server establishes a secure and a reliable connection between them for data sharing.

A three way handshake is used by the TCP/IP. for reliable data transmission b/w the client and the server.



(i) Client sends a request to establish connection

Req: Request to establish connection

(ii) Server listens to the request and sends an acknowledgement. The server also includes a request to send some data to the client along with it.

Ack: Acknowledging the request

(iii) Client listens to the request and sends an acknowledgement back.

Internet Protocols.

There are different internet protocols governing the internet. Internet protocols are rules which establishes the

ways data should be shared across the different nodes on the internet. Some of the ip are given down below :—

- (a) TCP/IP (Transmission Control)
- (b) UDP (User Datagram Protocol)
- (c) HTTP (Hypertext Transfer Protocol)
- (d) HTTPS. (Secured HTTP)
- (e) FTP (File Transfer Protocol)
- (f) SMTP (Simple Mail Transfer Protocol)



Introduction to HTML / HTML Tags.

HTML or Hypertext Markup Language is a markup language used to control the flow and formatting of the content of the webpage.

The rules of formatting of the content on the webpage is dictated by HTML tags.

<tag-name> Content </tag-name>.

CLOSED TAG.

<tag-name />

OPEN/ SELF-CLOSING
TAG.

Any HTML file has an extension of .html / .htm.
HTML is case insensitive.

<DOCTYPE html> → Tells the browser about type of doc

<html> → Start of any HTML file

<head> → Contains meta data, title, style & link.

<meta />.

<meta />.

<title> ... </title>.

</head>.

<body> </body> → Main HTML of the page.

</html>. → End.

Basic HTML tags.

Heading tags : h1, h2, h3, h4, h5, h6. (Closed)

Paragraph tags : <p> (Closed)

Span tag : (Closed)

List tags : (i) Unordered list → (Closed)
(ii) Ordered list → (Closed)

List item tag : (Closed) (used with ul & ol)

Anchor tag : (Closed)

Button tag : <button> ()

Division tag : <div> ()

Section tag : <section> ()

Article tag : <article> ()

Header tag : <header> ()

Navigation tag : <nav> ()

Footer tag : <footer> ()

Image tag : (Open)

Video tag : <video> (Open)

Form tag : <form> (Closed)

Input tag : <input /> (Open)

Table tag : <table> (Closed)

Semantic HTML → HTML tags which portrays meaning of the content are called Semantic HTML.

For eg :

If making a header, use the `<header>` instead of `<div>`

If making a footer, use the `<footer>` instead of `div, section` etc

The choice of HTML tags is completely upto the developer. But one should try to choose semantic HTML for the markup.

- Browsers / web crawlers can understand semantic HTML and reason about the content of the webpage, resulting in better SEO.

- Readability / maintainability increases.

HTML tags can be nested and a relationship can be established between them

<div>

<h1> Hello </h1>

<p> Welcome back! </p>

<div> <h2> Nested </h2> </div>

</div>

Ancestor → Parent → Child → Descendant

- h1 is child of div.
- h2 is descendant of outer div.
- h1 and p are siblings.
- Inner div is parent of h2.

HTML Forms.

- ✓ Used to take user input and send the data to the server.
- ✓ Native input types are available in HTML.
- ✓ Default behaviour of HTML form refreshes the page and appends data in the URL

Tags used in HTML forms .

- (i) <form></form>
- (ii) <input />.
- (iii) <label></label>
- (iv) <button type= "Submit"></button>

Every input inside the HTML form needs to have a "name" attribute so as to identify the type of data being sent to the server.

Common types of input used :—

- (a) text
- (b) email
- (c) password
- (d) radio
- (e) checkbox .
- (f) date
- (g) <Select> html tag .

* Every form field in the form must be associated with a label for better accessibility.

```
<Label to="name">First Name </label>
<input type="text" id="name" />
```