Lecture 1 Notes: What is the Internet?

Apna College – Web Development Batch (Step-by-Step, Hinglish Explanation)

1) Internet Kya Hai?

1. Internet ek **global network of networks** hai – duniya bhar ke computers, phones, servers ek■dusre se judhe hote hain.
2. Har connected device ka ek unique **IP Address** hota hai (jaise ghar ka address).
3. **Client** (aapka laptop/phone) request bhejta hai; **Server** 24×7 online hota hai aur data/service provide karta hai.

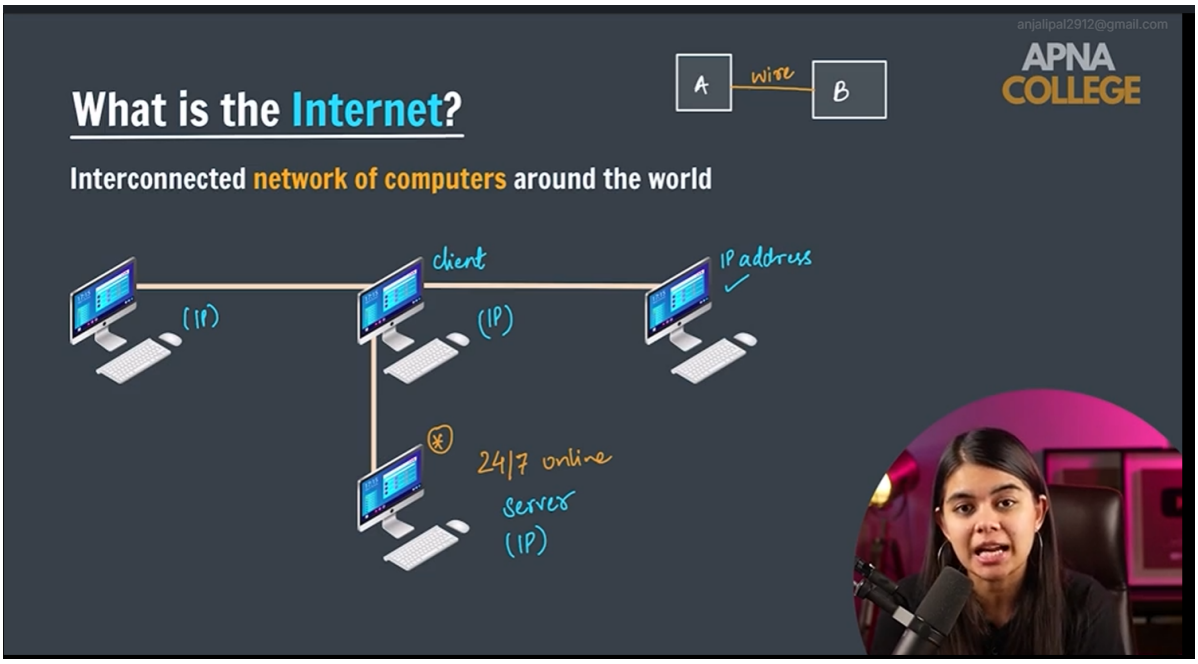


Fig. 1 – Clients aur Servers IP address ke saath connected networks.

2) Important Components

Term	Simple Meaning (Hinglish)
Client	User ka device jo request bhejta hai (browser/app).
Server	Powerful computer jo website/files host karta hai, hamesha online.
IP Address	Number format address (e.g., 142.250.190.78) jisse device identify hota hai.
Domain	Human-friendly name (e.g., google.com) jo IP ko represent karta hai.
ISP	Internet Service Provider – Jio/Airtel/BSNL etc. jo internet access deta hai.
DNS	Domain Name System – domain ko IP me translate karta hai (jaise contact list).

3) Request–Response Flow (Step-by-Step)

Example: Browser me **amazon.com** type kiya.

1. Aapka **Client** (browser) request banata hai.
2. Request pehle aapke **ISP** (Jio/Airtel) ke paas jaati hai.
3. ISP ko domain ke corresponding **IP Address** chahiye hota hai, isliye woh **DNS** ko poochta hai.
4. **DNS** domain name (amazon.com) ko correct IP address me **resolve** karta hai.

5 IP milte hi request actual **Server** tak pahunchti hai.
6 Server response (HTML/CSS/JS/images) bhejta hai.
7 Aapka browser response ko render karke web page dikhata hai.

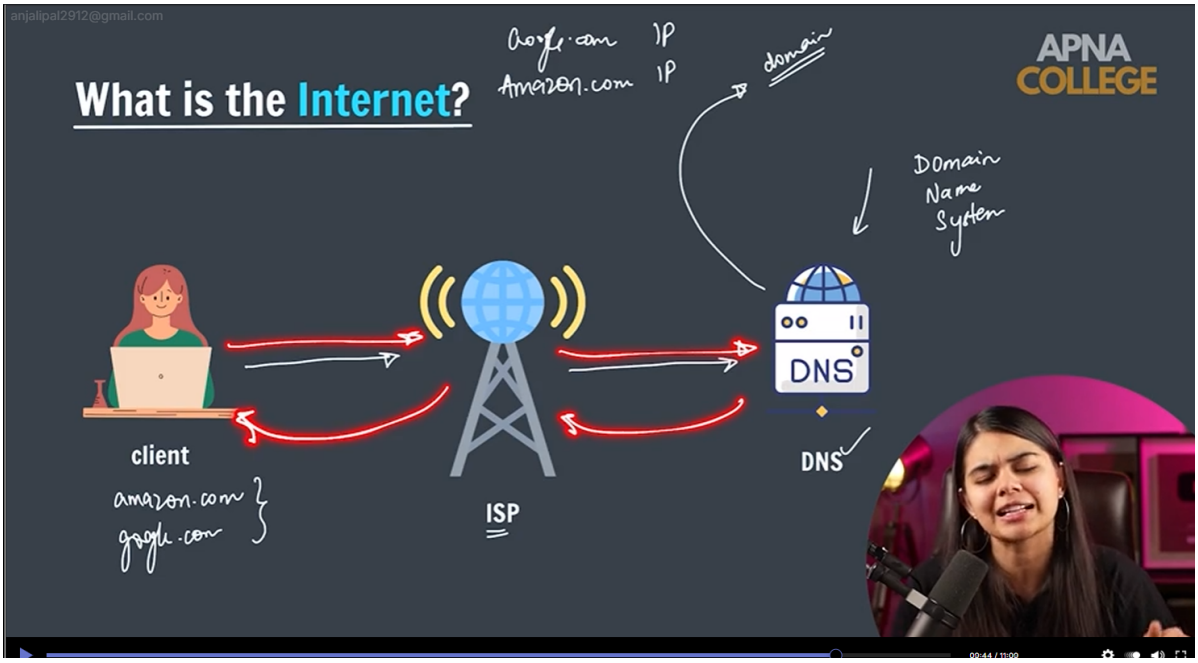


Fig. 2 – Client → ISP → DNS → Server → Client ka round■trip flow.

4) Easy Analogy (Yaad Rakhne ke liye)

- Domain Name = Contact list me saved naam ("Mummy").
- IP Address = Actual phone number.
- DNS = Contact list jo naam ko number me convert kare.
- Call (Request) = Aapka browser ka request.
- Person picking call (Server) = Website ka server jo jawab bheje.

5) Quick Revision Checklist

- Internet = Network of networks.
- Client vs Server difference clear?
- IP address kyon zaroori?
- DNS kya karta hai?
- ISP ki role?

6) Practice Questions

1 DNS ka full form aur role explain kijiye.
2 Client aur Server me 3 differences likhiye.
3 Domain name ke bina bhi website khul sakti hai? Kaise?
4 ISP ka kya kaam hai? Do examples dijiye.
5 IP Address aur Domain me relation explain kijiye.

Tip: Practical samajhne ke liye, Windows/Mac me **ping google.com** run karke uska IP dekhiye.

Lecture 2 Notes: What is Web Development?

Step-by-step Hinglish explanation based on your 3 slides.

Slide 1 – Web development = Building websites for the internet.

Simple Definition

Web development ka matlab hai internet par chalne wali websites ya web■apps banana. Isme do main parts hote hain: **Front■End** (jo user dekhe/operate kare) aur **Back■End** (server, logic, database). Dono ko saath me karne wale ko **Full■Stack Developer** kehte hain.

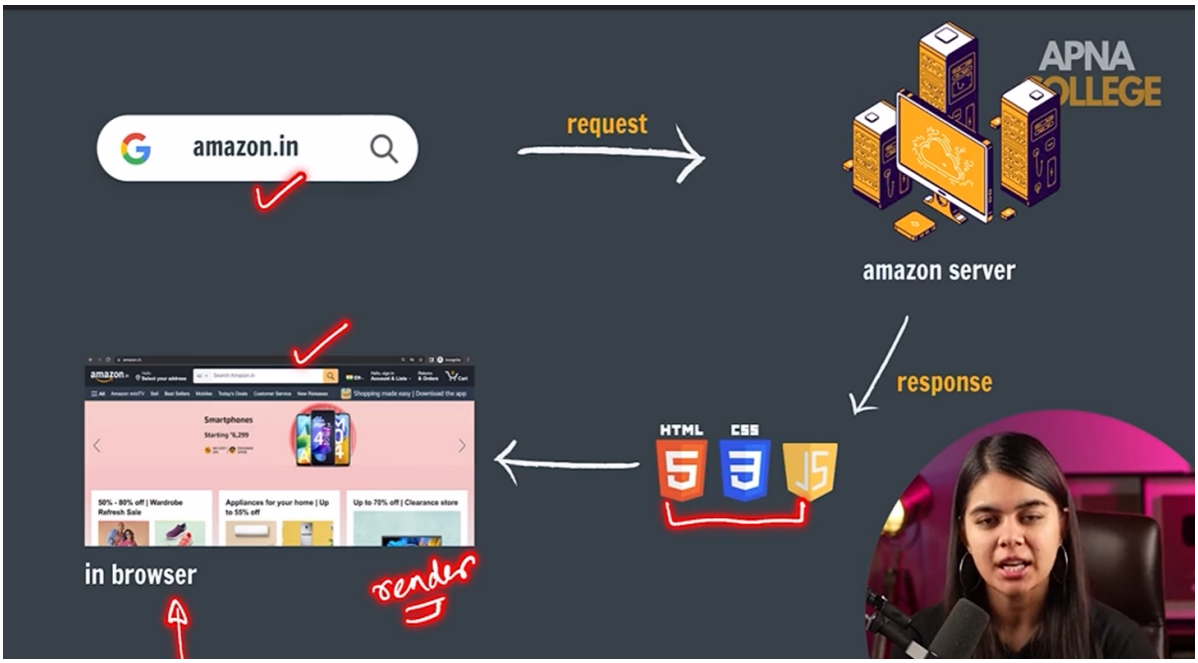
Slide 2 – HTML, CSS, JavaScript ki roles (Dino analogy).

Teen Pillars (Easy Analogy)

- **HTML = Structure:** Page ka skeleton. Headings, paragraphs, images, buttons, forms – sab HTML se bante hain.
- **CSS = Style:** Rang, font, size, spacing, layout, responsive design (mobile/desktop) – sab CSS se hota hai.
- **JavaScript = Behavior:** Page ko zinda banata hai – clicks, form validation, animations, data ko server se lana (APIs).

Browser Page Render Ka High■Level Flow

1. Browser HTML padhta hai aur **DOM tree** banata hai.
2. CSS files padhkar **CSSOM** banta hai. DOM + CSSOM milkar **Render Tree**.
3. Layout/position calculate hota hai (kabhi 'reflow' bhi kehte hain). Phir pixels screen par **paint** hote hain.
4. JavaScript DOM ko change kar sakta hai (text badalna, elements add/remove), isse page dynamic banta hai.



Slide 3 – amazon.in example: request → response → render.

Website Kaise Load Hoti Hai? (amazon.in Example)

1. Address bar me **amazon.in** type kiya.
2. **DNS** se is domain ka **IP address** milta hai (Lecture■1 concept).
3. Browser **HTTP/HTTPS request** Amazon ke **server** ko bhejta hai.
4. Server **response** me HTML bhejta hai; HTML me CSS/JS files ki links hoti hain.
5. Browser HTML parse karta hai, saath me CSS/JS/image/fonts ko parallel download karta hai.
6. CSS apply hoti hai, JS execute hota hai (buttons, search, cart, etc.).
7. Final page screen par **render** hota hai; aage ke data (APIs) background me aata rehta hai.

Quick Revision

- Web Dev = Front■End + Back■End (Full■Stack = dono).
- HTML structure deta hai, CSS style deta hai, JS behavior deta hai.
- Browser: Request → Server: Response (HTML/CSS/JS) → Browser: Render.

Mini Practice

- Ek index.html banao – heading, paragraph aur ek button add karo.
- CSS me button ko padding, border■radius, margin do.
- JavaScript se button click par alert dikhao ya text change karo.

Lecture 3: HTML Elements & Tags

Lecture 3: HTML Elements & Tags (Detailed Notes)

1. HTML Elements:
- HTML (HyperText Markup Language) is the structure of a webpage.
- An element is a complete unit which defines a piece of content.
- Standard elements browser recognizes:
• Paragraph: Content
• Heading: <h1>Heading</h1>
• Image: <img src="image.jpg" alt="description">

➡■ Elements are building blocks of a website. Each element may contain text, images, or other elements.

---

2. HTML Tags:
- Tags are the keywords enclosed in angle brackets <> used to define HTML elements.
- They usually come in pairs: Opening Tag and Closing Tag.

Example:
This is a paragraph

• : Opening tag
• : Closing tag
• Content: "This is a paragraph"
• Element: Everything from opening to closing tag

■ Analogy: Think of tags as containers, and content as the item inside the container.

---

3. Important Tags Covered:
- <h1>, <h2>, ... <h6>: Headings, from largest to smallest
- : Paragraph
- <b>: Bold text
- <i>: Italic text
- <img>: Image tag, requires 'src' (source) and 'alt' (description)

---

4. Key Takeaways:
- HTML provides structure, NOT style or behavior.
- Tags are the core syntax of HTML.
- Always close tags properly to avoid rendering issues.

TML Boilerplate & 'Hello World' — Step-by-Step Note

Ye PDF us lecture/screenshot par based hai jisme VS Code me basic HTML boiler

World!</p> dikh raha tha.

Goal: (1) Har line ka meaning samajhna, (2) VS Code me jaldi se page banana,

simple tricks.

Boilerplate kya hota hai?

- Boilerplate = kisi bhi HTML page ka skeleton (basic dhacha).
- 4 blocks yaad rakho: 1) <!DOCTYPE html> 2) <html lang='en'> 3) <head>...<
  <body>...</body>.
- <head> me browser/SEO/settings jaise meta info hoti hai; <body> me user ko
  hai.

Clean Code (Copy-Paste Ready)

Note: HTML me '{' '}' nahi aate. Agar screenshot me '}' dikha tha to usse hat

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>My Boilerplate Code</title>
  </head>
  <body>
    <p>Hello World!</p>
  </body>
</html>
```

<head> ke andar kya aur kyon?

- <!DOCTYPE html> – Browser ko bolta hai ki document HTML5 hai.
- <html lang='en'> – Root element + page ki language (accessibility/SEO ke li
- <meta charset='UTF-8'> – Unicode support; sabhi languages/emoji sahi dikher
- <meta http-equiv='X-UA-Compatible' content='IE=edge'> – Old IE me latest re
  (legacy/optional).
- <meta name='viewport' content='width=device-width, initial-scale=1.0'> – Mo
  layout ke liye.
- <title>My Boilerplate Code</title> – Browser tab ka title.

<body> & Content

- <body> wo jagah hai jahan user-visible cheezen aati hain (headings, paragra
  buttons).
- Hello World! — ek simple paragraph. open aur close tag hai.
- Rule: open tag ka close tag zaroori (jaise ... , <html>...</html>, <b
  <head>...</head>).

VS Code me jaldi se page kaise banayein

- File > New File > save karein 'Classroom.html' ke naam se.
- Emmet shortcut: HTML file me '!' type karke Tab dabayein – pura boilerplate
- <title> change karein aur body me Hello World! add karein.
- Run karne ke tareeke:
  - Live Server extension (recommended): file par right-click > Open with Liv
  - Ya seedha file ko double-click karke browser me khol lein.

Memory Tricks (Mnemonics)

- Skeleton chant: 'Doctype → html-lang → head → body'.
- Head order hint: 'C C V T' = Charset, (X-UA) Compatible, Viewport, Title.
- 20-sec recall: blank file me bina dekhe in 4 lines ko likhne ki practice ka
- Flash-cards: ek card par tag ka naam, doosre par uska kaam; daily 2-3 min s
- Muscle memory: har nayi file me '!' + Tab, phir body me 1 naya <p> message

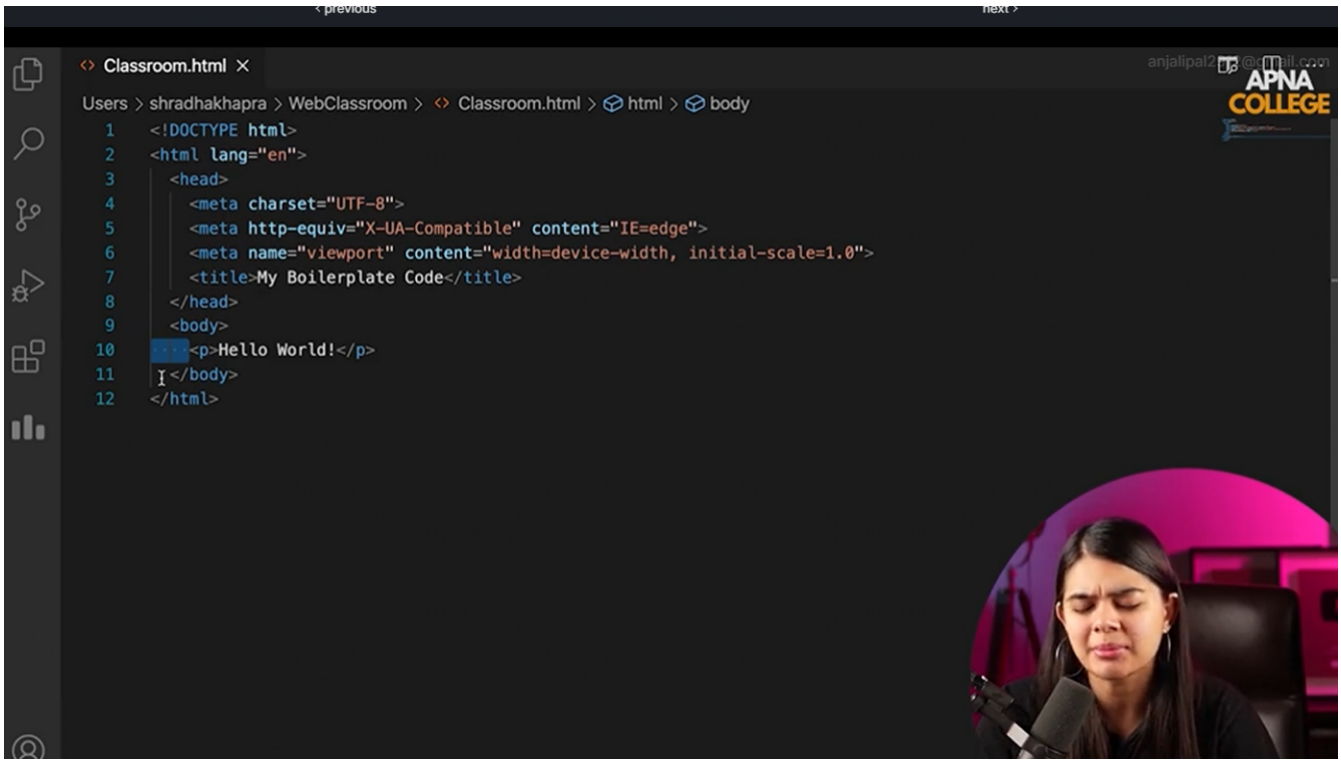
Common Mistakes + Final Checklist

- Galat: HTML me '{' ya '}' use karna — ye CSS/JS ke liye hote hain.
- Bhool: </head>, </body>, </html> jaise closing tags miss ho jana.
- Viewport meta chhod dena — mobile view toot sakta hai.
- File ko .html extension se save na karna.
- Quick Checklist:
  - Doctype ✔ html lang ✔
  - head: charset ✔ compat ✔ viewport ✔ title ✔
  - body: visible content ✔ tags correctly closed ✔

Lecture Screenshot (Reference)

Neeche diya gaya image sirf reference ke liye hai — code likhte time clean ve

karein.



HTML Basics - Easy Learning Notes

HTML Attributes

Attributes are used to add more information to HTML tags. They are always written in the form of name="value". Example: <html lang="en"> specifies that the page language is English.

Anchor Element (<a>)

The <a> tag is used to add links to your page. The 'href' attribute specifies the link. Example: Google. Links can be absolute (internet) or relative (within your project).

Image Element (<img>)

The <img> tag is used to add images. Attributes include 'src' for the image source and 'alt' for alternate text. Example: <img src="image.png" alt="Random Image">. The source can be a relative URL (local file) or absolute URL (online image).

 Tag

The
 tag is used to insert line breaks in text, moving content to the next line.

Bold, Italic & Underline Tags

These tags are used to highlight text. makes text bold, italicizes text, and <u> underlines text. Example: Bold, Italic, <u>Underline</u>.

Comments in HTML

Comments are parts of code that are not displayed in the browser. They help developers write notes. Example: <!-- This is an HTML Comment -->.

HTML is Not Case Sensitive

HTML tags are not case sensitive. <html> is the same as <HTML>. This means you can use uppercase or lowercase, but it's good practice to use lowercase consistently.

HTML Inline & Block Elements Notes

Inline vs Block Elements

Block Elements
- Full width le lete hain.
- Hamesha nayi line se start hote hain.
- Example: , <p>, <h1>
Trick: "Block ek bada dabba hai jo poori line cover karta hai."

Inline Elements
- Sirf jitni width content ko chahiye utni lete hain.
- Nayi line se start nahi hote.
- Example: , <a>, <img>
Trick: "Inline chhota dabba hai jo line ke andar baithta hai."

Am I Inline or Block?

- <h1> to <h6> : Block
- <p> : Block
- <a> : Inline
- <img> : Inline
Trick: Headings & Paragraph block hote hain, links & images inline.

Div Element

- Div ek container hai jo dusre elements ko group karta hai.
- Always block-level element.
Trick: "Div ek bada box hai, sabko group karta hai."

Span Element

- Span ek inline container hai.
- Text ke chhote part ko style karne ke liye use hota hai.
Trick: "Span ek chhota marker hai jo text ke andar rang lagata hai."

HR Tag

- Horizontal line (divider) banata hai.
- Block element.
Trick: "HR = Horizontal Rule = Line kheench do."

Sub & Sup Tag

- <sub> → Subscript (neeche likha) → H■O
- <sup> → Superscript (upar likha) → $a^2 + b^2$
Trick: "Sub neeche, Sup upar."

Summary Table

Tag	Type	Kaam
	Block	Grouping, layout banane ke liye
	Inline	Chhote text ko style karna
<h1>…<h6>	Block	Headings ke liye
<p>	Block	Paragraph ke liye
<a>	Inline	Hyperlink
<img>	Inline	Images display karna
<hr>	Block	Horizontal line banata hai
<sub>	Inline	Subscript (neeche likha)
<sup>	Inline	Superscript (upar likha)