

HTTP and Web Servers

How the web works

What we will learn

- What is a web server
- What is HTTP
- How a browser talks to a server
- What happens when you open a website

Section 1: Big Picture

What happens when you open a website?

- You type a URL
- Your browser sends a request
- A server sends back a response

Analogy: Restaurant

- You = Customer (Browser)
- Kitchen = Server
- Menu = Website

Flow:

- You order → Request
- Kitchen cooks → Process
- Food comes → Response

Think About

- What if the kitchen is slow?
- What if your order is wrong?

Section Summary

- Web = Request + Response
- Browser talks to server
- Server sends data back

Section 2: What is HTTP?

HTTP = Rules of communication

- Full form: HyperText Transfer Protocol
- Defines how request/response works

Simple Example

Browser sends:

```
GET /index.html
```

Server replies:

```
200 OK  
<html>...</html>
```

Analogy: Language

- HTTP is like a language
- Both browser and server must understand it

Think

- What happens if browser and server use different rules?

Section Summary

- HTTP = rules for communication
- Request + Response format
- Both sides must follow same rules

Section 3: Web Servers

What is a Web Server?

- A computer program
- Stores websites
- Sends them when asked

Examples:

- Apache
- Nginx
- Python simple server

What does a server do?

1. Wait for request
2. Process it
3. Send response

Analogy: Librarian

- You ask for a book
- Librarian finds it
- Gives it to you

Think about

- What if many people ask at once?

Section Summary

- Server stores content
- Responds to requests
- Works like a helper system

Section 4: Request and Response

Request

- Sent by browser or client
- Method (GET, POST, PUT, DELETE etc)
- Path (/index.html)

Request Example

```
GET /about  
Host: example.com
```

Response

- Sent by server
- Status code
- Content

Response Example

```
200 OK  
<html>About page</html>
```

Status Codes

There are many status codes.

- 200 → OK
- 404 → Not Found
- 500 → Server Error

Analogy: Delivery Status

- 200 - Delivered
- 404 - Address not found
- 500 - Warehouse problem

Questions?

Section Summary

- Request = asking
- Response = answering
- Status codes show result

Section 5: Full Flow

1. User enters URL
2. Browser sends HTTP request
3. Server processes
4. Server sends response
5. Browser shows page

Visual

Browser → Internet → Server → Internet → Browser

Think About

- Why is the internet needed in between?

Real-life Analogy

- You send a parcel
- It travels through roads
- Reaches destination
- Comes back with reply

Section Summary

- Full cycle understood
- Many steps behind a simple click

Final Summary

- Web works on request-response
- HTTP defines rules
- Servers respond to browsers
- Everything is simple at core

Thank you!

Any questions?

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