Presentation Title: HTTP/1.0

Course Tile: Computer Networks

Course Code: ICT-3201

Presented By:

Imran Hamid

ID: IT22010

Year: 3rd Sem: 2nd

Session: 2021-22

Dept. of ICT,

MBSTU

Supervised By:

Dr. Nazrul Islam

Associate Professor

Dept. of ICT,

MBSTU

Table of Contents:

Introduction:

- What is HTTP?

HTTP (Hyper Text Transfer Protocol) is the communication protocol used for transferring data between a web browser and a web server over the internet.

- HTTP was developed in the early 1990s by Tim Berners-Lee at CERN to enable communication between web browsers and servers.
- The first version, HTTP/0.9, was very simple
- It only supported the GET method.

Overview of HTTP/1.0 :

- HTTP/1.0 is the first standardized version of the Hyper Text Transfer Protocol (1996) that allows a web client to request resources from a web server using a simple request–response model.

Goals and Purpose of HTTP/1.0:

1. Provide a standardized protocol for communication between clients and servers
2. Enable transfer of HTML pages, images, audio, video, and other resources
3. Introduce status codes to indicate success or failure of requests
4. Add headers for more structured and informative responses
5. Support multiple request methods: GET, POST, and HEAD

Features of HTTP/1.0:

1. Stateless Nature:
Each request is independent; the server does not store previous interactions. Every request must include all needed information.

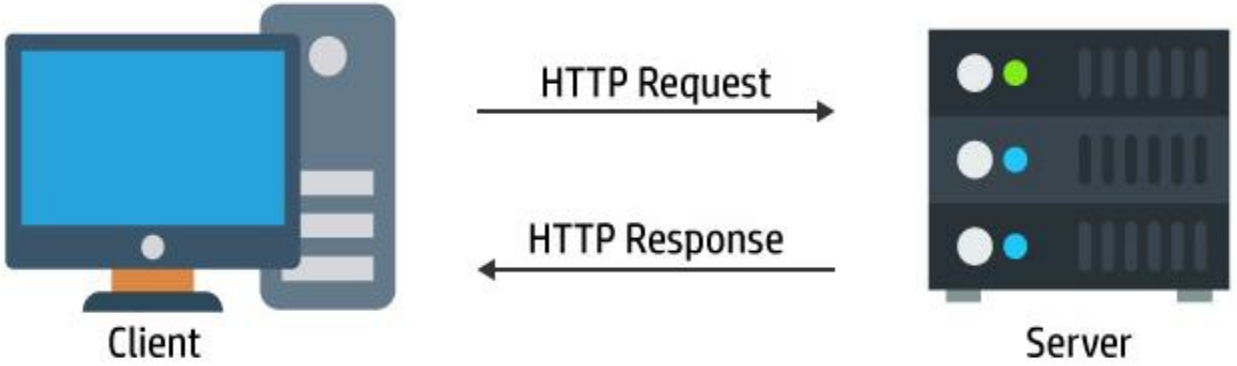
2. One Connection per Request:
A new TCP connection is made for each request and closed after the response, causing delays when loading multiple resources.

3. Headers, Status Codes, and Methods:
HTTP/1.0 introduced headers (metadata), status codes (like **200 OK**, **404 Not Found**), and basic methods:

- **GET** – request data
- **POST** – send data
- **HEAD** – get headers only

Architecture and Working principle:

➢Client Server Model



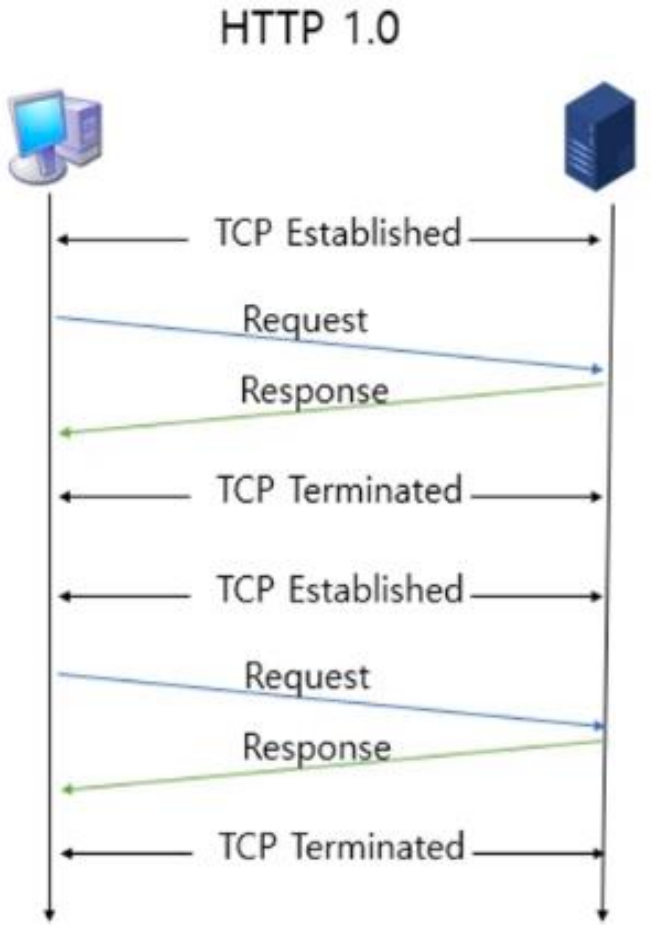
Client: Web browser or HTTP client
Server: Web server that provides resources
Communication: Client sends request → Server sends response

Architecture and Working Principle (Continue…….)

➢**Request Response Flow:**

- TCP connection Establishment
- Request Transmission
- Server Processing
- Response Transmission
- TCP connection closure

Each time a request is made, a new TCP connection is established to perform the task .



Architecture and Working Principle (Continue…….)

❑TCP Connection establishment:

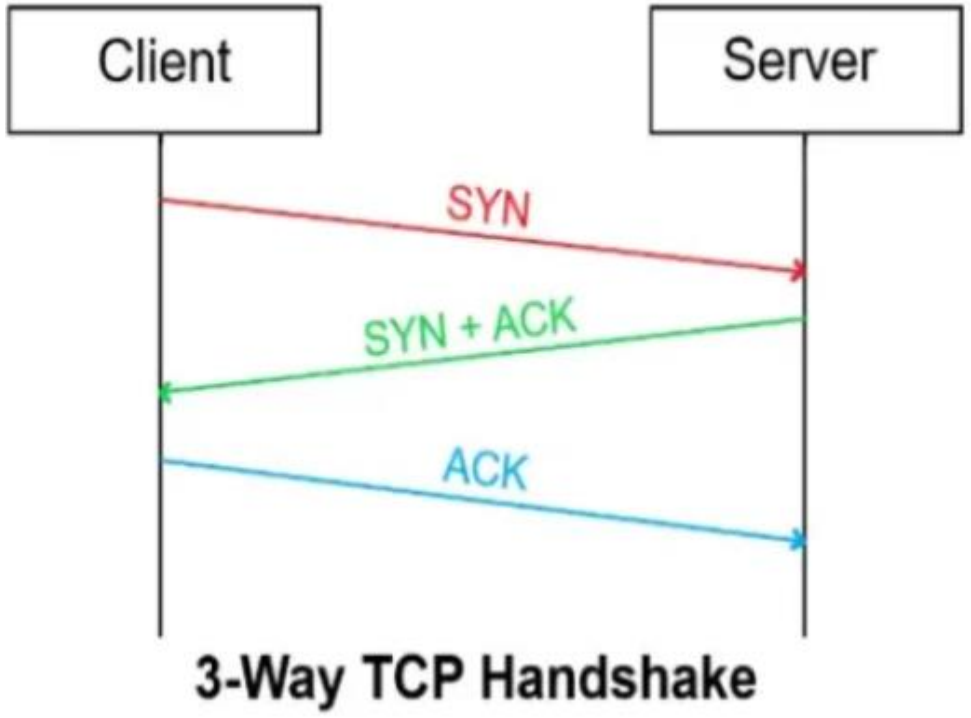
Client initiates a TCP connection to the server (3-way handshake).

SYN: Client → Server

SYN-ACK: Server → Client

ACK: Client → Server

✓ Now the connection is ready for data transfer.



3-Way TCP Handshake

Architecture and Working Principle (Continue…….)

❑**Request Transmission:**

- Client sends HTTP request.
- Includes: Method(GET,POST), URI, HTTP/1.0, headers, and optional body.

❑**Server Processing:**

- Server reads and processes the request.
- Retrieves data or runs scripts.

❑**Response Transmission:**

- Server sends HTTP response.
- Includes: Status line, headers, and optional body (HTML, image, etc.).

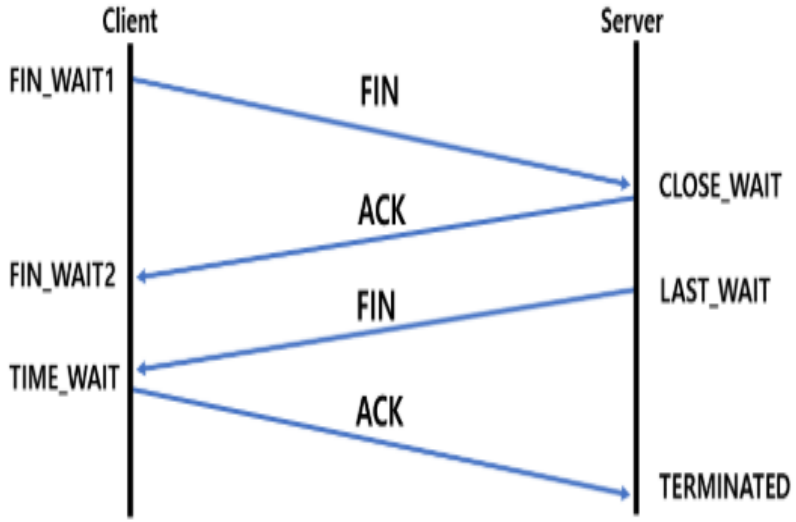
Architecture and Working Principle (Continue…….)

- **TCP Connection Closure:** The server closes the TCP connection after sending the response, and the client processes it.(4 way handshake)

TCP Connection Termination:

1. **FIN:** Sender → Receiver
2. **ACK:** Receiver → Sender
3. **FIN:** Receiver → Sender
4. **ACK:** Sender → Receiver

✓ Connection is now fully closed



Methods used in HTTP/1.0:

Method	Purpose	Example Request Line
GET ---------->	Retrieve a resource from the server	GET /index.html HTTP/1.0
POST---------->	Send data to the server (form submission)	POST /login HTTP/1.0
HEAD---------->	Fetch headers only, no body	HEAD /index.html HTTP/1.0

Real world example/Use Case:

- In the early web (1990s), websites like **www.yahoo.com** or **www.netscape.com** used **HTTP/1.0** for communication.

Example of simple request:

- When a browser sends a request:

```
GET /index.html HTTP/1.0
Host: www.example.com
User-Agent: Mozilla/1.0
```

Server Response:

```
HTTP/1.0 200 OK
Content-Type: text/html
Content-Length: 1256

<html>
<body>
<h1>Welcome to Example Website</h1>
</body>
</html>
```

- After sending the response, the **TCP connection closed**, and a **new one** had to open for the next request(like loading images or CSS)

Advantages of HTTP/1.0:

- Simplicity
- Widespread early adoption
- Foundation for web communication

Limitations of HTTP/1.0:

- Lack of persistent connections
- Inefficient for multiple requests
- No host header (problem with virtual hosting)

Conclusion:

HTTP/1.0 was the first standardized version of the Hypertext Transfer Protocol, introducing a simple stateless request-response model with basic methods like GET, POST, and HEAD. Although it required a new connection for each request and had some limitations, it laid the foundation for web communication and influenced all later versions. Over time, it evolved into HTTP/1.1, HTTP/2, and HTTP/3, improving speed, efficiency, and security. **HTTP/1.0 may be old, but it paved the way for the modern, fast, and secure web we use today.**

Thank You