WEB TECHNOLOGY(LAB)

Lab 2 Task

(BSCS)

By

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Lab 2: HTTP, URLs and Request/Response Basics Objectives

- Understand how HTTP works by observing request/response cycles.
- Use browser DevTools and Postman/curl to inspect headers and status codes.
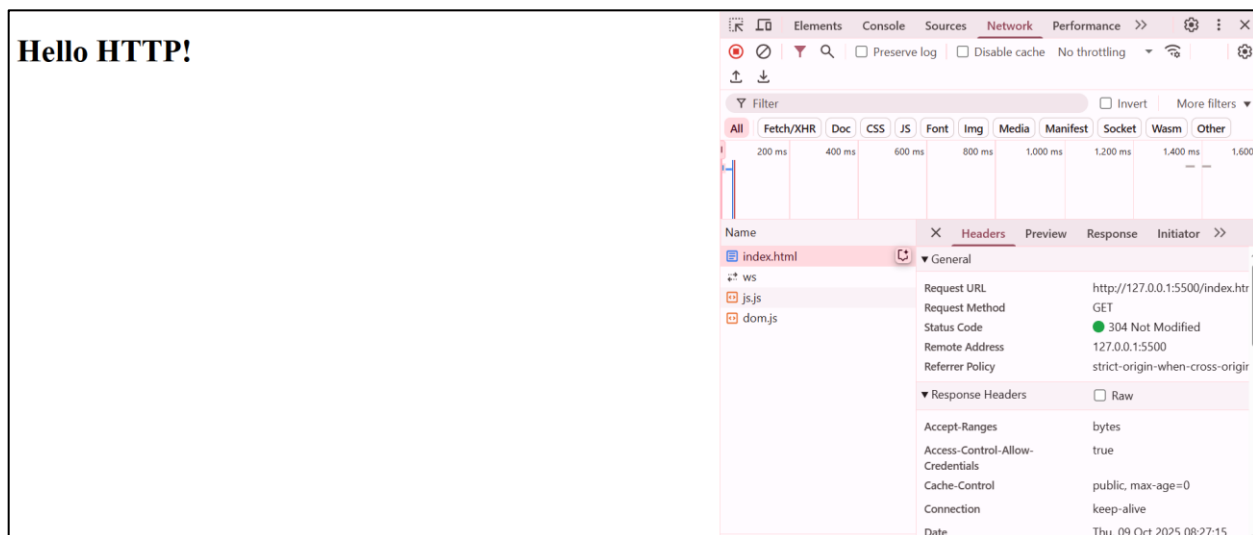- Simulate caching and status code behavior.

Tools Required:

- Browser DevTools (Chrome, Firefox, Edge)
- Postman or curl (command-line tool)
- Live Server (VS Code extension or any static server)

Tasks

Step 1: Inspect HTTP Requests with DevTools

1. Open any simple HTML page (e.g., index.html) using Live Server.
2. Right-click → Inspect → go to Network tab.
3. Reload the page (F5) to capture network activity.
4. Click on the main request (e.g., index.html) and observe:
    - Request Method (GET) o Status Code (e.g., 200 OK)
    - Request Headers (Host, User-Agent)
    - Response Headers (Content-Type, Cache-Control)

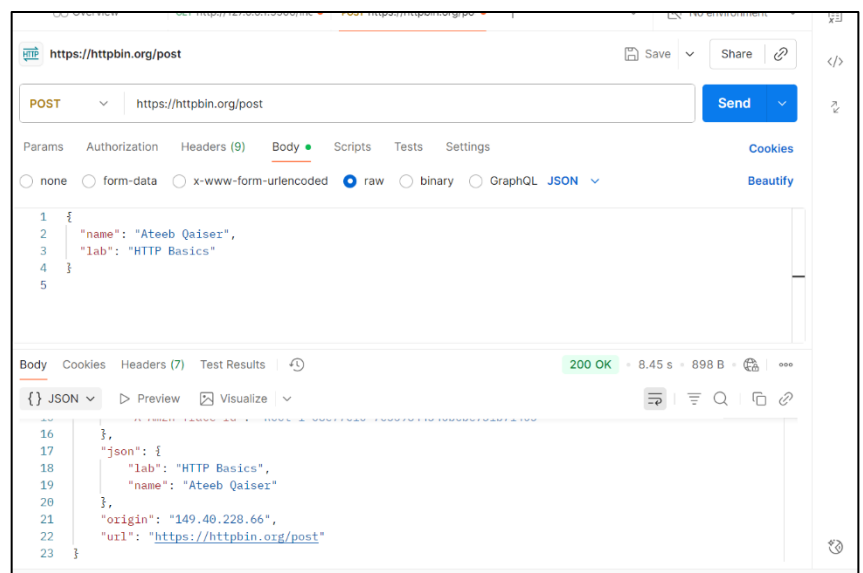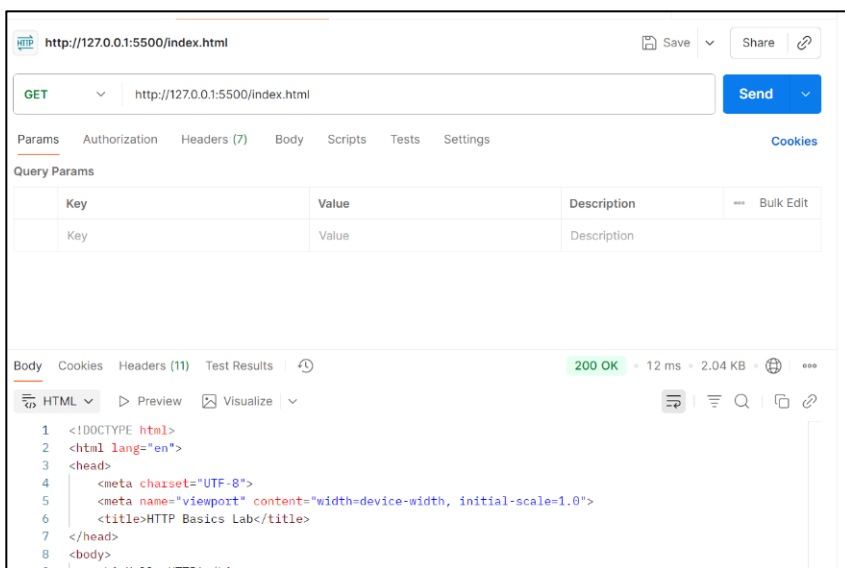# Step 2: Make GET/POST Requests with Postman or curl Using Postman

1. Open Postman and create a GET request to your local server (e.g., http://localhost:5500/index.html).
2. Observe the status code, response body, and headers.
3. Create a POST request to a test endpoint (e.g., https://httpbin.org/post).

    Add a JSON body:

    - { o o "name": "Student", "lab": "HTTP Basics" o }
    - Send the request and inspect the response.

    Using curl (optional)

    curl -X POST https://httpbin.org/post -H "Content-Type: application/json" -d '{"name":"Student","lab":"HTTP Basics"}'
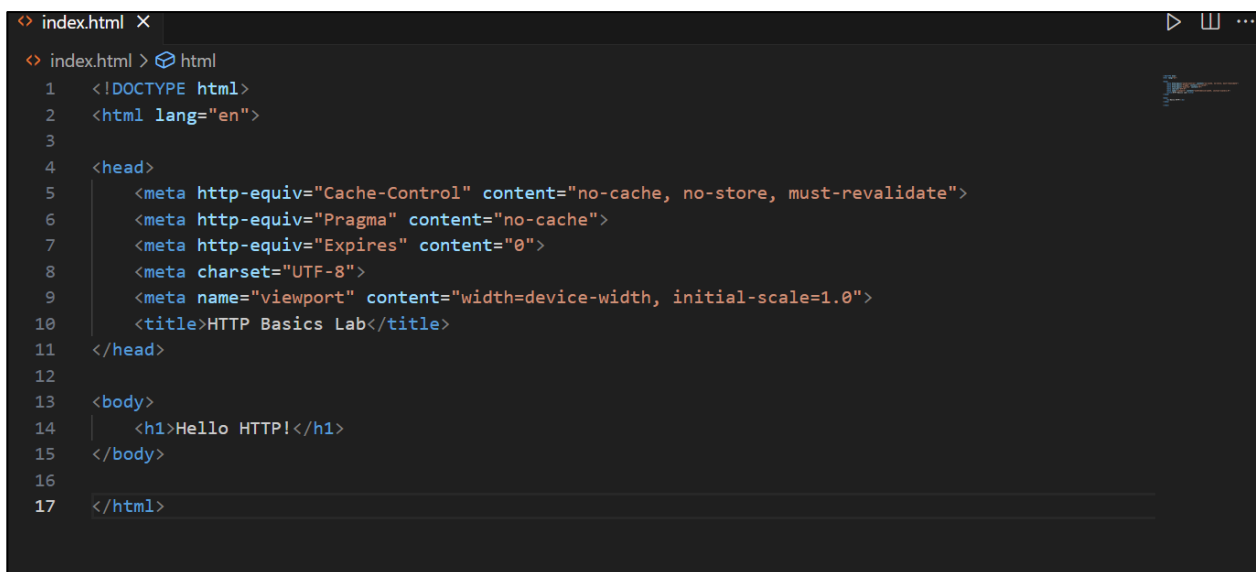
Step 3: Simulate Caching and Status Codes

Modify HTML to simulate caching

1. Add meta tags to your HTML `<head>`:
2. `<meta http-equiv="Cache-Control" content="no-cache, no-store, mustrevalidate">`
3. `<meta http-equiv="Pragma" content="no-cache">`
4. `<meta http-equiv="Expires" content="0">`
5. Reload the page and observe changes in **response headers**. **Simulate Status**

   Codes Use these test URLs:

   - **200 OK**: `https://httpbin.org/status/200`
   - **301 Redirect**: `https://httpbin.org/status/301`
   - **404 Not Found**: `https://httpbin.org/status/404`

   Screenshot Tip: Capture each status code response in DevTools or Postman.

```
index.html X

index.html > html
 1    <!DOCTYPE html>
 2    <html lang="en">
 3
 4    <head>
 5        <meta http-equiv="Cache-Control" content="no-cache, no-store, must-revalidate">
 6        <meta http-equiv="Pragma" content="no-cache">
 7        <meta http-equiv="Expires" content="0">
 8        <meta charset="UTF-8">
 9        <meta name="viewport" content="width=device-width, initial-scale=1.0">
10        <title>HTTP Basics Lab</title>
11    </head>
12
13    <body>
14        <h1>Hello HTTP!</h1>
15    </body>
16
17    </html>
```

https://httpbin.org/status/200

Save | Share

GET | https://httpbin.org/status/200 | Send

Params | Authorization | Headers (7) | Body | Scripts | Tests | Settings | Cookie

Query Params

Key	Value	Description	...	Bulk Edit
Key	Value	Description		

Body | Cookies | Headers (7) | Test Results | 200 OK · 6.87 s · 236 B

Raw | Preview | Visualize

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https://httpbin.org/status/404

Save | Share

GET | https://httpbin.org/status/404 | Send

Params | Authorization | Headers (7) | Body | Scripts | Tests | Settings | Cookies

Query Params

Key	Value	Description	...	Bulk Edit
Key	Value	Description		

Body | Cookies | Headers (7) | Test Results | 404 NOT FOUND · 11.70 s · 243 B

Raw | Preview | Debug with AI

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https://httpbin.org/status/301

Save | Share

GET | https://httpbin.org/status/301 | Send

Params | Authorization | Headers (7) | Body | Scripts | Tests | Settings | Cookies

Query Params

Key	Value	Description	...	Bulk Edit
Key	Value	Description		

Body | Cookies | Headers (7) | Test Results | 200 OK · 943 ms · 686 B

Raw | Preview | Visualize

```
1  {
2    "args": {},
3    "headers": {
4      "Accept": "*/*",
5      "Accept-Encoding": "gzip, deflate, br",
6      "Cache-Control": "no-cache",
7      "Host": "httpbin.org",
8      "Postman-Token": "1338152c-4db8-492f-b24c-c0d7a472b87b",
```

Deliverables

Create a Markdown file or short report with:

Required Sections

Screenshots of:

- DevTools request inspection
- One GET and one POST request (Postman or curl)
- Status code simulations (2xx, 3xx, 4xx)

Explanations:

- Identify parts of request/response (method, headers, status)
- Describe what caching headers do
- Explain the meaning of each status code

CONCLUSION:

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RUBRICS:

Performance			Lab Report		
Description	Total Marks	**Marks Obtained**	**Description**	Total Marks	**Marks Obtained**
Ability to Conduct practical	5		**Structure**	5	
Data Analysis & Interpretation	5		**Efficiency**	5	
Total Marks obtained			**Total Marks Obtained**		

Instructor Signature _____