

# 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.

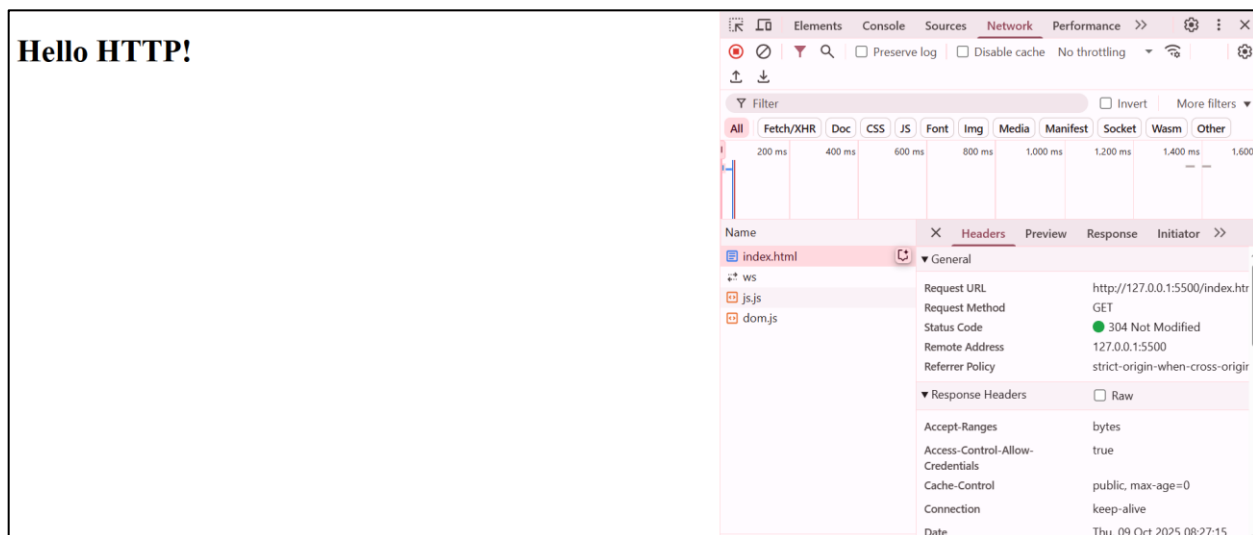
### Tools Required:

- 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

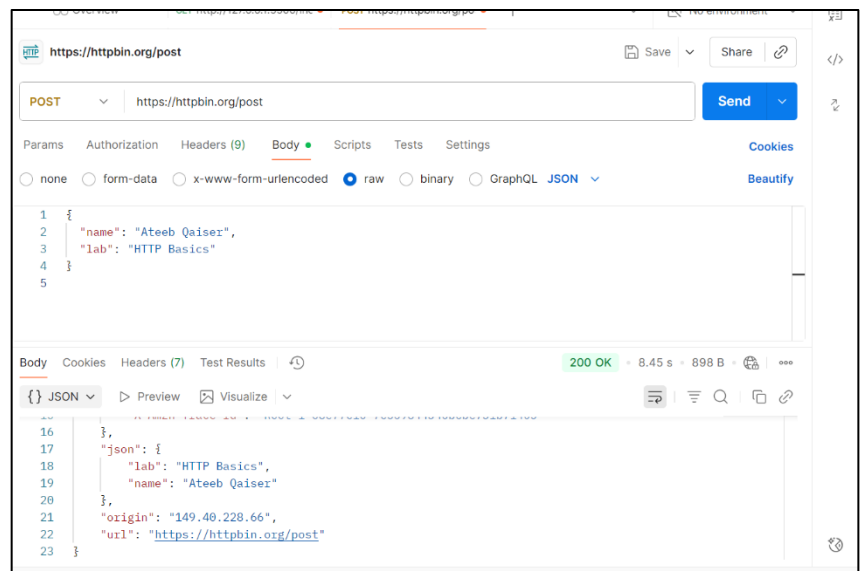
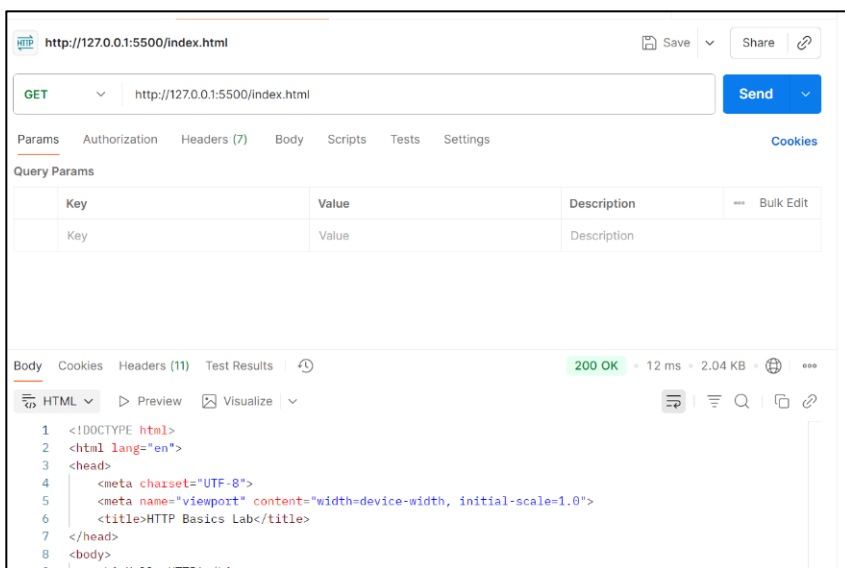
1. Open Postman and create a GET request to your local server (e.g., <http://localhost:5500/index.html>).
2. Observe the status code, response body, and headers.
3. Create a POST request to a test endpoint (e.g., <https://httpbin.org/post>).

### 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

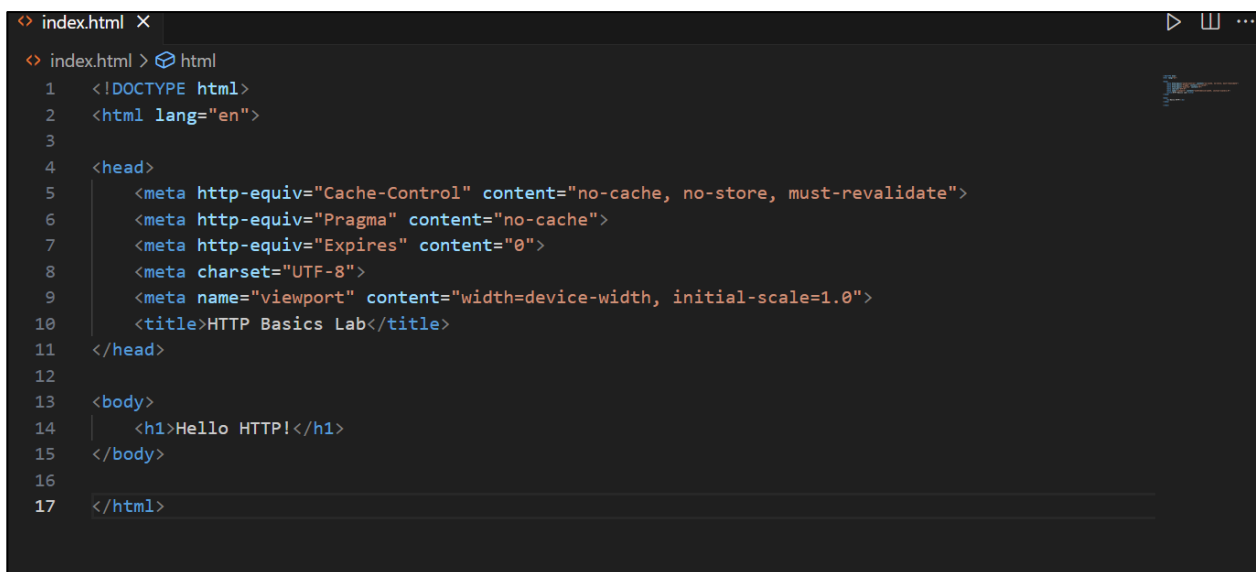
### Modify HTML to simulate caching

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

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

Params Authorization Headers (7) Body Scripts Tests Settings Cookies

Query Params

Key	Value	Description
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

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

Params Authorization Headers (7) Body Scripts Tests Settings Cookies

Query Params

Key	Value	Description
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

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

Params Authorization Headers (7) Body Scripts Tests Settings Cookies

Query Params

Key	Value	Description
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-c8d7a472b87b",
9   },
10 }
```

## 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:

This lab helped me understand how HTTP works by observing real-time request and response cycles using DevTools and Postman. I also learned how caching headers and different status codes affect web communication between client and server.

## 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 \_\_\_\_\_