**What is HTTP?**

HTTP (Hypertext Transfer Protocol) is a stateless protocol that defines how requests and responses are exchanged between a client (e.g., browser) and a server over the web.

**Sample HTTP Request**

GET /hello.txt HTTP/1.1

User-Agent: curl/7.16.3 libcurl/7.16.3 OpenSSL/0.9.7l zlib/1.2.3

Host: www.example.com

Accept-Language: en, mi

**Explanation of Request Lines**

| **Line** | **Description** |
| --- | --- |
| GET /hello.txt HTTP/1.1 | Method: GET (used to fetch data), Resource path: /hello.txt, HTTP version: HTTP/1.1 |
| User-Agent: curl/... | Identifies the client application making the request |
| Host: www.example.com | Specifies the server domain |
| Accept-Language: en, mi | Indicates preferred languages for the response |

**Sample HTTP Response**

HTTP/1.1 200 OK

Date: Mon, 27 Jul 2009 12:28:53 GMT

Server: Apache

Last-Modified: Wed, 22 Jul 2009 19:15:56 GMT

ETag: "34aa387-d-1568eb00"

Accept-Ranges: bytes

Content-Length: 51

Vary: Accept-Encoding

Content-Type: text/plain

Hello World! My payload includes a trailing CRLF.

**Explanation of Response Lines**

| **Line** | **Description** |
| --- | --- |
| HTTP/1.1 200 OK | HTTP version: HTTP/1.1, Status code: 200 (OK - success) |
| Date | Timestamp when the server processed the request |
| Server | Server software used (e.g., Apache) |
| Last-Modified | Date and time when the resource was last modified |
| ETag | Identifier used for cache validation |
| Accept-Ranges: bytes | Supports partial downloads or streaming |
| Content-Length: 51 | Size of the response body in bytes |
| Content-Type: text/plain | MIME type of the response (plain text in this case) |
| **Response Body** | Actual data sent by the server ("Hello World!..." in plain text) |

**Common Content-Type Values**

| **Content-Type** | **Description** |
| --- | --- |
| text/plain | Plain text content |
| text/html | HTML document |
| application/json | JSON formatted data |
| image/png | PNG image file |

**Viewing HTTP Request/Response in Chrome**

Steps to view live HTTP traffic using Chrome Developer Tools:

1. Open Chrome.
2. Press F12 to launch Developer Tools.
3. Navigate to the Network tab.
4. Open any website (e.g., google.com).
5. Select any request from the list.
6. Examine the following tabs:
   * **General**: Summary including status code and URL.
   * **Request Headers**: Data sent from browser to server.
   * **Response Headers**: Data received from server.

**Additional Notes**

* The URL entered in the browser is split into Host (domain) and Resource (path).
* The actual HTTP message (both request and response) is a plain text message sent over TCP.
* The GET method is just one of several HTTP methods, others include POST, PUT, DELETE, etc.
* Content-Type determines how the browser should interpret or render the returned data.
* 