# (http://) HTTP – Hyper Text Transfer Protocol

======================================================

* Responsible for communication between web servers and clients
* HTTP is connectionless, after making the request, the client disconnects from the server, when the response is ready the server re-establish the connection again and deliver the response.
* HTTP can deliver any sort of data, as long as the two computers are able to read it.
* HTTP Requests/Responses (With Start line, Headers & Body)
* HTTP is Stateless. Every request is completely independent. It doesn’t remember about previous transactions.
* Programming, Local Storage, Cookies, Sessions are used to create enhanced user experiences.

# HTTP Methods

==================

* Request is made to the server using one of the methods.
* The method is a command that tells the server what to do

1. GET 🡺 Retrieves data from the server.

Can be loading standard html page, CSS, images, json data, xml data

1. POST 🡺 Submit data to the server.

Adding some resource to server, as submitting a form data

1. PUT 🡺 Update data already on the server.

To Update resources already on the server.

1. DELETE 🡺 Deletes data from the server.

To delete resource available on the server.

1. Other method1
2. Other method 2

# HTTP Messages

===================

**Request Message:**

|  |  |
| --- | --- |
| **Start Line** | **Method** **URI**(path/to/file.ext)  **HTTP Version**  GET/products/myproducts.html HTTP/1.0 |
| **Headers** | **Host** : www.mywebsite.com  **Accept** **-language**: en-us  **Accept**: MIME type  **Note : (MIME type is filetype/ext** - image/gif, text/html,  application/xml, application/json**)** |
| **Body** | Nothing to send to server if method is GET. IF method is POST, PUT or Delete then send the required information in the body. |

**Response Message:**

|  |  |
| --- | --- |
| **Start Line** | **Http/version Status Code**  HTTP/1.0 200:OK |
| **Headers** | **Host :** www.mywebsite.com  **Accept-language :** en-us  **Accept:** MIME Type (e.g. text/html)  **Server :** |
| **Body** | **File Requested**  products/myproduct.html |

Typing URL <https://anamikanny28.blogspot.com/> in the address bar will fetch following header data:

**General Header Data:**

1. **Request URL --** https://anamikanny28.blogspot.com/
2. **Request Method --** GET
3. **Status Code --** 200
4. **Remote Address --** [2404:6800:4009:810::2001]:443
5. **Referrer Policy --** no-referrer-when-downgrade

**Request Header Data:**

1. **Authority –** anamikanny28.blogspot.com
2. **Method –** GET
3. **Path –** /
4. **Scheme –** https
5. **Accept –** text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,\*/\*;q=0.8,application/signed-exchange;v=b3;q=0.9
6. **Accept-Encoding –** gzip, deflate, br
7. **Accept-Language –** en-US,en;q=0.9,hi;q=0.8,en-IN;q=0.7,en-GB;q=0.6
8. **Cache-Control –** max-age=0
9. **If-Modified-Since –** Mon, 23 Dec 2019 12:21:19 GMT
10. **If-None-Match –** W/"648dd58046f400a8c9dec4c7389fa715eea4de7020d0bcaa4ba67a0c1a42e884"
11. **Sec-Fetch-Mode –** navigate
12. **Sec-Fetch-Site –** none
13. **Sec-Fetch-User –** ?1
14. **Upgrade-Insecure-Requests –** 1
15. **User-Agent –** Mozilla/5.0 (Windows NT 6.1; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/79.0.3945.79 Safari/537.36

**Response Header Data:**

1. **Alt-SVC –**

quic=":443"; ma=2592000; v="46,43",h3-Q050=":443"; ma=2592000,h3-Q049=":443"; ma=2592000,h3-Q048=":443"; ma=2592000,h3-Q046=":443"; ma=2592000,h3-Q043=":443"; ma=2592000

1. **Cache-Control –** private, max-age=0
2. **Content-Encoding –** gzip
3. **Content-Length –** 20163
4. **Content-Type –** text/html; charset=UTF-8
5. **Date –** Wed, 25 Dec 2019 15:14:31 GMT
6. **eTag –** W/"648dd58046f400a8c9dec4c7389fa715eea4de7020d0bcaa4ba67a0c1a42e884"
7. **Expires –** Wed, 25 Dec 2019 15:14:31 GMT
8. **Last-Modified –** Mon, 23 Dec 2019 12:21:19 GMT
9. **Server –** GSE
10. **Status –** 304
11. **X-Content-Type-Options –** nosniff
12. **X-Xss-Protection –** 1; mode=block

**HTTP STATUS CODES:**

1. **1xx: Informational**

Request received / processing

1. **2xxx: Success**

Successfully Received, Understood and accepted.

**200 – OK**

**201 – OK Created**

1. **3xx: Redirect**

Further action must be taken / redirect.

**301 – Moved to new URL**

**304 – Not modified (Cached Version)**

1. **4xx: Client Error**

Request does not have what it needs

**400 – Bad Request**

**401 – Unauthorized**

**404 – Not Found**

1. **5xx: Server Error**

Server failed to fulfil an apparent valid request

**500 – Internal Server Error**