

## Hypertext Transfer Protocol (HTTP) | Cheat Sheet

### 1. Web Resources

A Web Resource is any data that can be obtained via internet.

A resource can be

- HTML document
- CSS document
- JSON Data or Plain text
- Image, Video, etc.

### 2. Uniform Resource Locator (URL)

URL is a text string that specifies where a resource can be found on the internet.

We can access web resources using the URL.

#### Syntax:

```
protocol://domainName/path?query-parameters
```

In the URL

```
http://www.flipkart.com/watches?type=digital&rating=4 ,
```

- `http` is a **Protocol**
- `www.flipkart.com` is a **Domain Name**
- `/watches` is a **Path**
- `type=digital&rating=4` is the **Query Parameters**

#### 2.1 Protocol

A protocol is a standard set of rules that allow electronic devices to communicate with each other.

There are different types of protocols.

- Hypertext Transfer Protocol (HTTP)
- Hypertext Transfer Protocol Secure (HTTPS)
- Web Sockets, etc.

### 2.1.1 HTTP

The Hypertext Transfer Protocol (HTTP), is a protocol used to transfer resources over the web.

Examples: Internet forums, Educational sites, etc.

**HTTP Request:** Message sent by the client

**HTTP Response:** Message sent by the server

### 2.1.2 HTTPS

In Hypertext Transfer Protocol Secure (HTTPS), information is transferred in an encrypted format and provides secure communication.

Examples: Banking Websites, Payment gateway, Login Pages, Emails and Corporate Sector Websites, etc.

## 2.2 Domain Name

It indicates which Web server is being requested.

## 2.3 Path

The path is to identify the resources on the server.

Examples:

- **/watches** in `http://www.flipkart.com/watches`
- **/electronics/laptops/gaming** in `http://www.flipkart.com/electronics/laptops/gaming`

## 2.4 Query Parameters

Query parameters add some criteria to the request for the resource.

Multiple query parameters can be added by using an

`&` ( ampersand ) symbol.

For example,

```
http://www.flipkart.com/watches?type=digital&rating=4
```

### 3. HTTP

#### 3.1 HTTP Requests

HTTP requests are messages sent by the client to initiate an action on the server.

HTTP request includes

- Start Line
- Headers
- Body

##### 3.1.1 Start Line

A Start Line specifies a

- URL
- HTTP Method
- HTTP Version

### HTTP Methods

The HTTP Request methods indicate the desired action to be performed for a given resource.

Methods	Description
GET (Read)	Request for a resource(s) from the server
POST (Create)	Submit data to the server

Methods	Description
PUT (Update)	The data within the request must be stored at the URL supplied, replacing any existing data
DELETE (Delete)	Delete a resource(s)

## HTTP Version

Year	Version
1991	HTTP/0.9
1994	HTTPS
1996	HTTP/1.0
1997	HTTP/1.1
2015	HTTP/2
2019	HTTP/3

### 3.1.2 Headers

HTTP Headers let the client and the server to pass **additional information** with an HTTP request or response.

### 3.1.3 Body

We place the data in the Request body when we want to **send data** to the server.

For example, form details filled by the user.

### HTTP Requests

- Start Line

- URL
  - Protocol
    - HTTP
    - HTTPS
  - Domain Name
  - Path
  - Query Parameters
- HTTP Method
  - GET (Read)
  - POST (Create)
  - PUT (Update)
  - DELETE (Delete)
- HTTP Version
- Headers
- Body

### 3.2 HTTP Responses

HTTP responses are **messages** sent by the server as an **answer** to the **clients request**.

HTTP Response includes

- Status Line
- Headers
- Body

#### 3.2.1 Status Line

A Status line specifies a

- HTTP version
- Status code

- Status text

## Status code

Status codes Indicate whether an HTTP request has been successfully completed or not.

Status Code Series	Indicates
1XX	Information
2XX	Success
3XX	Redirection
4XX	Client Error
5XX	Server Error

- 200 ( Success ) - Indicates that the request has succeeded
- 201 ( Created ) - The request has succeeded and a new resource has been created as a result

## Status text

Status Code	Status Text
200	OK
204	No Response
301	Moved Permanently
401	Unauthorized
403	Forbidden

Status Code	Status Text
404	Not Found

### 3.2.2 Body

Response Body contains the resource data that was requested by the client.

#### HTTP Responses

- Status Line
  - HTTP version
  - Status code
    - 1XX
    - 2XX
    - 3XX
    - 4XX
    - 5XX
  - Status text
- Headers
- Body

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