**Day 1 Task:**

1. **Difference between HTTP/1.1 vs HTTP/2?**

HTTP is short for Hypertext Transfer Protocol. It is the process involved when a user types in a URL on the World Wide Web. After this URL is typed in, your browser will send an HTTP request to a server to gather the desired web page.

HTTP/1.1 was released in 1995 with great features like each connection can be kept alive using keep-alive header after every request was served with a response. It was having several other features over HTTP/1.0 as pipelining requests, Small chunk transfers, cache control and many more.

HTTP/2 was released in 2015 with more stabled and high-performance features as nowadays internet traffic is too high in comparison to the 1995. Great features include of HTTP/2 are concept of server-push, multiplexing, binary protocol and introduced HPACK header algorithm.

**Differences between HTPP/.1 and HTTP/2 based on category**

* **Web Traffic**

HTTP/1.1 uses the pipelining concept where one request used to serve at a time and once client receives response then the second request use to be sent.

On the other hand, HTTP/2 uses the multiplexing concept where multiple requests can be sent same time which improves the performance in a high ratio compared to HTTP/1.1

* **Caching**

HTTP/1.1 uses the additional headers like cache-control, conditional headers like If-match and by using entity tags.

On the other hand, HTTP/2 did not change much in caching process, but they added server push feature if the client finds the resources are already present in the cache, it can cancel the pushed stream.

* **Header Compression**

In HTTP/1.1, headers are sent on every request leading to a lot of duplicate data being sent uncompressed across the wire.

On the other hand, HTTP/2 uses by default header compression using HPACK.

* **Performance Optimization**

As HTTP/1.1 was initially designed for 2 connections but due to the browser requirements of 6, it was introduced with some workaround optimizations as Spriting, concatenating, inlining, domain sharding for the ‘6 connections per host’ rule.

Now in HTTP/2, its capable to fulfil all the requirements of browsers and does not requires any workarounds. So, all the workarounds have been removed which were available in HTTP/1.1.

* **Protocol Type**

HTTP/1.1 uses text-based protocol which is in the readable form.

HTTP/2 uses binary protocol (HTTP requests are sent in the form of 0s and 1s) which needs to be converted back from binary in order to read it.

1. **Difference between Get and Post?**

GET method is used for requesting the URL from a web server to fetch the HTML documents. It is a conventional method for browsers to deliver the information which counted as a part of the HTTP protocol. The GET method represented in the form of URL, so that it can be bookmarked. GET is extensively used in search engines. After the submission of a query by the user to the search engine, the engine executes the query and gives the resulting page.

POST method is suitable in the condition where a significant amount of information can pass through. When a server receives the request by a form employing POST, it continues to “listens” for the left information. In simple words, the method transfers all the relevant information of the form input instantly after the request to the URL is made.

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| **Category** | **GET** | **POST** |
| Parameters Location | Parameters will be passed in GET request using URL. | Parameters will be used in POST request using body. |
| Query results | We can bookmark the request to fetch data as it relies in URL. | We can not bookmark as parameters will be available in Body of the request. |
| Security | Vulnerable, as present in plain text | Safer than GET method |
| Form data type constraints | Only ASCII characters are permitted | No constraints, even binary data is permitted. |
| Form data length | Can handle only minimum length. | Can handle any length of form data. |
| Visibility | Can be seen by anyone | Does not show variables in URL |
| Variable size | upto 2000 character | upto 8 mb |
| Caching | Method can be cached | Does not cache the data. |

The GET and POST method are used for sending the data to the server, and the main difference between them is that GET method append the data to the URI defined in the form’s action attribute. Conversely, POST method attaches data to the requested body. The use of GET method is inappropriate when the sensitive information needs to be filled in the form. POST method is useful when the user requires to fill the passwords or other confidential information.