Task 1

Que.1 : Difference between HTTP1.1 vs HTTP2?

Ans :

1. HTTP is a top-level application protocol that exchanges information between a client computer and a local or remote web server. In this process, a client sends a text-based request to a server by calling a method like GET or POST. In response, the server sends a resource like an HTML page back to the client. Ex. GET /index.html HTTP/1.1 Host: www.example.com
2. HTTP/2 began as the SPDY protocol, developed primarily at Google with the intention of reducing web page load latency by using techniques such as compression, multiplexing, and prioritization.
3. one of the most significant features that distinguishes HTTP/1.1 and HTTP/2 is the binary framing layer, which can be thought of as a part of the application layer in the internet protocol stack. As opposed to HTTP/1.1, which keeps all requests and responses in plain text format
4. An application level API would still create messages in the conventional HTTP formats, but the underlying layer would then convert these messages into binary. This ensures that web applications created before HTTP/2 can continue functioning as normal when interacting with the new protocol.
5. The conversion of messages into binary allows HTTP/2 to try new approaches to data delivery not available in HTTP/1.1, a contrast that is at the root of the practical differences between the two protocols.
6. while HTTP/1.1 transfers these in plain-text messages, HTTP/2 encodes these into binary, allowing for significantly different delivery model possibilities.

Que.2 : HTTP version history?

Ans : The term hypertext was coined by Ted Nelson in 1965 in the Xanadu Project, which was in turn inspired by Vannevar Bush's 1930s vision of the microfilm-based information retrieval and management "memex" system described in his 1945 essay "As We May Think". Tim Berners-Lee and his team at CERN are credited with inventing the original HTTP, along with HTML and the associated technology for a web server and a text-based web browser. Berners-Lee first proposed the "WorldWideWeb" project in 1989—now known as the World Wide Web. The first version of the protocol had only one method, namely GET, which would request a page from a server. The response from the server was always an HTML page.

The first documented version of HTTP was **HTTP V0.9** (1991). Dave Raggett led the HTTP Working Group (HTTP WG) in 1995 and wanted to expand the protocol with extended operations, extended negotiation, richer meta-information, tied with a security protocol which became more efficient by adding additional methods and header fields. RFC 1945 officially introduced and recognized HTTP V1.0 in 1996.

The HTTP WG planned to publish new standards in December 1995 and the support for pre-standard HTTP/1.1 based on the then developing RFC 2068 (called HTTP-NG) was rapidly adopted by the major browser developers in early 1996. End-user adoption of the new browsers was rapid. In March 1996, one web hosting company reported that over 40% of browsers in use on the Internet were HTTP 1.1 compliant. That same web hosting company reported that by June 1996, 65% of all browsers accessing their servers were HTTP/1.1 compliant. The HTTP/1.1 standard as defined in RFC 2068 was officially released in January 1997. Improvements and

updates to the HTTP/1.1 standard were released under RFC 2616 in June 1999.

In 2007, the **HTTP Working Group** was formed, in part, to revise and clarify the HTTP/1.1 specification. In June 2014, the WG released an updated six-part specification obsoleting RFC 2616:

RFC 7230, HTTP/1.1: Message Syntax and Routing

RFC 7231, HTTP/1.1: Semantics and Content

RFC 7232, HTTP/1.1: Conditional Requests

RFC 7233, HTTP/1.1: Range Requests

RFC 7234, HTTP/1.1: Caching

RFC 7235, HTTP/1.1: Authentication

HTTP/2 was published as RFC 7540 in May 2015.

Que.3 : List 5 differences between Browser JS vs Node Js.?

Ans :

- Browser JS :-

1. Javascript is a programming language that is used for writing scripts on the website.
2. Javascript can only be run in the browsers.
3. used on the client-side.
4. Javascript is capable enough to add HTML and play with the DOM.
5. Javascript can run in any browser engine as like JS core in safari and Spidermonkey in Firefox.

- Node JS :-

1. NodeJS is a Javascript runtime environment.
2. NodeJS code can be run outside the browser.
3. It is mostly used on the server-side.
4. Nodejs does not have capability to add HTML tags.
5. Nodejs can only run in V8 engine of google chrome.

Que.4 : what happens when you type a URL in the address bar in the browser?

Ans :

1. You enter a URL into a web browser
2. The browser looks up the IP address for the domain name via DNS
3. The browser sends a HTTP request to the server
4. The server sends back a HTTP response

5. The browser begins rendering the HTML
6. The browser sends requests for additional objects embedded in HTML (images, css, JavaScript) and repeats steps 3-5.
7. Once the page is loaded, the browser sends further async requests as needed.