JavaScript - Day -1: Introduction to Browser & web  
05/03/2024 - Tuesday - 6:00 PM : 9:00 PM  
Task-1

1. **Difference between HTTP1.1 vs HTTP2.**

HTTP stands for Hyper Text Transfer Protocol. HTTP is used by the computers or servers in order to communicate with each other in order to send and receive information. HTTP 1.1 is an older version when compared with HTTP 2. HTTP 1.1 was standardized in 1999 and HTTP 2 was standardized in 2015. Some of the key differences based on certain factors are given below.

* Multiplexing : HTTP 1.1 only allows one request per TCP connection at a time not supporting multiplexing , leading to inefficiencies due to head-of-line blocking. HTTP 2 supports multiplexing, allowing multiple requests and responses to be interleaved on a single connection, significantly improving performance.
* Header Compression : HTTP 1.1 headers are sent as plaintext in every request and response, leading to redundant data transmission. HTTP 2 utilizes header compression, reducing overhead and improving efficiency.
* Binary Protocol : HTTP 1.1 is a text-based protocol, while HTTP/2 is a binary protocol. The binary format of HTTP 2 reduces parsing complexity and enables more efficient processing by both clients and servers.
* Server Push : HTTP/2 introduces server push, where the server can proactively send resources to the client before they are requested, reducing latency and improving page load times. HTTP 1.1 lacks this feature.
* Stream Prioritization : HTTP/2 allows for stream prioritization, enabling the client to specify the relative importance of different resources. This feature helps optimize resource delivery, ensuring critical assets are delivered first. HTTP 1.1 does not support stream prioritization.
* Connection Optimization : HTTP/2 optimizes connections through techniques like header compression, multiplexing, and server push, reducing the need for multiple connections per origin. HTTP 1.1 often requires multiple connections to load resources in parallel.
* Compatibility : While HTTP/2 offers significant performance improvements, it is not universally supported by all clients and servers. HTTP 1.1 enjoys broader compatibility due to its age and maturity.

1. **Objects and its internal representation in Javascript.**

* Objects can be defined as the unordered collection of data which is generally stored in Key-value pairs. Eg- const person = {   
  name: "Abhijith Shreyas",  
  location: "Chennai",  
  gender: "Male"}  
    
  Instead of assigning different variables for each and every information ,through the approach of objects in Javascript, information can be stored in key-value pairs.
* Objects are considered to be one of the fundamental blocks in Javascript programming due to their ability to construct complex data structures.Keys are considered to be unique identifiers whereas in the value part, any type of data can be stored(Strings,Integers etc).
* JavaScript engines implement objects using hash tables or similar data structures. This allows for efficient lookup and manipulation of properties.
* JavaScript objects are dynamic. Users can add, modify, or delete properties at runtime. This flexibility enables developers to create and manipulate data structures easily.
* In JavaScript, objects can inherit properties and methods from other objects through a mechanism called prototype-based inheritance. Each object has an internal link to another object called its prototype. If a property or method is not found on the object itself, JavaScript looks for it in the object's prototype chain.