Difference between HTTP 1.1 and HTTP 2

HTTP- Hypertext Text Transfer Protocol, is the way in which browsers and servers communicate. The client sends a request and receives a response from the server in the form of simple text and images through HTTP protocol through World Wide Web popularly called ”WWW”. HTTP protocol was widely adopted in 1990. HTTP servers use GET and HEAD request methods primarily. HTTP runs on top of TCP or IP protocol.

Evolution of HTTP:

HTTP opened and closed a connection for each application request. The request consisted of a single line. But due to rapid increase in users there came a need for a protocol that could serve more than just hypertext documents, provide richer metadata about the request and the response, enable content negotiation between the client and server and more.

And so developers began work in creating different versions of HTTPs. And in 1997 the first version of HTTP 1.1 was published which was fast applied by browsers of the time.

Emergence of HTTP 1.1:

HTTP 1.1 resolved many shortcomings of the standard HTTP. A connection can be reused, it doesn't require to open a connection multiple times to display resources. Chunked or grouped responses were also supported. The HOST header ability allowed the host to access different domains from the same IP address.

But again with time and improving technology web pages became more complex. More visual media was displayed and so the number and size of requests and responses also increased. Much more data was transmitted over significantly more HTTP requests and this created more complexity for HTTP/1.1 connections. And so yet again developers got into work to create a more complex and able version of HTTP.

Creation of HTTP 2:

In 2010 Google began an internal project called SPDY(spelled speedy) to be the improved version of HTTP 1.1 which used alternative ways of transferring and receiving requests and responses between client and server. This attracted the interest of

developers. The version worked by developers diverged from SPDY in half way but later implemented all the ways of SPDY into it. And in 2015 HTTP 2 was published which was adopted by major tech giants like GOOGLE, Microsoft and APPLE altogether due to its improved capabilities.

- HTTP 2 was a binary protocol rather than a text protocol like the previous HTTP versions.
- It's a multiplexed protocol. Parallel requests can be made over the same connection unlike the single requests made through HTTP 1.1.
- HTTP 2 used “SERVER PUSH” to store data in client cache.
- It compressed header data.

Difference between HTTP 1.1 & HTTP 2

* HTTP 1.1 is textual	* HTTP 2 is binary
* HTTP 1.1 uses order and blocking	* HTTP 2 is multiplexed
* HTTP 1.1 does not use server push	* HTTP 2 uses server push
* HTTP 1.1 employed a simple Header compression	* HTTP 2 used a advanced Header compression
* HTTP 1.1 compresses data by itself	* HTTP 2 uses HPACK for data compression

Objects and its internal representation in Javascript

An object is a collection of properties like name or key and a value. If the property's value is a function then it is called a method. Objects are complex and each object may contain a combination of primitive data-types as well as reference data-types.

A **Primitive Data Type** is not an object, it has no method or property. Values like Dates, Maths, Regular expressions, Arrays, Functions and objects are objects. Even **Primitive Values** like Boolean, Numbers and Strings **can be assigned as objects** when defined with the keyword **"new"**.

Primitive values are not objects because they don't have property or object values.
Examples :

*Boolean
*Numbers
*String
*Null
*Undefined
*Symbol
*Bigint

A **Reference data type** has no fixed value and hence it is a dynamic data type.
Examples:

*Objects
*Functions
*Collections
*Arrays
*Dates

Objects in JS:

Objects in JavaScript are related to real life objects.It is a value which has some properties and type.
An object can be created with figure brackets {} with an optional list of properties. A property is a "key: value" pair, where a key is the property name value can be anything.

Example:

Var Phone = new Object();

Phone.make = “ iPhone”;
Phone.model = “13 pro ”;
Phone.year = ”2021 ”;

Creating objects in JS:

There are few methods in creating **Objects in JS**

- Using Object Literals
- Using Object constructors
- Using Object.create();
- Using the Keyword “new”