

1. Write a blog on Difference between HTTP1.1 vs HTTP2

HTTP stands for hypertext transfer protocol & it is used in client-server communication. By using HTTP user sends the request to the server & the server sends the response to the user. There are several stages of development of HTTP but we will focus mainly on HTTP/1.1 which was created in 1997 & the new one is HTTP/2 which was created in 2015.

HTTP/1.1: For better understanding, let's assume the situation when you make a request to the server for the `geeksforgeeks.html` page & server responds to you as a resource `geeksforgeeks.html` page. before sending the request and the response there is a TCP connection established between client & server. again you make a request to the server for image `img.jpg` & the server gives a response as an image `img.jpg`. the connection was not lost here after the first request because we add a keep-alive header which is the part of the request so there is an open connection between the server & client. there is a persistent connection which means several requests & responses are merged in a single connection. These are the drawbacks that lead to the creation of HTTP/2: The first problem is HTTP/1.1 transfer all the requests & responses in the plain text message form. The second one is head of line blocking in which TCP connection is blocked all other requests until the response does not receive. all the information related to the header file is repeated in every request.

HTTP/2: HTTP/2 was developed over the SPDY protocol. HTTP/2 works on the binary framing layer instead of textual that converts all the messages in binary format. it works on fully multiplexed that is one TCP connection is used for multiple requests. HTTP/2 uses HPACK which is used to split data from header. it compresses the header. The server sends all the other files like CSS & JS without the request of the client using the PUSH frame.

Difference between HTTP/1.1 and HTTP/2 are:

HTTP/1.1	HTTP/2
It works on the textual format.	It works on the binary protocol.

HTTP/1.1	HTTP/2
There is head of line blocking that blocks all the requests behind it until it doesn't get its all resources.	It allows multiplexing so one TCP connection is required for multiple requests.
It uses requests resource Inlining for use getting multiple pages	It uses PUSH frame by server that collects all multiple pages
It compresses data by itself.	It uses HPACK for data compression.

2. Write a blog about objects and its internal representation in Javascript

In JavaScript, an object is a standalone entity, with properties and type. Compare it with a cup, for example. A cup is an object, with properties. A cup has a color, a design, weight, a material it is made of, etc. The same way, JavaScript objects can have properties, which define their characteristics.

Creating Objects in JavaScript:

By object literal

By creating instance of Object directly (using new keyword)

By object literal:

The syntax of creating object using object literal is given below:

object = {property1:value1,property2:value2.....propertyN:valueN}

Property and value is separated by colon(:).

Example:

```
var person={  
  fname:"xxx",  
  lname:"yyy",  
  age: 25  
};
```

By creating instance of Object directly (using new keyword):

The syntax of creating object directly is given below:

```
var objectname=new Object();
```

Here, **new keyword** is used to create object.

Example:

```
var emp=new Object();  
emp.id=101;  
emp.name="xxx";  
emp.salary=50000;
```

Accessing JavaScript Objects:

The syntax for accessing the property of an object is:

objectName.property

or

objectName["property"]

Accessing 'fname' from example 1 using dot operator,

person.fname

Accessing 'name' form example 2 using [],

```
emp["name"]
```

3. Read about IP address, port, HTTP methods, MAC address

IP address:

All the computers of the world on the Internet network communicate with each other with underground or underwater cables or wirelessly. If I want to download a file from the internet or load a web page or literally do anything related to the internet, my computer must have an address so that other computers can find and locate mine in order to deliver that particular file or webpage that I am requesting. In technical terms, that address is called **IP Address or Internet Protocol Address**.

Let us understand it with another example, like if someone wants to send you a mail then he/she must have your home address. Similarly, your computer too needs an address so that other computers on the internet can communicate with each other without the confusion of delivering information to someone else's computer. And that is why each computer in this world has a unique IP Address. Or in other words, an IP address is a unique address that is used to identify computers or nodes on the internet. This address is just a string of numbers written in a certain format. It is generally expressed in a set of numbers for example 192.155.12.1. Here each number in the set is from 0 to 255 range. Or we can say that a full IP address ranges from 0.0.0.0 to 255.255.255.255. And these IP addresses are assigned by IANA (known as Internet Corporation For Internet Assigned Numbers Authority).

But what is Internet protocol? This is just a set of rules that makes the internet work. You are able to read this article because your computer or phone has a unique address where the page that you requested (to read this article from GeeksforGeeks) has been delivered successfully.

Port:

A port is a virtual point where network connections start and end. Ports are software-based and managed by a computer's operating system. Each port is associated with a specific process or service. Ports allow computers to easily

differentiate between different kinds of traffic: emails go to a different port than webpages, for instance, even though both reach a computer over the same Internet connection.

HTTP methods:

What is HTTP?

The Hypertext Transfer Protocol (HTTP) is designed to enable communications between clients and servers.

HTTP works as a request-response protocol between a client and server.

Example: A client (browser) sends an HTTP request to the server; then the server returns a response to the client. The response contains status information about the request and may also contain the requested content.

HTTP Methods

- **GET**
- **POST**
- **PUT**
- **HEAD**
- **DELETE**
- **PATCH**
- **OPTIONS**
- **CONNECT**
- **TRACE**

The two most common HTTP methods are: GET and POST.

MAC address:

To communicate or transfer data from one computer to another, we need an address. In computer networks, various types of addresses are introduced; each works at a different layer. [A MAC address](#), which stands for Media Access Control Address, is a physical address that works at the Data Link Layer. In this article, we will discuss addressing a DLL, which is the MAC Address.

So, go through the article if you are eager to learn what is MAC address and its components.