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1. Difference between HTTP1.1 vs HTTP2:-

HTTP :
HyperText Transfer Protocol is referred to as HTTP. It is the protocol that underpins all data transmission on the Web and is used to send hypertext—text that is connected—over the network. The TCP/IP suite of protocols, which drives the Internet, forms the foundation for HTTP, an application layer protocol.

Feature	HTTP/1.1	HTTP/2
Multiplexing	No multiplexing, uses multiple connections	Multiplexing allows multiple streams over a single connection, reducing latency and improving efficiency.
Header Compression	Headers are not compressed	Header compression (HPACK) reduces overhead by compressing headers, improving performance.
Binary Protocol	Text-based protocol	Binary protocol, more efficient for machines.
Priority	No explicit support for request priority	Supports stream prioritization, allowing more important resources to be delivered first.
Server Push	Not supported	Server push allows the server to send multiple responses for a single client request, reducing the need for additional requests.
Pipeline Blocking	Head-of-line blocking can occur due to the way requests are processed sequentially	No head-of-line blocking; allows parallel loading of resources.
Connection Handling	Uses multiple connections, leading to increased resource usage	Single connection per origin, reducing resource usage and overhead.
Backward Compatibility	Fully backward compatible with HTTP/1.0	Designed to be backward compatible with HTTP/1.1
TLS Usage	Encouraged but not mandatory	Encourages and often requires the use of TLS (Transport Layer Security) for enhanced security.

2. Objects and its internal representation in Javascript :

Collections of key-value pairs are represented and stored using objects, a basic data type. Constructor functions or the object literal syntax can be used to build objects.

Properties:

- Objects in JavaScript consist of properties, where each property is a key-value pair.
- The keys (also called property names) are strings or symbols, and the values can be of any data type, including other objects.
- Properties can be added, modified, or deleted dynamically.

Prototypes:

- JavaScript objects have an internal prototype property that references another object.
- This mechanism is used for inheritance.
- If a property is not found in the object itself, JavaScript looks for it in the prototype chain until it reaches the end (the Object prototype).

Methods:

- Functions assigned as values to properties are referred to as methods when they are part of an object.
- Methods can be invoked using the object's reference.

Constructors:

- Objects can be created using constructor functions. The new keyword is used to instantiate objects from these constructors.
- Constructors can have shared properties or methods through their prototype.

3.Codekata Practise

CodeKata is a series of programs curated by the veterans in IT & Software industry. It hosts coding problems asked by top MNCs like Microsoft, Walmart, Samsung & so on. Practising on Codekata will take your coding skills to next level.

Code Readability:

- Check if the code is well-organized and follows a clear structure.
- Look for meaningful variable and function names that convey the purpose of the code.

Efficiency:

- Consider the time and space complexity of the solution.

Error Handling:

- Check if the code includes proper error handling mechanisms.
- Ensure that the code gracefully handles unexpected situations without crashing.

Testing Strategy:

- Assess the comprehensiveness of the testing strategy.
- Look for a mix of test cases that cover different aspects of the problem.

4. **IP address, port, HTTP methods, MAC address:**

IP Address :
The unique identifying number assigned to every device connected to the internet. An IP address definition is a numeric label assigned to devices that use the internet to communicate.

Port :
A port in computer networking is how a computer can use a single physical network connection to handle many incoming and outgoing requests by assigning a port number to each. The numbers go from 0 to 65535, which is a 16-bit number.

Some of these port numbers are specifically defined and always associated with a specific type of service -- for example, File Transfer Protocol (FTP) is always port number 21 and Hypertext Transfer Protocol web traffic is always port 80. These are called well-known ports and go from 0 to 1023.

HTTP Methods :
- **GET**
  The GET method requests a representation of the specified resource. Requests using GET should only retrieve data.

- **HEAD**
  The HEAD method asks for a response identical to a GET request, but without the response body.

- **POST**
  The POST method submits an entity to the specified resource, often causing a change in state or side effects on the server.

- **PUT**
  The PUT method replaces all current representations of the target resource with the request payload.

- **DELETE**
  The DELETE method deletes the specified resource.

- **CONNECT**
  The CONNECT method establishes a tunnel to the server identified by the target resource.

- **OPTIONS**
  The OPTIONS method describes the communication options for the target resource.

- **TRACE**
  The TRACE method performs a message loop-back test along the path to the target resource.

- **PATCH**
  The PATCH method applies partial modifications to a resource.

MAC Address:

MAC addresses are used to verify the computer's physical address. It uniquely identifies the network's devices. While IP addresses are used to uniquely identify a device's network connection, they do not indicate whether a device is connected to a network.