**Q1**. **differences between HTTP/1.1 and HTTP/2**

HTTP/2 is the successor to HTTP/1.1 and was designed to address some of the limitations of HTTP/1.1. Here are some of the key differences between HTTP/1.1 and HTTP/2:

1. Multiplexing: In HTTP/1.1, a new connection must be established for each request/response transaction. In contrast, HTTP/2 allows for multiple requests and responses to be sent over a single connection simultaneously, allowing for greater efficiency and reduced latency.
2. Binary protocol: HTTP/1.1 uses text-based protocols, which can be verbose and require additional processing time. HTTP/2, on the other hand, uses a binary protocol, which is more efficient and can be processed more quickly.
3. Server push: HTTP/2 introduces server push, which allows the server to push additional resources to the client before they are explicitly requested. This can improve performance by reducing the number of requests needed to load a page.
4. Header compression: HTTP/1.1 headers are not compressed, which can add significant overhead to the communication between client and server. HTTP/2 includes header compression, which reduces the amount of data that needs to be transmitted and improves performance.
5. Flow control: HTTP/2 introduces flow control mechanisms that allow clients to control the amount of data they receive, reducing the risk of overwhelming the client with too much data.

Overall, HTTP/2 represents a significant improvement over HTTP/1.1 in terms of performance and efficiency, and it has been adopted by many web servers and web clients. However, not all web servers and clients support HTTP/2, so HTTP/1.1 is still widely used today.