**http 1 vs http 2 - assignment day 1**

**http 1**

* For every TCP connection there is only one request and one response.
* Can define 16 status codes; the error prompt is not specific enough.
* Uses basic authentication scheme which is unsafe since username and passwords are transmitted in clear text or base64 encoded.
* Provides support for caching via the If-Modified-Since header.
* HTTP/1.1 provides faster delivery of web pages and reduces web traffic as compared to HTTP/1.0. However, TCP starts slowly and with domain sharding (resources can be downloaded simultaneously by using multiple domains), connection reuse and pipelining, there is an increased risk of network congestion.

**http 2**

* Uses multiplexing, where over a single TCP connection resources to be delivered are interleaved and arrive at the client almost at the same time. It is done using streams which can be prioritized, can have dependencies and individual flow control. It also provides a feature called server push that allows the server to send data that the client will need but has not yet requested
* Underlying semantics of HTTP such as headers, status codes remains the same.
* Security concerns from previous versions will continue to be seen in HTTP/2. However, it is better equipped to deal with them due to new TLS features like connection error of type Inadequate\_Security.
* HTTP/2 does not change much in terms of caching. With the server push feature if the client finds the resources are already present in the cache, it can cancel the pushed stream.
* HTTP/2 utilizes multiplexing and server push to effectively reduce the page load time by a greater margin along with being less sensitive to network delays.