

Lecture 5: September 24, 2018

*Lecturer: Kamal Zille Huma**Notes By: Harsh Mistry*

5.1 HTTP

- HTTP (Hyper Text Transfer Protocol) provides the ability to point elsewhere from text. It is an application layer protocol and it how two applications communicate.
- HTTP involves requests and responses
- HTTP/1.0 required connections to be recreated consistently for each request
- A request message is in ASCII format
 - Req Line [GET/POST/PUT]
 - Header
 - * HOST
 - * User-Agent
 - * Accept
 - * Accept-Language
 - * Accept-Encoding
 - * etc ...
- A response is also in ASCII format
 - Status Line
 - Date
 - Server
 - Last Modified
 - Content Length
 - Keep Active
 - etc ...
- Status Codes
 - 1xx = not used
 - 2xx = successful
 - 3xx = redirections
 - 4xx = client error
 - 5xx = server error

5.2 HTTP 1.1

- HTTP 1.1 introduces persistent requests to avoid constant handshaking if the HTTP header "keep-alive" is set under connection
- If client does not request close, it will timeout after a certain limit defined in the headers
- Server must implement keep-alive
- Time-out duration must be negotiated
- HTTP has no way to keep track of repeated requests, as its stateless. This leads to the classic DDOS actions.
- HTTP 1.1 uses **Pipe-lining** which is when multiple requests are issued from the client. This causes the server to queue requests. This does not lead to performance advantages, as head-of-line blocking occurs.

Definition 5.1 $RTT \rightarrow$ Round Trip Time, How long it takes for one cycle of information.