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| What is user-agent (mail-reader)? | - hypertext transfer protocol  - Web’s application layer protocol  - client/server model (HTTP client- HTTP server) |
| What is URL? | - Mailbox: contains incoming messages for user  -Message Queue: contains outgoing mail messages  - SMTP protocol: used to send email messages |
| What is Multiplexing? | - Root DNS server  - Top Level Domain (TLD) DNS server  - Authoritative DNS server |
| What is mail-server? | 1xx: Informational responses  2xx: Successful responses  3xx: Redirects  4xx: Client errors  5xx: Server errors |
| What is HTTP? | 200 OK  • request succeeded, requested object later in this message  301 Moved Permanently.  • requested object moved, new location specified later in this message  400 Bad Request  • request msg not understood by server  404 Not Found  • requested document not found on this server  505 HTTP Version Not Supported |
| What is DNS? | a three-step process that requires both the client and server to exchange synchronization and acknowledgment packets before the real data communication process starts. |
| What is Demultiplexing? | compose, edit, read mail messages |
| What is cookies? | Connection-Oriented Multiplexing and Demultiplexing  Connectionless Multiplexing and Demultiplexing |
| What is Cache? | -DNS query message  -DNS reply message |
| What is 3-way handshake? | Gathering data from multiple application processes of sender, enveloping that data with header and sending them as a whole to the intended receiver |
| Types of protocols in application layer? | Helps to confirm to the other side that it has received the SYN. |
| Types of multiplexing & demultiplexing? | HTTP cookie is a small piece of data stored on the user's computer by the web browser while browsing a website.  -used to record the user's browsing activity. |
| Types of HTTP message? |  |
| Types of HTTP connection? | IP address- port number |
| Types of DNS records? | IP datagram (IP packet): source+ dest IP address  Segment header: source+ dest port number |
| Types of DNS message? | -Iterated query  - Recursive query |
| TCP socket is identified by? | -Non-persistent HTTP  -Persistent HTTP |
| TCP message types? | -Open protocol  -Proprietary protocol |
| SYN-ACK used for? | -POST method  -GET method  -HEAD method  -PUT method |
| SYN used for? | -Request message  -Response message |
| Protocols used for Email? | -SMTP (Simple Mail Transfer Protocol)  - delivery/storage of e-mail messages to receiver’s server  -IMAP Internet Message Access Protocol, POP3 (Post Office Protocol 3): retrieve e-mail messages  - HTTP (gmail, Hotmail, Yahoo! Mail) provides web-based interface |
| Multiplexing and Demultiplexing based on what as identifier? | SYN message from local device and ACK of the earlier packet. |
| HTTP response status code? | SYN, ACK, SYN-ACK, FIN |
| HTTP request message includes? | TCP (Transmission Control Protocol)  Reliable, in-order delivery, connection control, flow control, connection setup  UDP (User Datagram Protocol)  Unreliable, Unordered delivery |
| Hierarchy of DNS server? | TCP socket is identified by 4-tuples:  Source IP address  Destination IP address  Source port number  Destination port number |
| FIN used for? | TCP: Establish connection -> Transfer data -> Close connection.  UDP: Nothing -> Transfer data -> Nothing |
| Examples of status code for HTTP response message | The Cache interface provides a persistent storage mechanism for [Request](https://developer.mozilla.org/en-US/docs/Web/API/Request) / [Response](https://developer.mozilla.org/en-US/docs/Web/API/Response) object pairs that are cached in long lived memory. |
| Difference of TCP and UDP in using identifier? | Transport layer: logical communication between processes  Network layer: logical communication between hosts |
| Difference between transport and network layer? | -Type A, CNAME, NS, MX |
| Difference between TCP and UDP? | -Type of message  -Message Syntax  -Message semantics |
| Difference between TCP and UDP phases? | UDP use destination port number only  TCP use all 4 tuple : source + dest port number and IP address |
| Components of Email? | -Uniform Resource Locator  - the address of a given unique resource on the Web.  - Domain name (host name)/ Path name |
| Application layer protocols defines? | use header info to deliver received segments to correct application processes. |
| Address in Application layer? (Identifier) | -Used for mapping between address/domain name to IP address s.t computer can understand.  - DNS is distributed database implemented in hierarchy of many name servers |
| ACK used for? | Used to initiate and establish a connection. |
| 2 kinds of query for DNS? | Used to terminate a connection. |
|  | -User-agent (mail-reader)  -Mail-server  -SMTP |