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CS 436

Network HW #3

1)
a) Reliable data transfer:- TCP only
b) A guarantee that the data will be delivered within a specified amount of time - none
c) A guarantee that a certain value for throughput will be maintained - none
d) Security - none

2) DNS needs only time query responses such as UDP which requires non live connections on the other hand TCP requires live connection which runs on HTTP and TCP protocol.

3) Application layer protocols: DNS and HTTP
Transport layer protocols: UDP for DNS; TCP for HTTP
Client ip address, port number, source ip address, and source port number are all are used by the http server to identify each client running on different hosts.

4) We can periodically collect information of the DNS caches in local DNS servers. For example, the web server that appears most in the DNS caches will probably be the most popular server. So, that Web server that appears in the DNS caches most frequently will stand out from the rest.

5) When host C receives and IP datagram, it looks at these four fields in the datagram/segment to determine which socket it will pass the payload of the TCP segment. So, the requests from A and B will pass through different sockets. Basically the identifier for both of these sockets will have 80 for the destination port; but, the identifiers for these sockets will have different values for IP addresses.

6)
a) False. Piggyback is only for efficiency. If there's no data packet to be piggybacked to, then B will just send the acknowledgement packet.
b) False. The sequence number of the subsequent segment depends on the number of 8-byte characters in the current segment.
c) False. The acknowledgement number has nothing to do with the sequence number. The ack. number indicates the next sequence number A is expecting from B.

7)
a) second - first = data in first segment so 110 - 90 = 20
b) In the acknowledgment the Host B sends to Host A, then the acknowledgment number will be first segment meaning that it would be 90.

8)

Segment	Sequence	Acknoledgement
First	43	80
Second	80	44
Third	44	81