Name: Iftekharul Flakim

Id: 21101319

sec: 22

Course: CSE 421

Assignment 01

Fall 2024

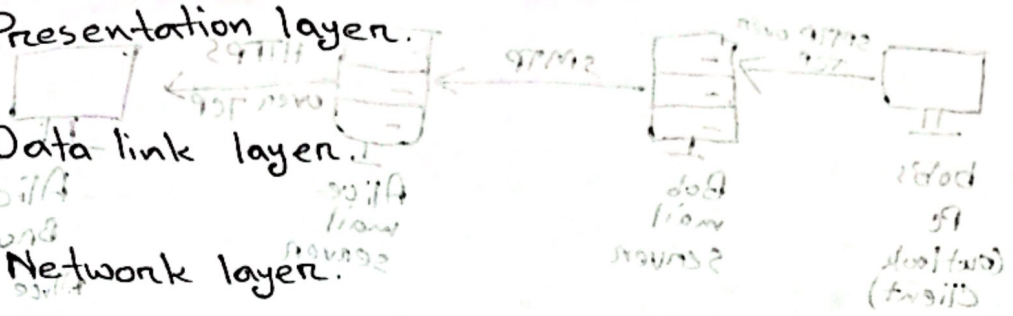
Set B

Answer to the question no.1

i) Presentation layer.

ii) Data link layer.

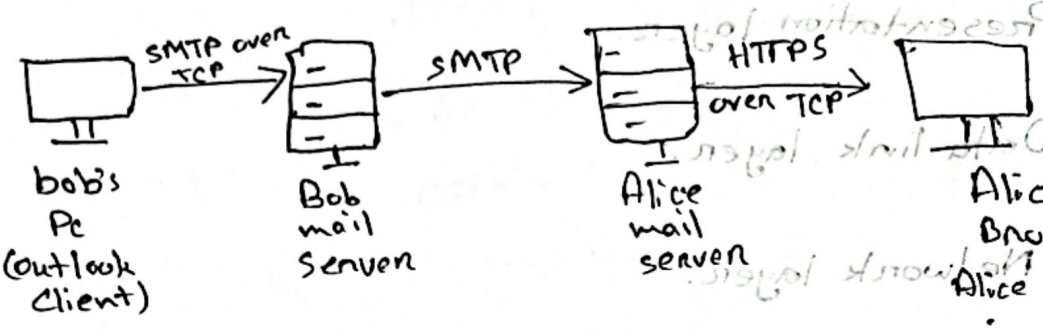
iii) Network layer.



Answer to the question no.2

The social media platform knew about our choices because the online clothing store and the social media site share user activity data through cookies, tracing pixcels, and ad networks, allowing for targeted advertising based on our browsing behavior.

Answer to the question no.3



Answer to the question no.4

Record type	Host/Name	Value/Data	Purpose
A	www.gaming-forall.com	200.10.20.7	Maps the web address to the server's IP address so user can visit ~~your~~ website.
A	mail.gaming-forall.com	200.10.20.7	Maps the mail server host name to the same IP.
Mx	gaming-forall.com	10 mail.gaming-forall.com	Defines the mail exchange server responsibility for handling emails for domain
Ns	gaming-forall.com	ns1.yourdnsprovider.com	Defines the primary authoritative name server for ~~your~~ domain

Answer to the question no. 5

If two browser tab visit bracu.ac.bd, each tab establishes a seperate TCP connection with the bracu web server. Although both requests go to the same server IP and port (80 for HTTP or 443 for HTTPS), the client assigns a different random ~~port~~ source port for each tab. The server differentiates the request ~~for~~ using the unique combination of source IP, source port, destination IP and destination port. When sending replies, the server uses its own source port and sends data back to the clients respective source port, which becomes the destination port in each reply.

Answer to the question no.6

i) Given,

Total object = 18

size of each object = 12 MB

server TCP request time = 12 ms

HTTP request + respond time per object = 15 ms

server speed = 42 Mbps.

$\therefore$ Total RTT = $12 + (15 \times 18)$

$= 282$ ms

ii) File size $= 12 \text{ MB} = 12 \times 8 = 96$ Mb per object

Transmission time per object $= \frac{96}{42}$

$= 2.2857$ s

$= 2285.7$ ms

$\therefore$ Total file transmission time $= (2285.7 \times 18)$

$= 41142.6$ ms.

Answer to the question no.7

i) Average respond time = $0.50(35) + 0.25(35+50) + 0.25(35+50+300+200)$

$= 0.50(35) + 0.25(85) + 0.25(585)$

$= 185.0$ ms

ii) Since PC A just visited xyz.com the page is cached in the department proxy. That means the request is served locally via the ese LAN only

∴ Exact responde time for PC-A = 35 ms.

Answer to the question no.8

i) The server retransmit S1 because it never received ACK for that segment before its RTO expired. Under Go-Back-N, a sender retrans the unacknowledged segments when a timeout occu

The diagram shows S1 delivered to the

client, so when duplicate S1 arrives the client drops the duplicate payload and continues to send a cumulative Ack for the next in order byte it still expects.

ii) Client ISN = 1455

first data byte from client has sequence number 1455+1
= 1456

server ISN = 2010

∴ first date byte from server has sequence = 2010+1
= 2011

∴ C_1 = 320 bytes → occupies client bytes seq 1456.. 1456+319

C_2 = 111 bytes → occupies next 111 bytes

C_3 = 260 bytes → next

∴ The sequence number of C_3 = 1456 + 320 + 111
= 1887

∴ Ack number carried in C_3 = 2011 + 220 + 421
= 2652

iii) Initial advertised received window = 10000 bytes.

Total bytes from client = 320 + 111 + 260
= 691

∴ rwnd = 10000 - 691

= 9309 bytes