CSE421 Assignment 02 [MSMA | 2024 Fall]

Total points 92.7/100

Answer all the questions in this form. PDF submission is optional for the math problems/short answer questions. **You can submit only once even if you submit by mistake. Make sure that your answers are put correctly by refreshing the page. Deadline: November 12, 2024 (Tuesday) 11:59:59pm**

Answer Q1 to Q3 based on the following scenario.
You have one browser on your computer: Microsoft Edge and you just installed Chrome. You visited daraz.com yesterday using your Edge browser. Now you are visiting daraz.com for the first time using your Chrome browser. Then again the next day you visited daraz.com and amazon.com using your Chrome browser.

✓ **Q1. When you first visited daraz.com using Chrome, *** 5/5

- [ ] HTTP request message had the cookie number in its header.
- [ ] Chrome will assign a cookie number for the amazon server
- [x] The server created a cookie ID for this user and sent this in the response header. ✓
- [ ] The server performed a cookie-specific action since you already visited the site using edge.

✓ **Q2. When you visited daraz.com the next day using Chrome, *** 5/5

- [x] HTTP request message had the cookie number in its header. ✓
- [ ] Chrome will assign a cookie number for the amazon server
- [ ] The server created a cookie ID for this user and sent this in the response header.
- [x] The server performed a cookie-specific action since you already visited the site using chrome. ✓

✓ **Q3. When you visited amazon.com the next day using Chrome, *** 5/5

- [ ] Chrome will assign a cookie number for the amazon server
- [x] The amazon server will assign a cookie number for your chrome browser ✓
- [x] The cookie number can be same as the cookie number used by daraz.com for edge browser ✓
- [x] The cookie number can be same as the cookie number used by daraz.com for chrome browser ✓

Answer Q4 to Q6 based on the following scenario.

There is a proxy server installed by your ISP and no one from your ISP previously visited abedu.ac.bd. Now, you visited the site on October 6, 2023. And you again visited the site on October 8, 2023.

✓ **Q4. Assuming the webpage was last modified on October 5, 2023, when you visited the site on October 6, 2023,** *5/5

- [x] The proxy server requested the webpage from the origin server using the Get method ✓
- [ ] The proxy server requested the webpage from the origin server using the Conditional Get method.
- [x] The status code of the response message from the origin server was 200. ✓
- [ ] The status code of the response message from the origin server was 304
- [ ] Proxy server sent the version it had when the client requested

✓ **Q5. Assuming the webpage was last modified on October 5, 2023, when you visited the site on October 8, 2023,** *5/5

- [ ] The proxy server requested the webpage from the origin server using the Get method
- [x] The proxy server requested the webpage from the origin server using the Conditional Get method. ✓
- [ ] The status code of the response message from the origin server was 200
- [x] The status code of the response message from the origin server was 304 ✓
- [x] Proxy server sent the version it had when the client requested ✓

✓ **Q6. Assuming the webpage was last modified on October 7, 2023, when you visited the site on October 8, 2023,** *5/5

- [ ] The proxy server requested the webpage from the origin server using the Get method
- [x] The proxy server requested the webpage from the origin server using the Conditional Get method. ✓
- [x] The status code of the response message from the origin server was 200. ✓
- [ ] The status code of the response message from the origin server was 304
- [ ] Proxy server sent the version it had when the client requested

Answer Q7 to Q9 based on the following scenario.
Your LAN speed is **30Mbps**, LAN utilization is **20%**, and access link speed is **25Mbps**.

There is a proxy server in your LAN and three origin servers; one inside your LAN and two outside your LAN. The hit ratio of the proxy server is **40%**. It is estimated that your LAN delay is **8 ms**, the access delay for origin server 2 is **51 ms,** the access delay for origin server 3 is **76 ms** and the Internet delay is **1.2 s.** Each origin server equally handles the requests not served by the proxy server.

✓ **Q7. Calculate the access link utilization in percentage. *** 10/10

24 ✓

Feedback

*used = lan utilazation * available = 0.2*30*

*0.2*30/25=0.24=24%*

✓ **Q8. If the number of objects requested per second is 12, find out the size of each objects (in Mb). All the objects have same size.** *10/10

0.5 ✓

Feedback

*object = 0.2*30/12=0.5*

✓ **Q9. What is the average time to load a webpage? (in ms) *** 15/15

510.2 ✓

Feedback

*0.4*8+0.2*8+0.2*(51+1200)+0.2*(76*1200)*

✓ **Q10. Which of the followings are correct?** * 5/5

- [ ] HTTPS uses Application Layer Service to provide security since it is an Application Layer Protocol
- [x] SSL Certificate includes cryptographic data for encryption ✓
- [x] SSL Certificate includes data about organization for authentication ✓
- [ ] SEO avoids giving preference to SSL protocol used websites as they can't be read from outside

✓ **Q11. If David uses google mail and Warner uses yahoo mail. When Warner sends an email to David and the email is received at the receiver server,** *5/5

- (●) The message is stored in the mailbox of David ✓
- ( ) The message is stored in the mailbox of Warner
- ( ) The message is stored in the message queue of yahoo mail server
- ( ) The message is stored in the message queue of google mail server

✓ **Q12. Which of the followings are correct?** * 5/5

- [ ] In case of SMTP, objects are sent in multiple messages
- [x] IMAP keeps all mails in one place at a server ✓
- [x] Using IMAP, we can read the message in part even before downloading it fully. ✓
- [ ] SMTP handshaking is done before TCP handshaking
- [x] SMTP connection closing is done before TCP connection closing ✓

Answer Q13 to Q16 based on the following scenario.

Suppose you are going to visit the www.abedu.ac.bd website for the first time. The DNS query is done in the following sequence,

PC -> Local DNS -> Root DNS -> Top Level Domain -> AS1 -> AS2

✓ **Q13. How many DNS queries are needed to get the IP address of the website?** *5/5

5 ✓

✗ **Q14. Suppose your local DNS server stores the .com domain server's IP address for 24 hours and your PC doesn't store anything. How many DNS queries would the local DNS server need if you again visit the website after 2 days and recursive query is used?** *3/5

5 ✗

Correct answer

4

Individual feedback

Asked for Local DNS server

Q15. Suppose your local DNS server stores the .bd domain server's IP address for 24 hours and your PC doesn't store anything. How many DNS queries would the local DNS server need if you again visit the website on the same day and iterative query is used? *3/5

4

Correct answer

3

Feedback

Asked for local DNS server

Q16. Suppose the local DNS server has the information about AS1. Then in iterative DNS queries, *1.67/5

- [ ] Local DNS Server won't query to your device
- [x] Local DNS Server won't query to the Root DNS server
- [x] Local DNS Server won't query to the Top Level Domain server
- [x] Local DNS Server won't query to AS1
- [ ] Local DNS Server won't query to AS2

Correct answer

- [x] Local DNS Server won't query to your device
- [x] Local DNS Server won't query to the Root DNS server
- [x] Local DNS Server won't query to the Top Level Domain server

[This is optional] Submit your workings through a pdf file. Naming Format: ID_Name

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