CISC 856 TCP/IP & Upper Layer Protocols
SMTP Homework

1. Read chapter 23 from the TCP/IP protocol Suit – 4th edition and answer the questions from 2-5,8,9,11-12. Also submit the online quiz to Prof. Amer.

2. User aaa@xxx.com sends a message to user bbb@yyy.com, which is forwarded to user ccc@zzz.com. User ccc@zzz.com then replies to bbb@yyy.com. Show all SMTP commands and responses.

3. Exercises

a. Short experiment 1

Telnet into a SMTP server
In this exercise we connect directly to an MTA to send a message using SMTP and see what happens in such a transfer.

1. Open 2 terminals.
2. One of them is your client machine, the other will be your data collection machine and your server will be the host you are sending the mail to.
3. Start a script in both the client terminal and the data collection machine terminal.
4. Run tcpdump on the data collection machine terminal by making it listen to connections between **your machine** (e.g.: stimpy.cis.udel.edu) and the SMTP server **mail.udel.edu** you are connecting to over **port 25**.
5. In the client window type: **telnet mail.udel.edu 25**
6. A TCP connection is established and the SMTP server responds with the first message of the 'application handshake' once the connection is established.

7. Type the following commands
    HELO [your host name – mail.udel.edu]
    After the response from the server type
    MAIL FROM: [your udel.edu email address]
    Now include the subject line by adding
    SUBJECT CISC 856 SMTP Assignment
    The next step is to identify the recipient of the email with
    RCPT TO: [recipient email address]
    Send a carbon copy of the email to:
    RCPT TO: vinar@udel.edu
    RCPT TO: amer@cis.udel.edu
    RCPT TO: yourself
    RCPT TO: your partner

    Once all of your recipients have been specified, type
    DATA
    Data keyword is used to begin sending the body of your email. Be sure to add

appropriate message headers so the receiver will get a message. Type in a meaningful message and do not forget to mention yours and your partner's name to identify your email.

At the end to complete the message, type a '.' on a line by itself.

Type **QUIT** to end your SMTP session.
Exit both your client and the data collection machine scripts.

In your client output, show the server responses and the client responses distinctly. Can you follow how the handshaking is taking place and the meaning of the server responses?

In the tcpdump output, write next to each line of output, the corresponding server or client output that data represents. For example: write next to the line in the trace whether it belongs to a 250 response from the server or belongs to a HELO message from the client.

Also make a note of the number of bytes that are being sent as part of the body of the message on your tcpdump output.

Deliverables:
Neatly annotated client script, tcpdump output.

b. Short experiment 2
In above experiment, instead of typing your email address, type someone else's address. Does this mail go?

Make sure that the recipient address is your udel.edu address and that a carbon copy goes to vinar@udel.edu and amer@cis.udel.edu.

Again don't forget to add a meaningful message including the names of both the team members.

c. Short experiment 3
Open one terminal.
Start a script in the terminal.
In the client window type: **telnet mail.udel.edu 25**
A TCP connection is established and the SMTP server responds with the first message of the 'application handshake' once the connection is established.
Type

HELO [your name].udel.edu
After the response from the server repeat the same steps as above to send an email to your account. Is this mail received? Why or why not?