National Institute of Technology Calicut
Department of Computer Science and Engineering

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CS3093D: Networks Laboratory

Modification Question for Experiment No. 7

SMTP is used to send mails from a mail client to the mail server which does not help in the mail retrieval process. For that, we use POP3 protocol. POP3 downloads all the messages from the server and stores the messages locally on your computer or device. However, it is complicated to access email using POP3 on multiple devices. i.e., if you are using multiple devices, their mail folder will most likely be different from each other. In order to access your mailfolder across multiple devices synchronously, you need to implement IMAP (Internet Message Access Protocol).

IMAP is a protocol your email client uses to synchronize all the messages between the server and your clients. i.e., when you read a message on your personal laptop, it will also show up as read on your work computer, smartphone, tablet, and other devices. With IMAP, the email is stored on the server. (More details of IMAP are available in RFC 1730). In this assignment, you will implement a IMAP client-server.

By this time, you may have implemented the smtpmail.c, and mailclient.c programs. In this evaluation, you need to write a C program named imap*server.c to* run a IMAP server to let the *client* machine access and manage the mailbox synchronously. The program will take a command line integer argument imap_*port* that will indicate the port on which the IMAP server will run.

mailclient.c

You may have already implemented the ***mailclient.c,*** which could send a mail. The program should first be asking for the username and password. Once authentication is successful, it should then ask for the user's options and wait for user input from the keyboard. You may have already implemented the Send Mail and Quit options. Now you need to add an option ***Manage_Mail*** to the SMTP Client program you have already created.

1. Send Mail : Allows the user to send a mail
2. Manage Mail : Shows the stored mails of the logged in user only
3. Quit : Quits the program

Send_Mail function:

First a list of the mails in the logged in user's **Mail Box** is shown by the program on the screen in the following format:

<Sender's email id> <When received, in date: hour: minute> <Subject>

The program then gives a prompt to enter one sender's mail address. And the task is to filter out the mails from that specific sender.

1. If the mail ID is invalid print "INVALID MAIL-ID" and give one more chance to enter the mail ID. If the mail is invalid again, go back to the 3 options menu.
2. If the mail ID is valid and if there is no mail from that specific sender, ``NO MAILS TO SHOW" is printed and the user is supplied with the 3 options menu.
3. If the user enters a valid mail ID,
   (a) All the mails from that specific sender is shown on the screen (the entire content including From, To, Subject, Received, and message body).

(b) Now open two terminals for a single user (For example, one may be your laptop and the other may be your desktop PC or both terminals in one machine). Delete a mail from one of the user device. The action should be synchronised in both the devices described above.

Note that the mails are stored in the MailServer machine as **mymailbox.mail**. To read them, the program will need to communicate with the IMAP server running on the MailServer machine. This will be done by opening a connection to the IMAP server and using the IMAP protocol.

imapserver.c

The client must send the username and password and authenticate itself to the IMAP. Once the IMAP server has confirmed the client, the client should be given access to the appropriate mailbox.

Note : IMAP does not download the entire message until you open the message, which allows the initial connection and startup faster.