

## Assignment # 1

The goal of this assignment is to implement a **python-based simple mail client** without using any **library functions** like *smtplib*, which can be used to send emails to any recipient. Through this assignment, students will learn the working mechanism of E-mails and specifically understand the SMTP protocol via interacting with the SMTP server.

The developed email client should connect to a SMTP server and communicate using the protocol's standard to send an email to any email address.

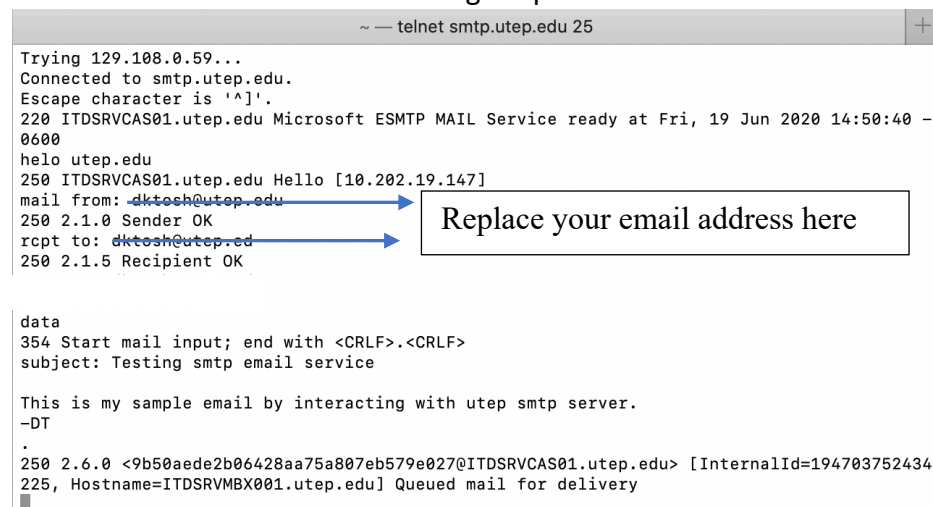
### Task Details:

#### Part-1 (Sending email through interacting with SMTP server from terminal)

At the terminal/command prompt, type

```
$ telnet smtp.utep.edu 25
```

You will observe similar to following snapshot:



```
~ — telnet smtp.utep.edu 25
Trying 129.108.0.59...
Connected to smtp.utep.edu.
Escape character is '^]'.
220 ITDSRVCAS01.utep.edu Microsoft ESMTP MAIL Service ready at Fri, 19 Jun 2020 14:50:40 -
0600
helo utep.edu
250 ITDSRVCAS01.utep.edu Hello [10.202.19.147]
mail from: dktoosh@utep.edu
250 2.1.0 Sender OK
rcpt to: dktoosh@utep.edu
250 2.1.5 Recipient OK

data
354 Start mail input; end with <CRLF>.<CRLF>
subject: Testing smtp email service

This is my sample email by interacting with utep smtp server.
-DT
.
250 2.6.0 <9b50aede2b06428aa75a807eb579e027@ITDSRVCAS01.utep.edu> [InternalId=194703752434
225, Hostname=ITDSRVMBX001.utep.edu] Queued mail for delivery
```

Now, check your email. You should have received an email from yourself. If so, this is a good sign that you have completed the first part.

#### Part-2 (Writing socket program to automate the above interaction)

Using socket programming [1], connect to the campus SMTP mail server (*smtp.utep.edu*, Port 25). Then, implement the smtp conversations [2, 3] in the python program (*Lastname\_EmailClient.py*), which will contact the UTEP SMTP server to send an email. You can first test sending an email to your own UTEP miners email. Then, configure your client to send a

test email (as per the format given below) to any non-UTEP email address. Finally, you will need to send a test email to [dktoshtosh.utep@gmail.com](mailto:dktoshtosh.utep@gmail.com).

#### Format of Test Email:

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**Subject:** "Email from my email client"

**Body:** "This is a test email from my own email client. Hope it finds you well. %Lastname, Firstname%."

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#### Important Points:

1. Make sure you fill the lastname and firstname accordingly.
2. You are allowed have your own format for the python code, but it has to be as modular as it can with appropriate documentations.
3. Instructions of running your program must be provided in a README.txt file.

#### Bonus (15%)

- Instead of UTEP's SMTP server, use **smtp.gmail.com** and Port **587** in your python email client (*lastname\_ExtEmailClient.py*) to send an email from your external Gmail account to the UTEP miners account.
- This will require to use the **ssl** library [4] to authenticate before sending an email.
- Your username and password will be sent to the SMTP server via base64 encoding.

#### What to be submitted:

1. A **PDF formatted report** with all evidences, codes, execution samples, instructions for running the submitted programs, and references used.
2. Well-documented source codes and README.txt in the form of **one single Zip** file.

#### Few resources you can use:

[1] Socket programming in python: <https://realpython.com/python-sockets/>

[2] SMTP command references: <https://www.samlogic.net/articles/smtp-commands-reference.htm>

[3] List of All SMTP Commands and Response Codes:  
<https://blog.mailtrap.io/smtp-commands-and-responses/>

[4] Python SSL library: <https://docs.python.org/3/library/ssl.html#module-ssl>