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Description:

In this assignment I was tasked with building an SMTP client using Python. This client connects to an SMTP server (Google in my case) and performs the necessary exchanges to send an email. Below you can find my code and screenshots of my output, including the received email.

SMTP Client Code:

```python
from socket import *
import base64
import ssl
import json

#Password and email information are stored in a config json
#This file is in .gitignore
with open('config.json', 'r') as config:
    config = config.read()
    config = json.loads(config)

email = config['SMTP_EMAIL']
rcvEmail = config['SMTP_RCV_EMAIL']
pswd = config['SMTP_PSWD']

#Mail server info
mailServer = ('smtp.gmail.com', 587)

try:
    #Creating a TCP socket to connect to the mail server
    mailSocket = socket(AF_INET, SOCK_STREAM)
    mailSocket.bind(('', 1234))
    mailSocket.connect(mailServer)
    recv = mailSocket.recv(1024).decode()
    print(recv)

    if '220' not in recv:
        raise Exception ('220 reply not received from server.')

    #Sending HELO msg to server
    helloCmd = 'EHLO ' + mailServer[0] + '\r\n'
    mailSocket.send(helloCmd.encode())
```

```python
recv = mailSocket.recv(1024).decode()
print(recv)

if '250' not in recv:
    raise Exception ('250 reply not received from server.')

#Sending a STARTTLS command
mailSocket.send('STARTTLS\r\n'.encode())
recv = mailSocket.recv(1024).decode()
print(recv)

#Authenticate
sMailSocket = ssl.wrap_socket(mailSocket, ssl_version=ssl.PROTOCOL_SSLv23)
sMailSocket.send('AUTH LOGIN\r\n'.encode())
recv = sMailSocket.recv(1024).decode()
print(recv)

if '334' not in recv:
    raise Exception ('334 reply not received from server.')

#Send username
sMailSocket.send(base64.b64encode(email.encode()) + '\r\n'.encode())
recv = sMailSocket.recv(1024).decode()
print(recv)

if '334' not in recv:
    raise Exception ('334 reply not received from server.')

#Send password
sMailSocket.send(base64.b64encode(pswd.encode()) + '\r\n'.encode())
recv = sMailSocket.recv(1024).decode()
print(recv)

if '235' not in recv:
    raise Exception ('235 reply not received from server.')

#Send mail from cmd
sMailSocket.send('MAIL FROM:<'.encode() + email.encode() + '>\r\n'.encode())
recv = sMailSocket.recv(1024).decode()
print(recv)

if '250' not in recv:
    raise Exception ('250 reply not received from server.')

#Send rcpt to cmd
sMailSocket.send('RCPT TO:<'.encode() + rcvEmail.encode() + '>\r\n'.encode())
recv = sMailSocket.recv(1024).decode()
print(recv)
```

```python
        if '250' not in recv:
            raise Exception ('250 reply not received from server.')

        #Send data cmd
        sMailSocket.send('DATA\r\n'.encode())
        recv = sMailSocket.recv(1024).decode()
        print(recv)

        if '354' not in recv:
            raise Exception ('354 reply not received from server.')

        #Send msg
        sMailSocket.send('Subject: CSC138-03 Personal SMTP Client\n\n'.encode())
        sMailSocket.send('Hi Quinn,\n\nThis message was sent from your personal SMTP client in Py
thon.\n\nSincerely,\nYour Python SMTP Client'.encode())
        sMailSocket.send('\r\n.\r\n'.encode())
        recv = sMailSocket.recv(1024).decode()
        print(recv)

        if '250' not in recv:
            raise Exception ('250 reply not received from server.')

        #Send quit cmd
        sMailSocket.send('QUIT\r\n'.encode())
        recv = sMailSocket.recv(1024).decode()
        print(recv)

        if '221' not in recv:
            raise Exception ('221 reply not received from server.')

        mailSocket.close()
        sMailSocket.close()
        print('\nExchange finished, email sent.')

except Exception as e:
    print(e)
    exit()
```

Terminal Output:

```
220 smtp.gmail.com ESMTP v3sm4516410pjn.7 - gsmtp

250-smtp.gmail.com at your service, [67.172.168.17]
250-SIZE 35882577
250-8BITMIME
250-STARTTLS
250-ENHANCEDSTATUSCODES
250-PIPELINING
250-CHUNKING
250 SMTPUTF8

220 2.0.0 Ready to start TLS

334 VXNlcm5hbWU6

334 UGFzc3dvcmQ6

235 2.7.0 Accepted

250 2.1.0 OK v3sm4516410pjn.7 - gsmtp

250 2.1.5 OK v3sm4516410pjn.7 - gsmtp

354  Go ahead v3sm4516410pjn.7 - gsmtp

250 2.0.0 OK  1607450606 v3sm4516410pjn.7 - gsmtp

221 2.0.0 closing connection v3sm4516410pjn.7 - gsmtp


Exchange finished, email sent.
```

Received Email:

Reply   Reply all   → Forward   Archive   Delete   Set flag   •••

CSC138-03 Personal SMTP Client

C

10:03 AM

Hi Quinn,

This message was sent from your personal SMTP client in Python.

Sincerely,
Your Python SMTP Client