



# SMTP Server

" Simple Mail Transfer Protocol "

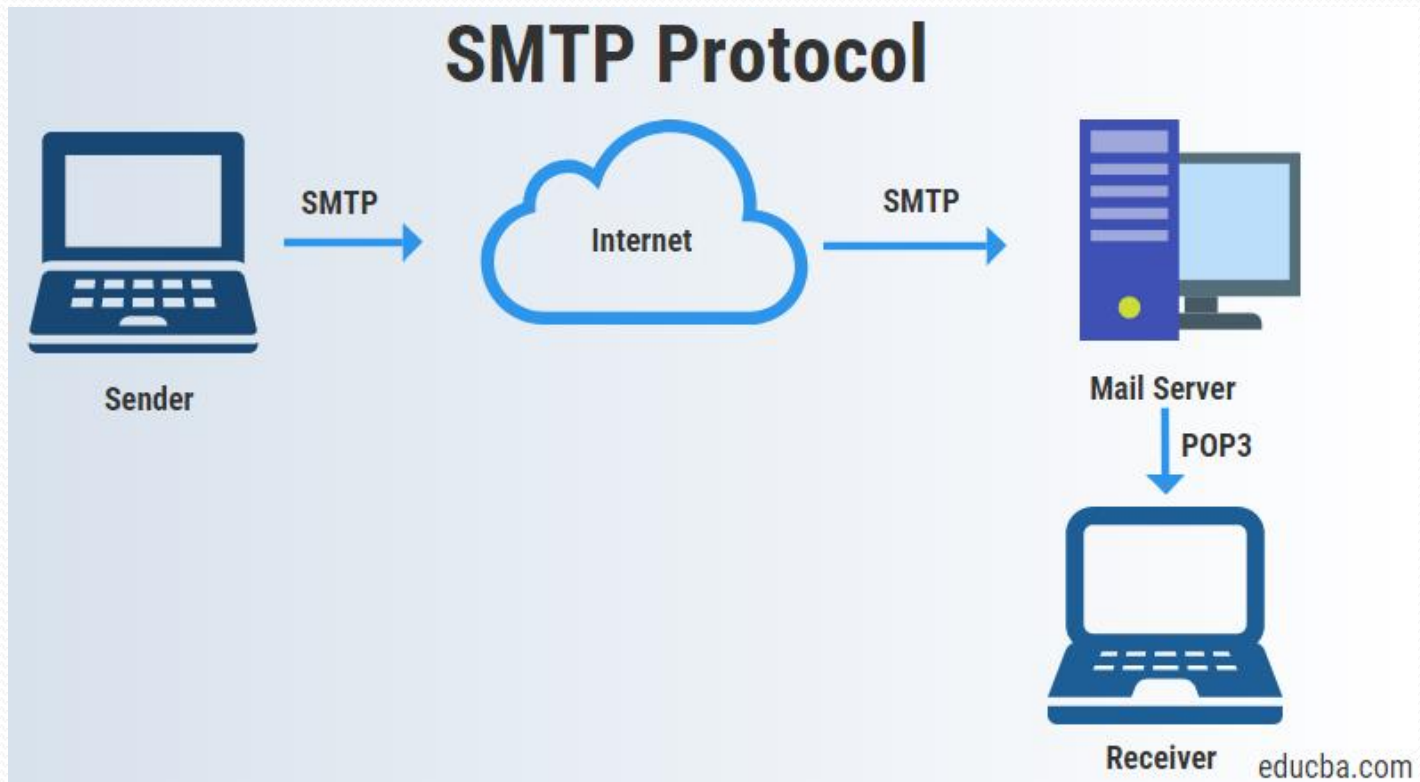
**Presented By :** Shubham Singh Chouhan

## “SMTP”

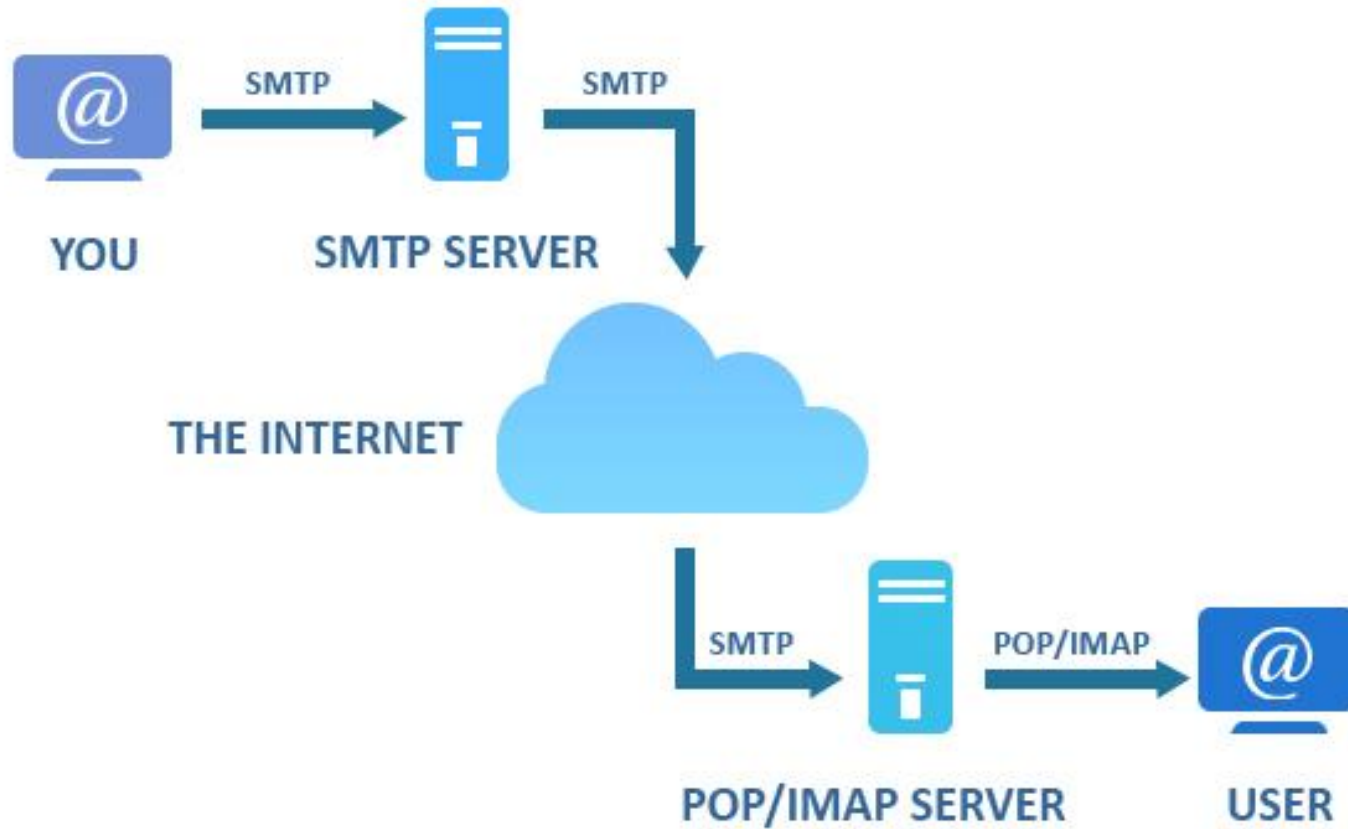
SMTP stands for **Simple Mail Transfer Protocol**, and it's an application used by mail servers to send, receive, and/or relay outgoing mail between email senders and receivers.


An SMTP email server will have an address (or addresses) that can be set by the mail client or application that you are using and is generally formatted as `smtp.serveraddress.com`. For example, Gmail's SMTP server host address is `smtp.gmail.com`, and Twilio SendGrid's is `smtp.sendgrid.com`. You can generally find your SMTP email server address in the account or settings section of your mail client.

# SMTP-Protocol



## How SMTP works





SMTP provides a set of codes that simplify the communication of email messages between email servers (the network computer that handles email coming to you and going out). It's a kind of shorthand that allows a server to break up different parts of a message into categories the other server can understand. When you send a message out, it's turned into strings of text that are separated by the code words (or numbers) that identify the purpose of each section.

SMTP provides those codes, and email server software is designed to understand what they mean. As each message travels towards its destination, it sometimes passes through a number of computers as well as their individual MTAs. As it does, it's briefly stored before it moves on to the next computer in the path. Think of it as a letter going through different hands as it winds its way to the right mailbox.

## Technology Used

- Python3
- HTML/HTML5
- CSS3
- Python Libraries
- Javascript

## Libraries Used in Project

- **Smtplib**

- The smtplib module defines an **SMTP client session object that can be used to send mail to any Internet machine with an SMTP** or ESMTP listener daemon.

- **Os**

- This **module** provides a portable way of using **operating system** dependent functionality.

- **Emailmessage**

- The central class in the email package is the **EmailMessage** class, imported from the email.message **module**. It is the base class for the email object model.

- **Smtplib\_ssl**

- SSL stands for **Secure Sockets Layer** and is designed to create secure connection between client and server.

- **Imghdr**

- The imghdr module **determines the type of image contained in a file or byte stream**.

# Software Requirement

- Mail Server
  - Sending mail between server's connection through network.
- 2 different Email Accounts
  - This demo email accounts for testing of our project.
- JetBrains PyCharm Community Edition 2019.3 x64
  - For write & run a program.
- Localhost 1025 access
  - Make sending mail pattern for multiple mails.



## Hardware Requirement

- Good quality of internet connection.
- 4GB RAM, 1.5 GB free disk space.
- Windows-10, 64-bit system
- Quad-Core 2 Ghz or higher.
- Python 3.9.0 installed.

## Project Makes Start

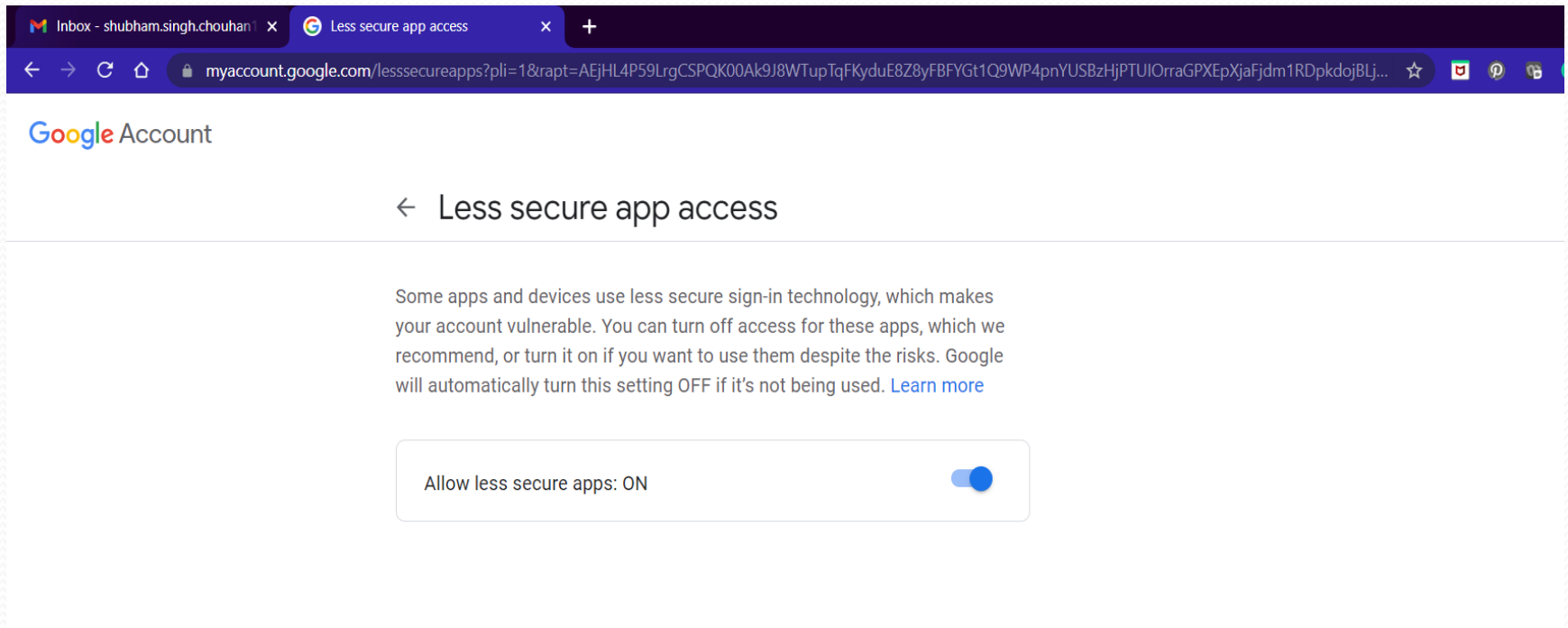
In this project, I am working on “How to automatically send email using python?” .

I will cover topics like how to send mail using –

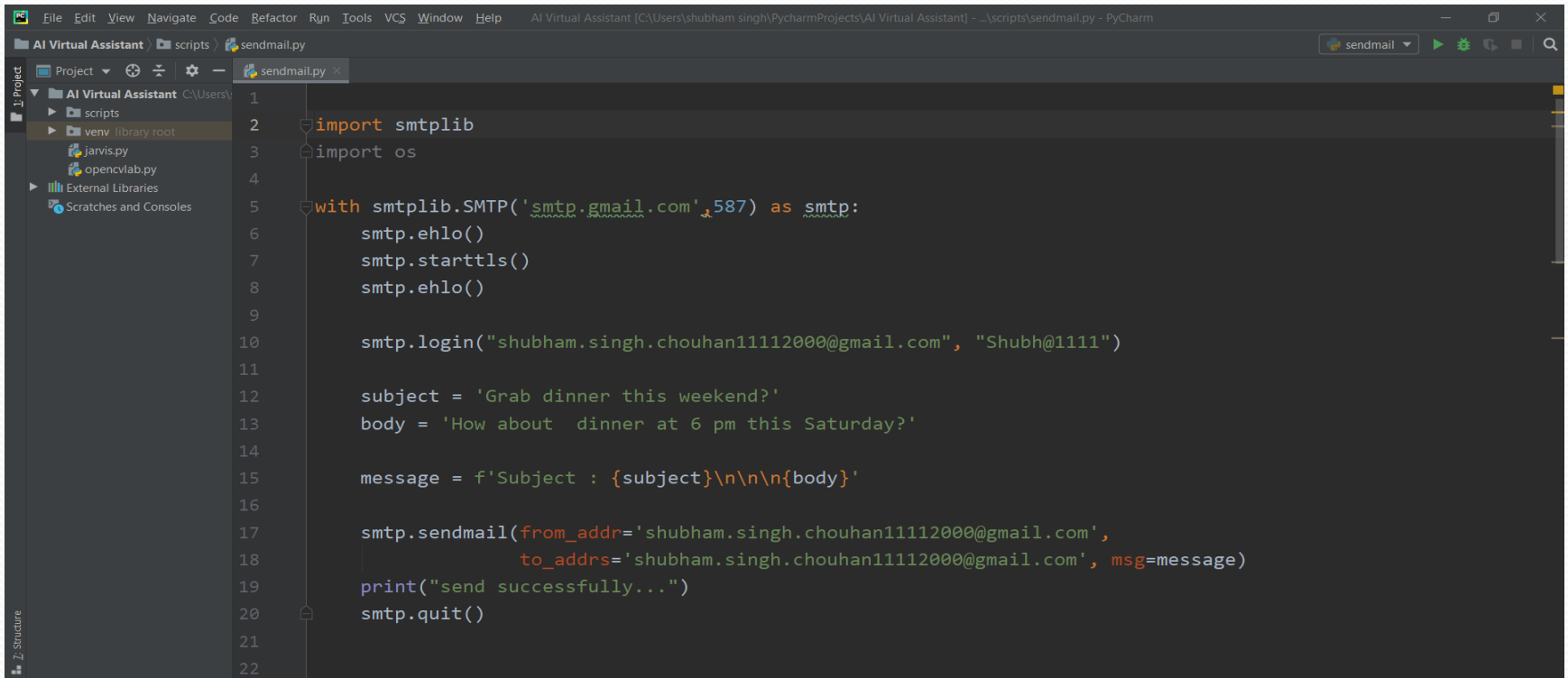
- Normal plain text
- Attach Images
- PDF
- HTML Message

I will also cover “How to see our message using localhost?” .

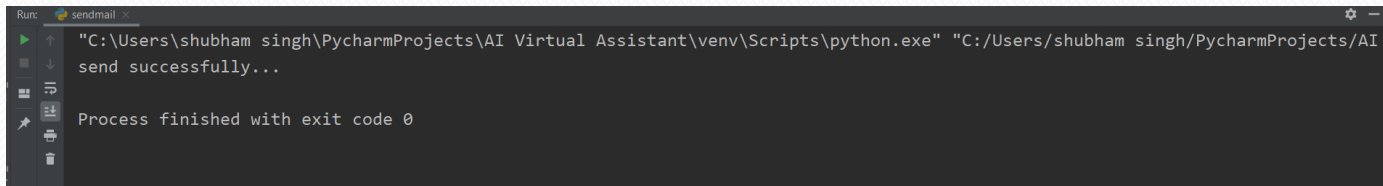
So, first step is open [myaccount.google.com/lesssecure](https://myaccount.google.com/lesssecure) & turn on less secure app access .



# 1. Sending Normal Plain Text Email

A screenshot of the PyCharm IDE interface. The main editor window displays the 'sendmail.py' script. The script uses the 'smtplib' library to connect to a Gmail SMTP server and send an email. The email subject is 'Grab dinner this weekend?' and the body is 'How about dinner at 6 pm this Saturday?'. The sender's email address is 'shubham.singh.chouhan11112000@gmail.com' and the recipient's is 'Shubh@1111'. The script prints 'send successfully...' upon completion. The left sidebar shows the project structure with folders for 'scripts' and 'venv', and files like 'jarvis.py' and 'opencvlab.py'.

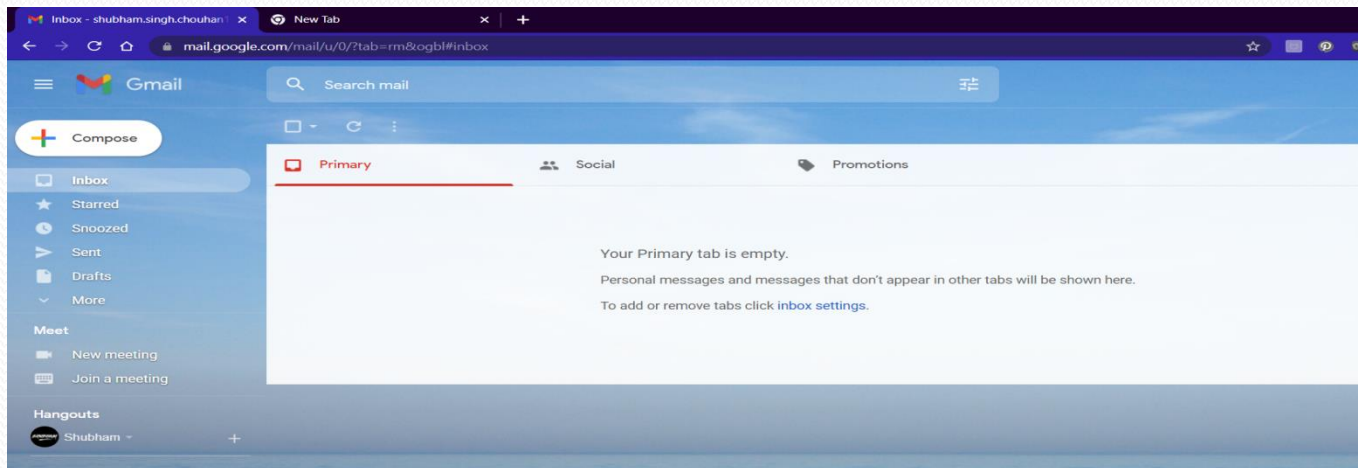
```
1 import smtplib
2 import os
3
4 with smtplib.SMTP('smtp.gmail.com', 587) as smtp:
5     smtp.ehlo()
6     smtp.starttls()
7     smtp.ehlo()
8
9     smtp.login("shubham.singh.chouhan11112000@gmail.com", "Shubh@1111")
10
11     subject = 'Grab dinner this weekend?'
12     body = 'How about dinner at 6 pm this Saturday?'
13
14     message = f'Subject : {subject}\n\n{body}'
15
16     smtp.sendmail(from_addr='shubham.singh.chouhan11112000@gmail.com',
17                  to_addrs='shubham.singh.chouhan11112000@gmail.com', msg=message)
18     print("send successfully...")
19     smtp.quit()
20
21
22
```

A screenshot of the PyCharm Run console. It shows the execution of the 'sendmail.py' script. The output indicates that the email was sent successfully and the process finished with an exit code of 0. The console also shows the command used to run the script: 'C:\Users\shubham singh\PycharmProjects\AI Virtual Assistant\venv\Scripts\python.exe "C:/Users/shubham singh/PycharmProjects/AI Virtual Assistant/scripts/sendmail.py"'.

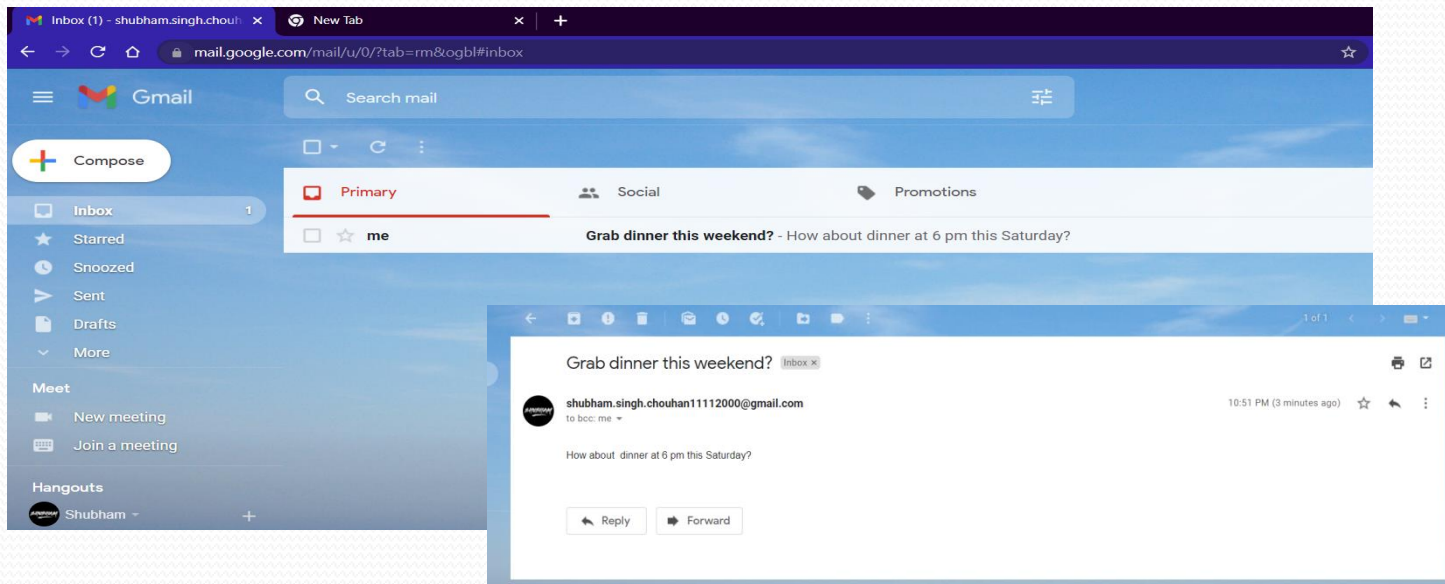
```
Run: sendmail
"C:\Users\shubham singh\PycharmProjects\AI Virtual Assistant\venv\Scripts\python.exe" "C:/Users/shubham singh/PycharmProjects/AI Virtual Assistant/scripts/sendmail.py"
send successfully...

Process finished with exit code 0
```

Before:-



After:-



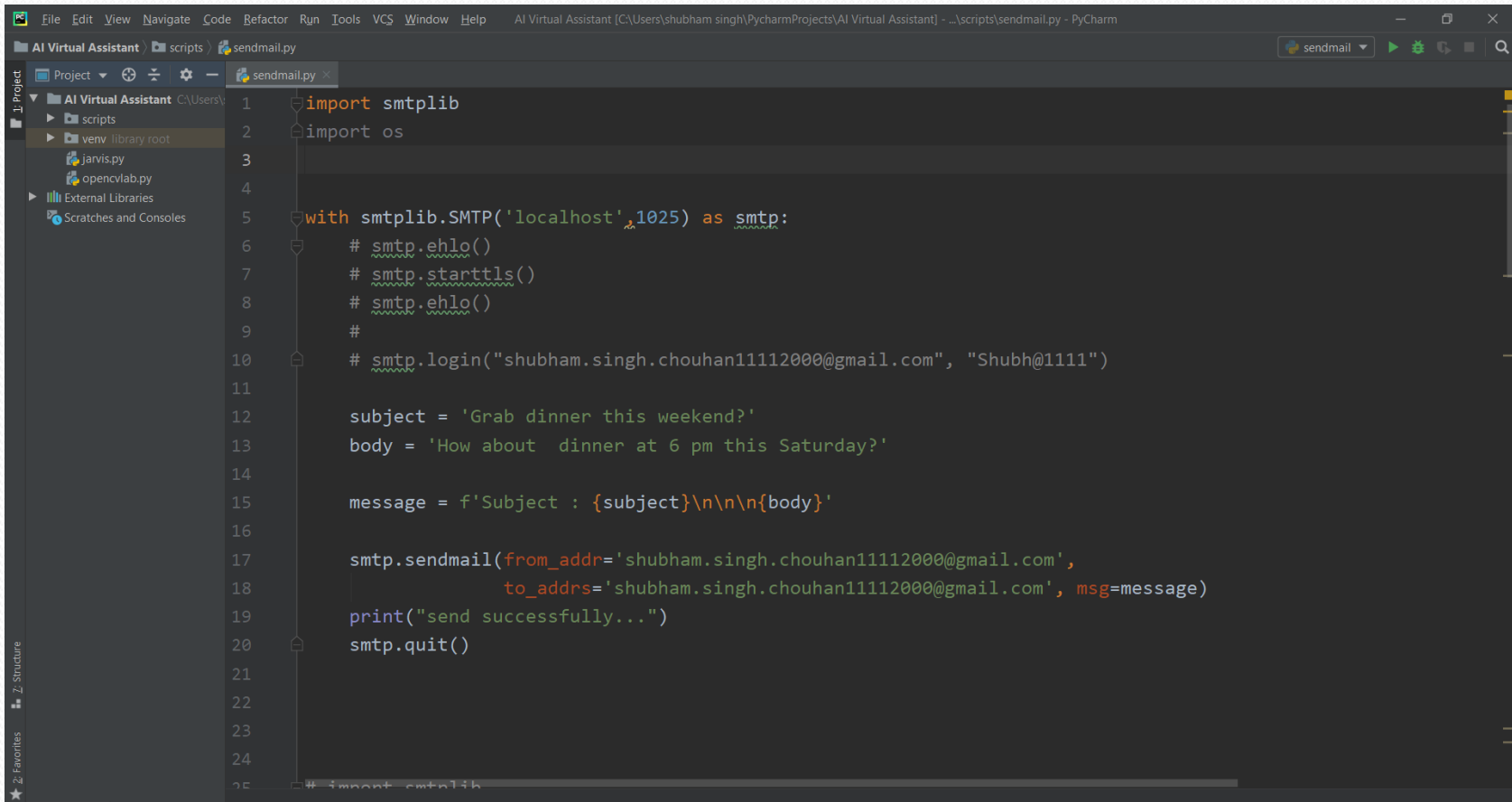
How to get message in our terminal if you don't want to send yourself a bunch of messages :-

**In Shell -**

**Python -m smtpd -c DebuggingServer -n localhost:1025**

```
Command Prompt - python -m smtpd -c DebuggingServer -n localhost:1025
Microsoft Windows [Version 10.0.19043.1165]
(c) Microsoft Corporation. All rights reserved.

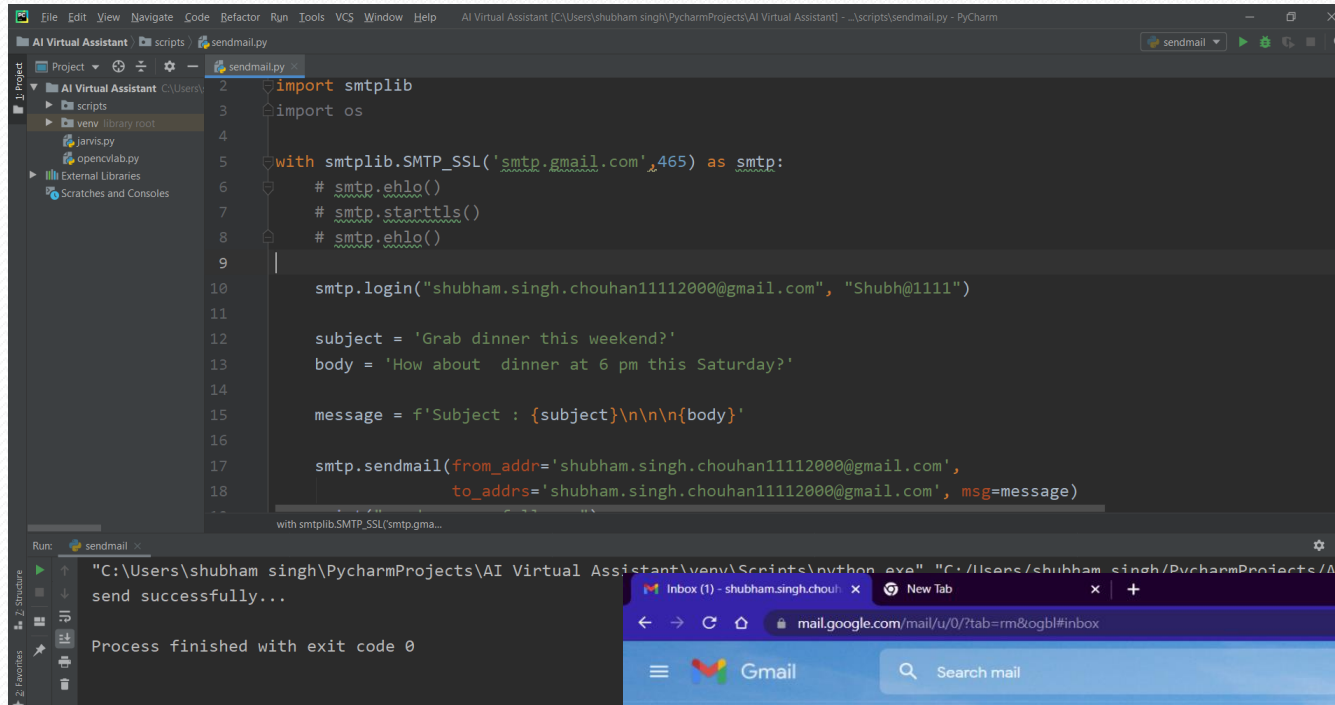
C:\Users\shubham singh>python -m smtpd -c DebuggingServer -n localhost:1025
----- MESSAGE FOLLOWS -----
b'Subject : Grab dinner this weekend?'
b'X-Peer: ::1'
b''
b''
b'How about dinner at 6 pm this Saturday?'
----- END MESSAGE -----
```



The image shows a PyCharm IDE window with a Python script named `sendmail.py` open. The script is designed to send an email using the `smtplib` module. The code includes imports for `smtplib` and `os`, followed by an SMTP connection to `localhost` on port `1025`. It then performs a login with a specific email address and password. The email content is defined with a subject and body, and the `sendmail` method is used to send it. Finally, the script prints a success message and quits the SMTP session.

```
1 import smtp
2 import os
3
4
5 with smtp.SMTP('localhost', 1025) as smtp:
6     # smtp.ehlo()
7     # smtp.starttls()
8     # smtp.ehlo()
9     #
10    # smtp.login("shubham.singh.chouhan11112000@gmail.com", "Shubh@1111")
11
12    subject = 'Grab dinner this weekend?'
13    body = 'How about dinner at 6 pm this Saturday?'
14
15    message = f'Subject : {subject}\n\n{body}'
16
17    smtp.sendmail(from_addr='shubham.singh.chouhan11112000@gmail.com',
18                  to_addrs='shubham.singh.chouhan11112000@gmail.com', msg=message)
19    print("send successfully..")
20    smtp.quit()
21
22
23
24
25 # import smtp
```

# I will make it bit simple using SMTP\_SSL



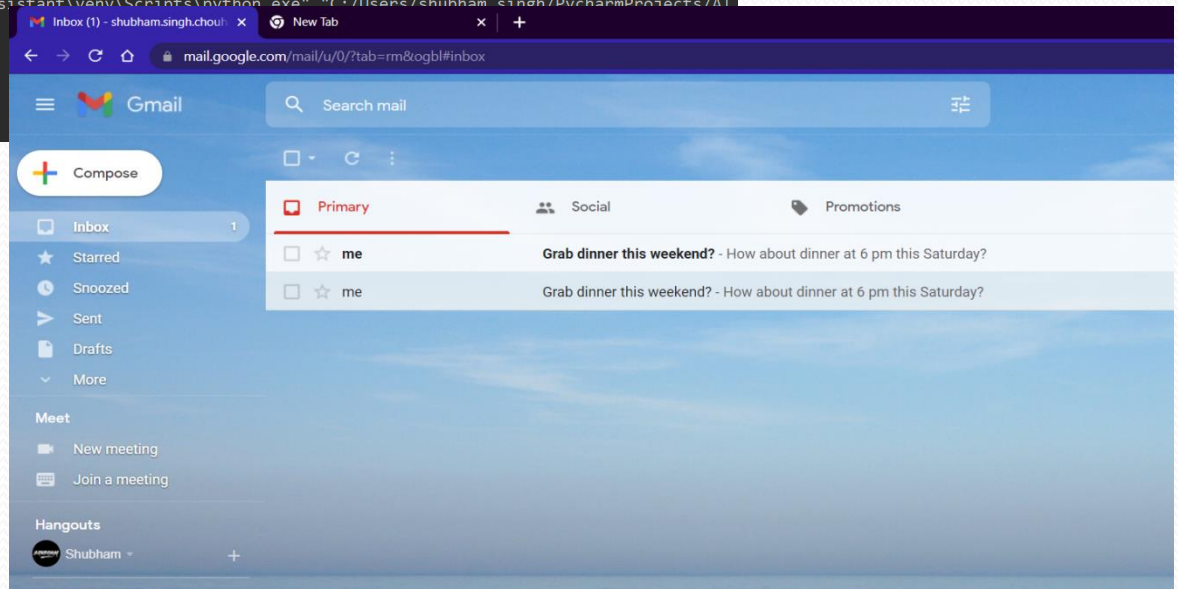
```
File Edit View Navigate Code Refactor Run Tools VCS Window Help AI Virtual Assistant [C:\Users\shubham singh\PycharmProjects\AI Virtual Assistant] - ...scripts\sendmail.py - PyCharm
AI Virtual Assistant C:\Users\shubham singh\PycharmProjects\AI Virtual Assistant - ...scripts\sendmail.py
Project C:\Users\shubham singh\PycharmProjects\AI Virtual Assistant
  AI Virtual Assistant
  scripts
  venv library root
  jarvis.py
  openclab.py
  External Libraries
  Scratches and Consoles
scripts\sendmail.py
1 import smtplib
2 import os
3
4 with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:
5     # smtp.ehlo()
6     # smtp.starttls()
7     # smtp.ehlo()
8
9     smtp.login("shubham.singh.chouhan1112000@gmail.com", "Shubh@1111")
10
11     subject = 'Grab dinner this weekend?'
12     body = 'How about dinner at 6 pm this Saturday?'
13
14     message = f'Subject : {subject}\n\n{body}'
15
16     smtp.sendmail(from_addr='shubham.singh.chouhan1112000@gmail.com',
17                  to_addrs='shubham.singh.chouhan1112000@gmail.com', msg=message)
18
19 with smtplib.SMTP_SSL('smtp.gma...
```

Run: sendmail x

"C:\Users\shubham singh\PycharmProjects\AI Virtual Assistant\venv\Scripts\python.exe" "C:\Users\shubham singh\PycharmProjects\AI Virtual Assistant\scripts\sendmail.py"

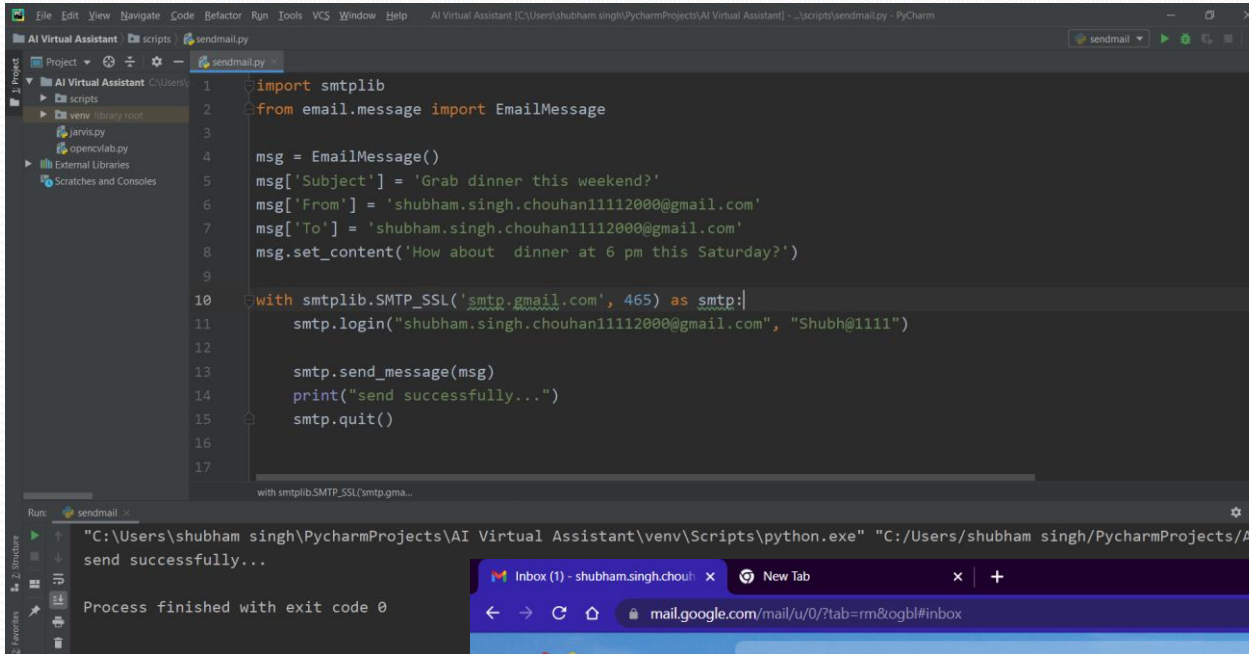
send successfully...

Process finished with exit code 0





# Email message library

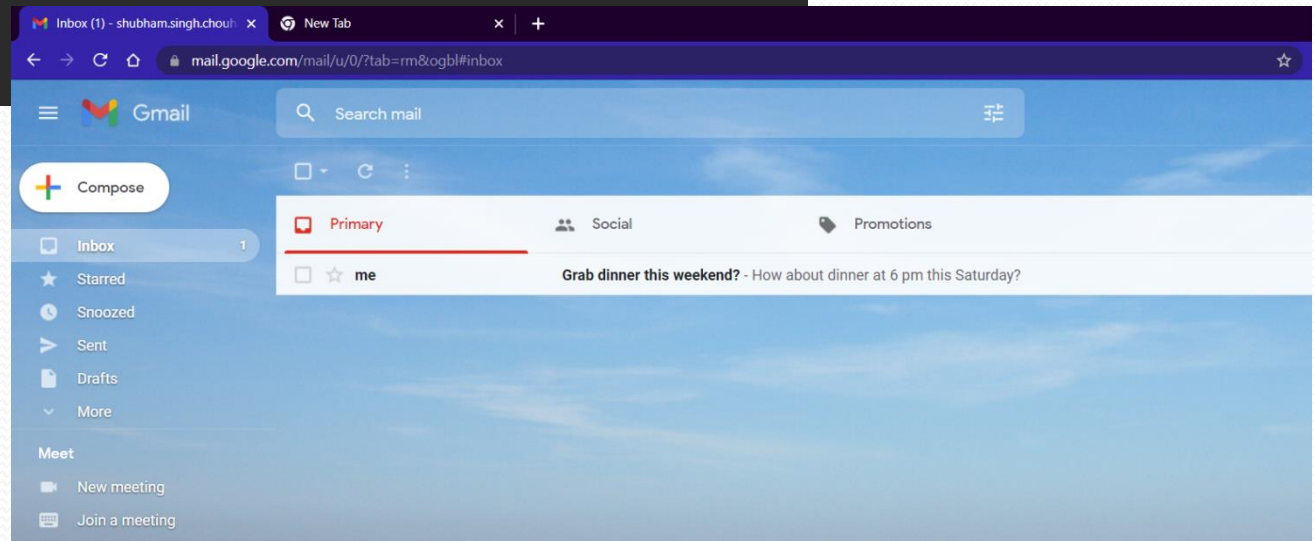


```
1 import smtplib
2 from email.message import EmailMessage
3
4 msg = EmailMessage()
5 msg['Subject'] = 'Grab dinner this weekend?'
6 msg['From'] = 'shubham.singh.chouhan1112000@gmail.com'
7 msg['To'] = 'shubham.singh.chouhan1112000@gmail.com'
8 msg.set_content('How about dinner at 6 pm this Saturday?')
9
10 with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:
11     smtp.login("shubham.singh.chouhan1112000@gmail.com", "Shubh@1111")
12
13     smtp.send_message(msg)
14     print("send successfully...")
15     smtp.quit()
16
17
```

Run: sendmail

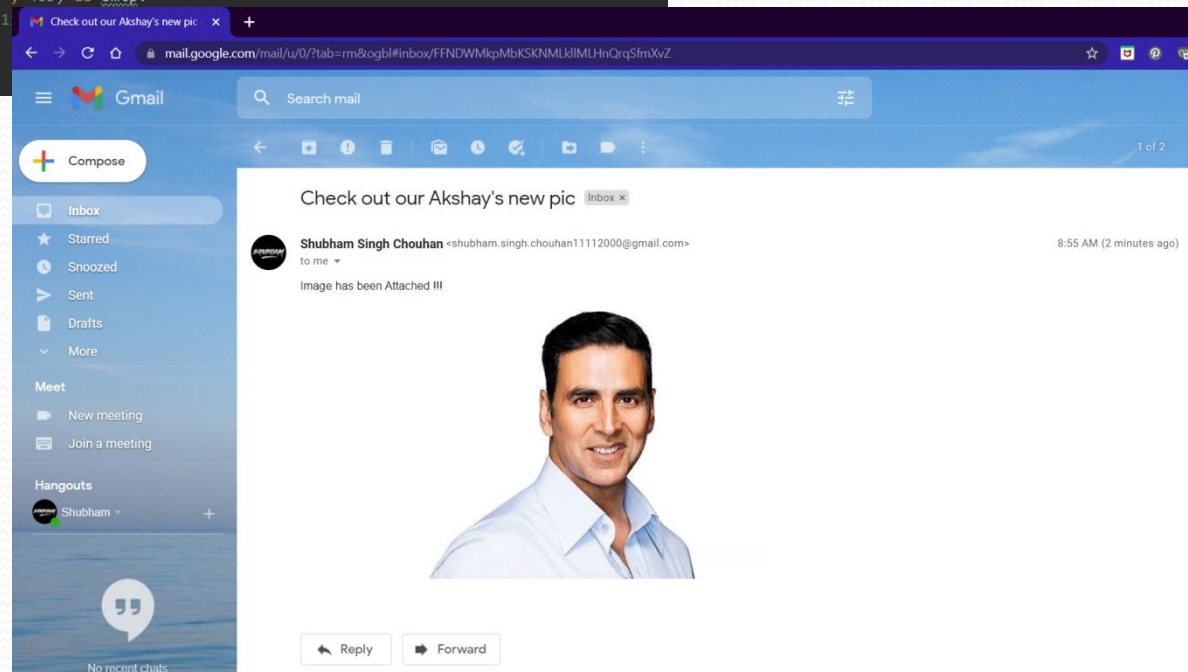
"C:\Users\shubham singh\PycharmProjects\AI Virtual Assistant\venv\Scripts\python.exe" "C:/Users/shubham singh/PycharmProjects/AI send successfully..."

Process finished with exit code 0



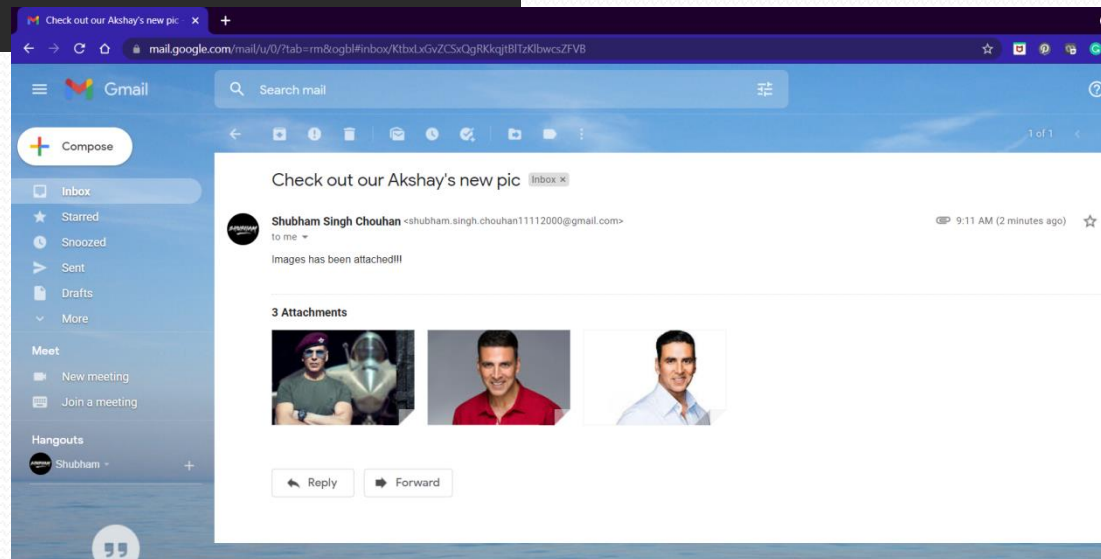
## 2. Attach Image's

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help AI Virtual Assistant [C:\Users\shubham.singh\PycharmProjects\AI Virtual Assistant] - _\scripts\sendmail.py - PyCharm
Project scripts sendmail.py
AI Virtual Assistant
External Libraries
Scratches and Consoles
1 import smtplib
2 import imghdr
3 from email.message import EmailMessage
4
5 msg = EmailMessage()
6 msg['Subject'] = "Check out our Akshay's new pic"
7 msg['From'] = 'shubham.singh.chouhan11112000@gmail.com'
8 msg['To'] = 'shubham.singh.chouhan11112000@gmail.com'
9 msg.set_content('Image has been Attached !!!')
10 with open('akshay.jpg', 'rb') as m:
11     file_data = m.read()
12     file_type = imghdr.what(m.name)
13     file_name = m.name
14
15 msg.add_attachment(file_data, maintype='image', subtype=file_type, file_name=file_name)
16
17
18 with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:
19     smtp.login('shubham.singh.chouhan11112000@gmail.com', 'your_password')
20     smtp.send_message(msg)
21     print("send successfully...")
22
```



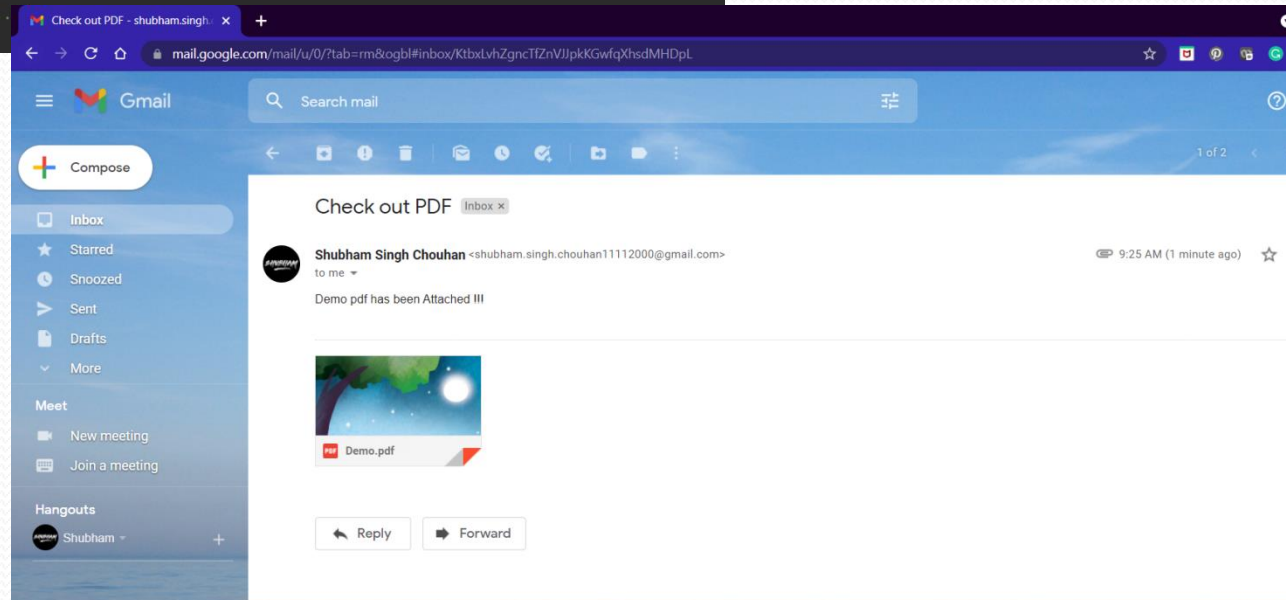
# Attach multiple Image's

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help AI Virtual Assistant [C:\Users\shubham.singh\PycharmProjects\AI Virtual Assistant - \scripts\sendmail.py - PyCharm
AI Virtual Assistant scripts sendmail.py
Project External Libraries External Libraries Scratches and Consoles
1 import smtplib
2 import imghdr
3 from email.message import EmailMessage
4
5 msg = EmailMessage()
6 msg['Subject'] = "Check out our Akshay's new pic"
7 msg['From'] = 'shubham.singh.chouhan11112000@gmail.com'
8 msg['To'] = 'shubham.singh.chouhan11112000@gmail.com'
9 msg.set_content('Image has been Attached !!!')
10
11 files = ['akshay.jpg', 'akshay2.jpg', 'akshay3.jpeg']
12 for file in files:
13     with open(file, 'rb') as m:
14         file_data = m.read()
15         file_type = imghdr.what(m.name)
16         file_name = m.name
17
18 msg.add_attachment(file_data, maintype='image', subtype=file_type, file_name=file_name)
19
20 with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:
21     smtp.login("shubham.singh.chouhan11112000@gmail.com", "Shubh@1111")
22     smtp.send_message(msg)
23     print("send successfully...")
24
```



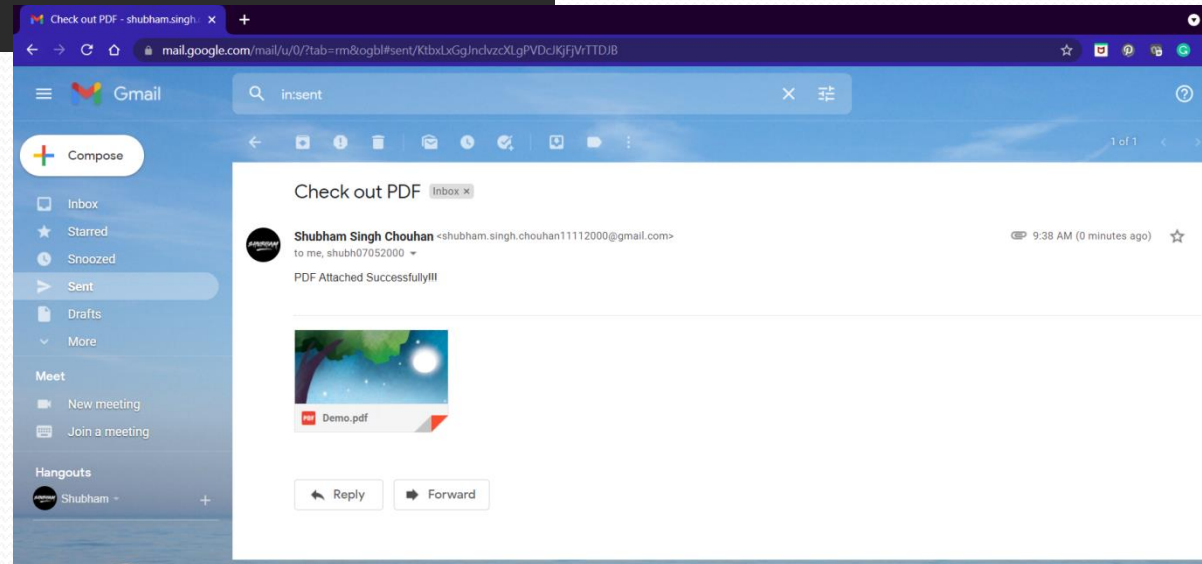
### 3. Sending PDF in mail

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help AI Virtual Assistant [C:\Users\shubham.singh\PycharmProjects\AI Virtual Assistant] - ..\scripts\sendmail.py - PyCharm
Project scripts sendmail.py
Project AI Virtual Assistant C:\Users\shubham.singh\PycharmProjects\AI Virtual Assistant
External Libraries
Scratches and Consoles
1 import smtplib
2 from email.message import EmailMessage
3
4 msg = EmailMessage()
5 msg['Subject'] = "Check out PDF"
6 msg['From'] = 'shubham.singh.chouhan11112000@gmail.com'
7 msg['To'] = 'shubham.singh.chouhan11112000@gmail.com'
8 msg.set_content('Demo pdf has been Attached !!!')
9
10 files = ['Demo.pdf']
11 for file in files:
12     with open(file, 'rb') as m:
13         file_data = m.read()
14         file_name = m.name
15
16 msg.add_attachment(file_data, maintype='image', subtype='octet-stream', file_name=file_name)
17
18 with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:
19     smtp.login("shubham.singh.chouhan11112000@gmail.com", "Shubh@1111")
20     smtp.send_message(msg)
21     print("send successfully...")
22
```



# Sending same mail to multiple Email-Id's :-

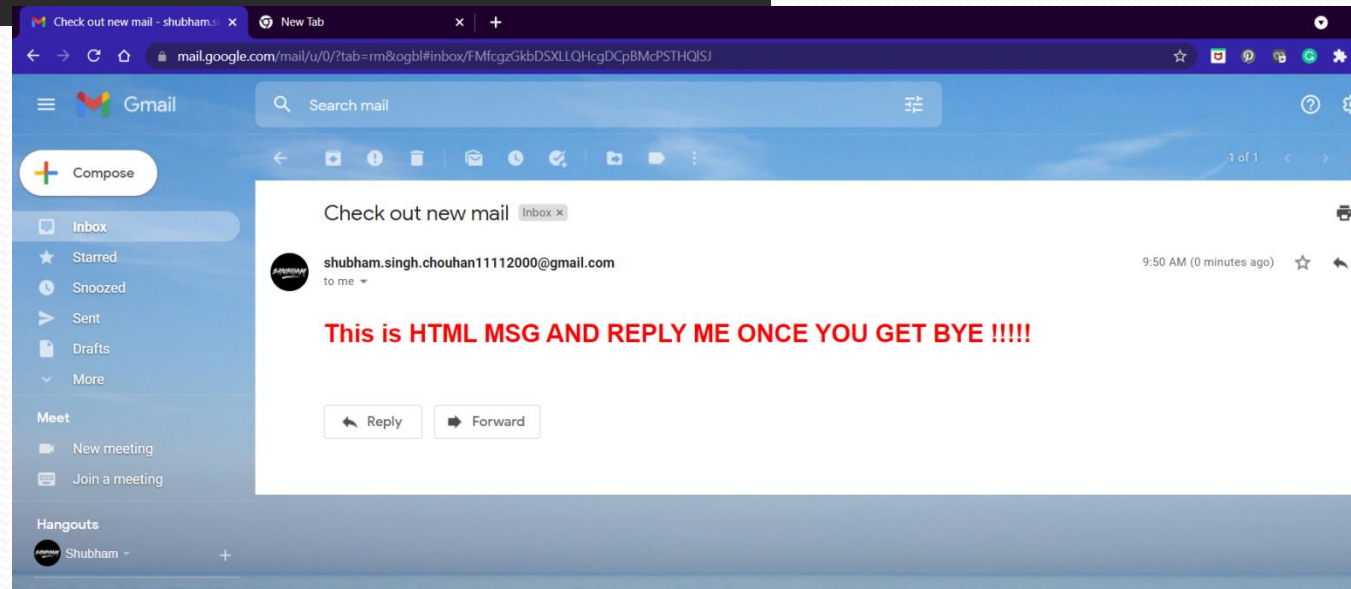
```
1 import smtplib
2 from email.message import EmailMessage
3
4 contacts = ['shubham.singh.chouhan11112000@gmail.com', 'shubh07052000@gmail.com']
5
6 msg = EmailMessage()
7 msg['Subject'] = "Check out PDF"
8 msg['From'] = 'shubham.singh.chouhan11112000@gmail.com'
9 msg['To'] = ', '.join(contacts)
10 msg.set_content('Demo pdf has been Attached !!!')
11
12 files = ['Demo.pdf']
13 for file in files:
14     with open(file, 'rb') as m:
15         file_data = m.read()
16         file_name = m.name
17
18 msg.add_attachment(file_data, maintype='image', subtype='octet-stream', file_name=file_name)
19
20 with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:
21     smtp.login("shubham.singh.chouhan11112000@gmail.com", "Shubh@1111")
22     smtp.send_message(msg)
23     print("send successfully...")
24
```





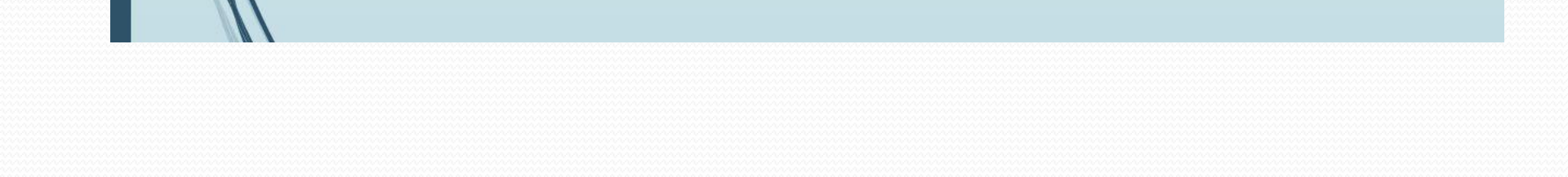
## 4. Sending HTML message

```
1 import smtplib
2 from email.message import EmailMessage
3
4 msg = EmailMessage()
5 msg['Subject'] = "Check out new mail"
6 msg['From'] = 'shubham.singh.chouhan11112000@gmail.com'
7 msg['To'] = 'shubham.singh.chouhan11112000@gmail.com'
8 msg.set_content('Plain text')
9
10 msg.add_alternative("""\
11 <!DOCTYPE html>
12 <html>
13   <body>
14     <h1 style="color:red;">This is HTML MSG AND REPLY ME ONCE YOU GET BYE !!!!!</h1>
15   </body>
16 </html>
17 """, subtype="html")
18
19 with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:
20     smtp.login("shubham.singh.chouhan11112000@gmail.com", "Shubh@1111")
21     smtp.send_message(msg)
22     print("send successfully...")
23
```





## ADVANTAGES OF E-MAIL

- Emails are easy to use. You can organize your daily correspondence, send and receive electronic messages and save them on computers.
  - Emails are fast. They are delivered at once around the world. No other form of written communication is as fast as an email.
  - Emails do not use paper.
  - Emails can also have pictures in them. You can send birthday cards or newsletters as emails.
  - Products can be advertised with emails
- 

## Project & Reference Url's

Project url :-

- <https://github.com/shubhamsc11/SMTP-Server>

Reference url :-

- [https://www.oasis-open.org/khelp/kmlm/user\\_help/html/how\\_email\\_works.html](https://www.oasis-open.org/khelp/kmlm/user_help/html/how_email_works.html)
- <https://realpython.com/python-send-email/>
- [https://www.youtube.com/watch?v=CBuu17j\\_WnA&t=961s](https://www.youtube.com/watch?v=CBuu17j_WnA&t=961s)
- <https://pypi.org/>





Thank You