Day - 32

**Data Types &**

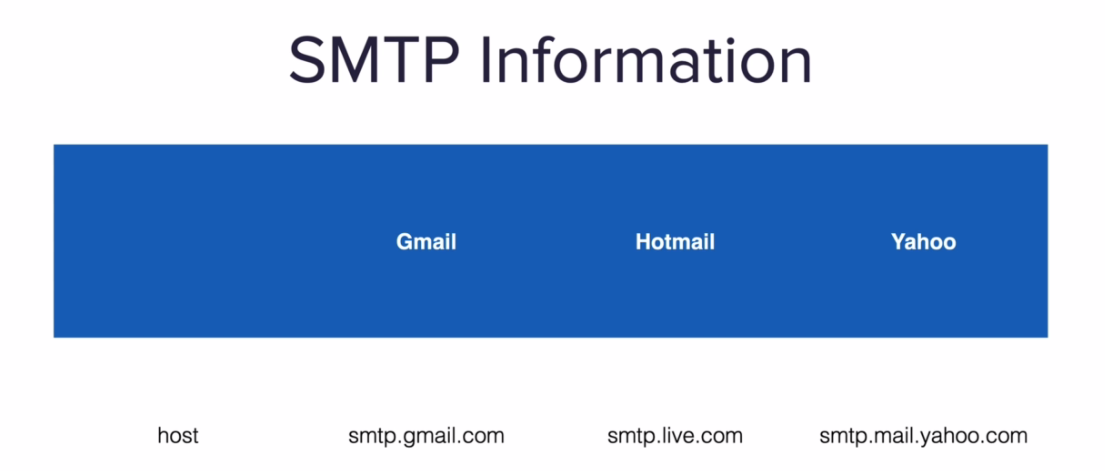
**String manipulation**

Email with SMTP, datetime

**32.1 How Email works?**

1. Email first goto Senders mail server
2. Then sent to recipient mail server (store it)
3. Recipient get his mail from his mail server when he logged on his PC.

* SMTP: Whole process is controlled by SMTP, Simple Mail Transfer Protocol. This contains all of the rules that determine how an email is received by mail servers passed onto the next mail server and how email can be sent around the internet.
* A good analogy for SMTP is if you imagine these mail servers as a post office and Timmy's computer being the mailbox. Then SMTP is basically the postman who knows how to handle the email and take it to various post offices and eventually put it into Timmy's computer.
* SMTP lib: So in ***Python***, there's a module called ***SMTP*** lib which allows us to use ***SMTP*** to send our email to any address on the internet.



**32. 2 Email provider's SMTP server**

* Email provider's SMTP server: Once we create this object

**import** smtplib

connection = smtplib**.SMTP**("smtp.gmail.com")

* One of the things that we should specify is the location of our email provider's SMTP server. Now for Gmail, it simply ***smtp.gmail.com***, but it's different for every email provider. So that means if your email and in @gmail.com, then this would be how you would connect to your email server.
* But if you have a *different email provider*, for example, if you're with Hotmail, it's ***smtp.live.com***. And if you're with Yahoo, it's ***smtp.mail.yahoo.com***. And if you're with a completely different email provider then simply just Google your email provider and the SMTP information.

**32.3 TLS - Transport Layer Security**

Transport Layer Security (TLS) encrypts data sent over the Internet to ensure that eavesdroppers and hackers are unable to see what you transmit which is particularly useful for private and sensitive information such as passwords, credit card numbers, and personal correspondence.

connection**.starttls**()

**32.3 Sending a message to a person from python**

#*------------- use smtplib to send email straight from python --------------*

**import** smtplib

my\_email = "sender@gmail.com"

pasword = "sender\_pw"

connection = smtplib**.SMTP**("smtp.gmail.com")

#*TLS makes connection secure*

connection**.starttls**()

connection**.login**(user = my\_email, password = pasword)

connection**.sendmail**(from\_addr = my\_email, to\_addrs = "reciver@gmail.com", msg = "Subject: Hello Reciver. \n\n Welcome to my Birthday. This is your buddy Sender")

connection**.close**()

#*no "close()" needed if use "with"*

#*format for no spam: msg = "Subject: Hello\n\nThis is body".*

#*Also write normally if you composed in real email.*

#*Google security Lower*

#*Photo, 2-step verification turn off*

#*Turn on - Less secure apps*

#*Security method could be different in different provider:*

#*Example :In "yahoo" to allow an app to send email, generates an "app password"*

#*python smtp\_lib\_demo.py*

* Google security Lower:

Following will be found in Hit account picture on right, then "**Manage your Google account**", Under "**Security**"

# Photo, 2-step verification turn off

# Turn on - Less secure apps

**32.4 date time**

**import** datetime **as** dt

tiMe = dt**.**datetime**.now**()

**print**(tiMe)

**print**(tiMe**.**day)

**print**(tiMe**.**hour)

**print**(tiMe**.**minute)

**print**(tiMe**.**month)

**print**(tiMe**.**year)

#*python datetime\_demo.py*

* Never name a working ***.py*** file to its predefined module. It will automatically override its own module.
* Creating datetime object:

date\_of\_birth = dt**.datetime**(year = 1995, month= 11, day = 14, hour = 7)

**print**(date\_of\_birth)

* Exercise 32.1: Monday Motivational quote. The given quotes generates Unicode error.

**import** datetime **as** dt

**import** random

tiMe = dt**.**datetime**.now**()

**with** **open**("./poem.txt") **as** qut\_file:

    lines = qut\_file**.readlines**()

#*weekday() is an object not a variable like hour, year*

**print**(tiMe**.weekday**())

#*-------------  send message  --------------*

**import** smtplib

my\_mail = "my\_mail@gmail.com"

my\_pw = "my\_pw"

recipent = "recipent@gmail.com"

**if** tiMe**.weekday**() **==** 4:

**with** smtplib**.SMTP**("smtp.gmail.com") **as** mail\_sender:

        mail\_sender**.starttls**()

        mail\_sender**.login**(user= my\_mail, password= my\_pw)

        quote\_of\_the\_day = random**.choice**(lines)

        mail\_sender**.sendmail**(from\_addr=my\_mail, to\_addrs=recipent, msg=f"Subject: Friday Quotes.\n\n{quote\_of\_the\_day}" )

#*UnicodeEncodeError: 'ascii' codec can't encode character u'\u2019' in position 3: ordinal not in range(128)*

#*Fixed with response['source\_string'].encode("utf-8")*

#*python motivation\_date\_time.py*

Instructor Solution

**from** datetime **import** datetime

**import** smtplib

**import** random

**from** decouple **import** config

my\_email = **config**('EMAIL')

my\_password = **config**('PASSWORD')

to\_email = **config**("RECEIVER")

**def** **email\_sender**():

**with** **open**("quotes.txt") **as** file\_data:

        quotes = file\_data**.readlines**()

    today\_quote = random**.choice**(quotes)

**with** smtplib**.SMTP**('smtp.gmail.com') **as** server:

        server**.starttls**()

        server**.login**(user=my\_email, password=my\_password)

        server**.sendmail**(

            from\_addr=my\_email,

            to\_addrs=to\_email,

            msg=f"Subject:Today's Motivational Quote\n\n{today\_quote}"

        )

weekday = datetime**.now**()**.weekday**()

**if** weekday**==**0:

**email\_sender**()

**else**:

**print**("Today is not Monday.")

Practiced version

**import** random

**import** pandas

**import** datetime **as** DaTe

**import** smtplib

PLACEHOLDER = "[NAME]"

letter\_no = random**.randint**(1, 3)

letter\_file = f"./letter\_templates/letter\_{letter\_no}.txt"

**with** **open**(letter\_file) **as** to\_send:

    leTTer = to\_send**.read**()

data = pandas**.read\_csv**("birthdays\_2.csv")

today = DaTe**.**datetime**.now**()

moNth = today**.**month

dAy = today**.**day

#*print(type(moNth))*

#*print(moNth)*

#*print(type(dAy))*

#*print(dAy)*

my\_mAI = " my\_mAI @gmail.com"

my\_pw = " my\_pw "

#*Check if the row is empty*

rOw = data[(data**.**day **==** dAy) & (data**.**month **==** moNth)]

**if** rOw**.**empty:

**print**("Empty")

**else**:

    name = rOw**.**name**.item**()

    EmIl = rOw**.**email**.item**()

    newL = leTTer**.replace**(PLACEHOLDER, name)

**print**(newL)

**print**(name)

**print**(EmIl)

**with** smtplib**.SMTP**("smtp.gmail.com") **as** sender:

        sender**.starttls**()

        sender**.login**(user= my\_mAI, password=  my\_pw)

        sender**.sendmail**(from\_addr= my\_mAI, to\_addrs= EmIl, msg = f"Subject: Birthday Wish\n\n {newL} At the END")

#*python bdy\_wisher.py*

Instructors solution

#*To run and test the code you need to update 4 places:*

#*1. Change MY\_EMAIL/MY\_PASSWORD to your own details.*

#*2. Go to your email provider and make it allow less secure apps.*

#*3. Update the SMTP ADDRESS to match your email provider.*

#*4. Update birthdays.csv to contain today's month and day.*

#*See the solution video in the 100 Days of Python Course for explainations.*

**from** datetime **import** datetime

**import** pandas

**import** random

**import** smtplib

MY\_EMAIL = "YOUR EMAIL"

MY\_PASSWORD = "YOUR PASSWORD"

today = datetime**.now**()

today\_tuple = (today**.**month, today**.**day)

data = pandas**.read\_csv**("birthdays.csv")

birthdays\_dict = {(data\_row["month"], data\_row["day"]): data\_row **for** (index, data\_row) **in** data**.iterrows**()}

**if** today\_tuple **in** birthdays\_dict:

    birthday\_person = birthdays\_dict[today\_tuple]

    file\_path = f"letter\_templates/letter\_{random**.randint**(1,3)}.txt"

**with** **open**(file\_path) **as** letter\_file:

        contents = letter\_file**.read**()

        contents = contents**.replace**("[NAME]", birthday\_person["name"])

**with** smtplib**.SMTP**("YOUR EMAIL PROVIDER SMTP SERVER ADDRESS") **as** connection:

        connection**.starttls**()

        connection**.login**(MY\_EMAIL, MY\_PASSWORD)

        connection**.sendmail**(

            from\_addr=MY\_EMAIL,

            to\_addrs=birthday\_person["email"],

            msg=f"Subject:Happy Birthday!\n\n{contents}"

        )

#*python instructor\_soln.py*

HardMOde

#*#################### Extra Hard Starting Project ######################*

**from** datetime **import** datetime

**import** smtplib

**import** pandas **as** pd

**import** random

**from** decouple **import** config

my\_email = **config**('EMAIL')

my\_password = **config**('PASSWORD')

to\_email = **config**("RECEIVER")

today\_date = datetime**.now**()**.**day

today\_month = datetime**.now**()**.**month

today\_tuple = (today\_month,today\_date)

df = pd**.read\_csv**("birthdays.csv")

birthday\_dict = {(data\_row["month"], data\_row["day"]): data\_row **for** (index, data\_row) **in** df**.iterrows**()}

**if** today\_tuple **in** birthday\_dict:

**with** **open**(f"letter\_templates/letter\_{random**.randint**(1,3)}.txt") **as** file\_data:

        contents = file\_data**.read**()

        new\_contents = contents**.replace**("[NAME]", birthday\_dict[today\_tuple]["name"])

**with** smtplib**.SMTP**('smtp.gmail.com') **as** server:

        server**.starttls**()

        server**.login**(user=my\_email, password=my\_password)

        server**.sendmail**(

            from\_addr=my\_email,

            to\_addrs=to\_email,

            msg=f"Subject:Happy Birthday\n\n{new\_contents}"

        )

**32.5 Run my code in the cloud**

[***python anywhere***](https://www.pythonanywhere.com)

Goto *python anywhere* and create *account*. *Upload* your *files*. Run in the *bash*. Then set he *task* at a *specific* *time* to run the code, with *command*. If *gmail* *blocks* the mail is will shown in the *bash* *copy* the bash link and then *unblock* in the *gmail*.