



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

**MALAYSIA-JAPAN INTERNATIONAL INSTITUTE OF  
TECHNOLOGY (MJIIT)**

**UNIVERSITI TEKNOLOGI MALAYSIA**

**SMJE 4383 – ADVANCE PROGRAMMING**

**REPORT ASSIGNMENT 1**

<b>NAMES</b>	MUHAMMAD AMIRUL AFIQ BIN MOHD SHUKRI (A19MJ0145) SHIM CHUNG SIONG (A19MJ0024)
<b>LECTURER</b>	DR ZOOL HILMI BIN ISMAIL

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# Chapter 1: Introduction

## 1.1. Background of study

Copying data from a CSV file refers to the process of extracting data from the file and duplicating it in a different location, either within the same file or to a different file. This can be done manually by opening the CSV file in a text editor or spreadsheet program and copying and pasting the data to another location. Alternatively, this can be automated using programming languages such as Python, which provides libraries for reading and writing CSV files. The copied data can then be manipulated, modified, or used for other purposes as needed. most common email use is Gmail. Gmail is a free web-based email service that provides users for messages and the ability to search for specific messages [1].

An email notification is an automated message sent to inform a recipient about a specific event or update. It is often used as a means of communication to keep people informed about updates, changes, or important information. Email notifications can be triggered by various events, such as the completion of a task, a change in a system or process, or an update to a website or application. They can be sent to individual recipients or to a group of people and can include relevant information and links to additional resources.

By combining both process of copying the CSV file data set and email notification. This process will make it easier for the user to make sure that the process of copying the CSV file is finished.

## **1.2. Project Framework and Interface**

In the project development, we have used several software frameworks and interfaces to complete our task. First, we use ubuntu 20.04.1 LTS. Ubuntu is a free and open-source operating system based on the Debian Linux distribution. It is widely used as a desktop and server operating system and is known for its user-friendly interface and ease of use. Ubuntu is designed with security and stability in mind and is supported by a large community of developers and users. It is also known for its open-source philosophy and commitment to open-source software [2].

Secondly, we have used Python 3 programming language to develop the code for copied CSV data file and email notification. Python is a high-level, interpreted, and general-purpose programming language. We have chosen Python as the project's coding language because it has rich library of pre-written code for common tasks and dynamic typing and automatic memory management [3].

Next, we use CSVpad software. CSVpad is a handy free CSV (Comma-separated values) editor. Its support's unicode and it is a portable application. CSVpad can manipulate columns and rows. Export CSV files into html / xml / OpenDocument Spreadsheet (.ods) and Microsoft Excel 8.0 (.xls) files. In this assignment, CSVpad is used to save file in CSV file format as “.CSV”. CSV (Comma Separated Values) file is a plain text file that contains tabular data in which each row represents a record, and each field (column) is separated by a comma. It is a widely used format for storing and exchanging data in spreadsheet programs, databases, and data analysis tools [4].

## **1.3. Objective**

1. To copy a CSV file data set to the new CSV file.
2. To notify the user through email after the copied process is finished.

## Chapter 2: Methodology

### 2.1 Copy data from another CSV file.

The data in the CSV file will be copied into a new CSV file data. The code for the copied CSV file is stated below:

```
input_file = open ('food.csv','r')           #open csv file file
output_file = open ('food_file_copy.csv','w') # create the same csv file
csv = input_file.read()                      #read content of source file
output_file.write(csv)                       #content of csv file are being copied to the
new csv file
input_file.close()
output_file.close()
```

The CSV file (food.csv) is the original csv file that will be copied. By using command “input\_file=open '(food.csv,r)’, the CSV file will proceed with the read operation. Next, to create a new CSV file, command “output\_file = open ('food\_file\_copy.csv','w)’ is being used. This command will proceed with a write operation where it will create a new CSV file with a title of ‘food\_file\_copy.csv’.

For command “csv = input\_file.read()”, it will read the data inside the original CSV file (food.csv). And it will copy the data into the new CSV file (food\_file\_copy.csv) by using the command “output\_file.write(csv)”. After that both CSV file will be close using command “input\_file.close()” and “output\_file.close()”.

## 2.2 Email notification

Email notification will be done after the completion of the CSV filed data was being copied. The code for the information for the email notification is stated below:

```
subject = 'CSV copy by Python'

body = 'Copy completed'

sender_email = 'muhammadamirulafiq@graduate.utm.my'

receiver_email = 'amiirulafiqqq@gmail.com'

password = input(str("Enter password:")) #to make it automatically. Put the email password
directly in here
```

The first and second command “subject = 'CSV copy by Python'” and “body = 'Copy completed'” is used for the comment for the subject and the body on the email. Sender email will be used where it will act as the one who will send the email notification to the receiver email. The command used is “sender\_email = 'muhammadamirulafiq@graduate.utm.my'”. for the receiver email, it will receive the email notification when the process of copied CSV file is completed. The command used is “receiver\_email = 'amiirulafiqqq@gmail.com'”. for the command “password = input(str("Enter password:"))”, it will ask the password of the sender email to proceed with the email notification. Figure below shows the terminal ask for the password.

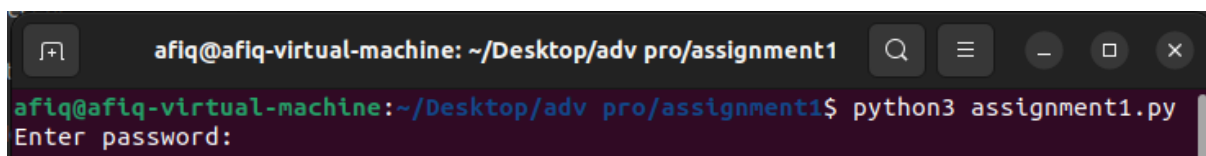


Figure 2.1: terminal asking for the sender password email.

To make the code run automatically, it can be done by putting the password on the password command directly. For example “password = 'your\_password'”. By using this command, the email notification process will proceed without asking to type the password of the sender email.

## 2.3 smtpplib library

For the email notification, smtpplib library will be used. It is a built-in module in python3 environment. smtpplib is a Python library that implements the Simple Mail Transfer Protocol (SMTP), which is used for sending emails. It allows you to send emails from a Python script or program, making it a useful tool for automating email tasks or integrating email functionality into your applications. smtpplib provides a simple, programmatic interface for sending emails, including setting up an SMTP server connection, composing messages, and sending them to recipients [5]. The code for the smtpplib is stated below:

```
import smtpplib

server = smtpplib.SMTP('smtp.gmail.com', 587)

server.starttls()

server.login(sender_email, password)

server.sendmail(sender_email, receiver_email, message)

print("your file copy has finished.")
```

After the email notification has been send to the receiver email. ‘your file copy has finished’ will pop-up in the terminal.

## 2.4 Full code

```
import smtplib

input_file = open ('food.csv','r')
output_file = open ('food_file_copy.csv','w')
csv = input_file.read()
output_file.write(csv)
input_file.close()
output_file.close()

subject = 'CSV copy by Python'
body = 'Copy completed'
sender_email = 'muhammadamirulafiq@graduate.utm.my'
receiver_email = 'aafiq2347@gmail.com'
password = input(str("Enter password:"))

message = 'subject: ' + subject+"\n\n" + body
server = smtplib.SMTP('smtp.gmail.com', 587)
server.starttls()
server.login(sender_email, password)
server.sendmail(sender_email, receiver_email, message)

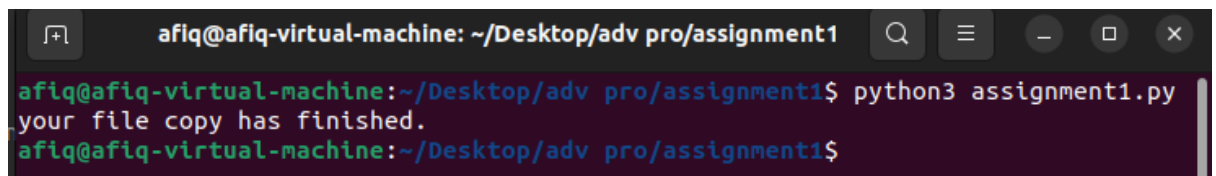
print("your file copy has finished.")
```



## Chapter 3: Result and discussion

### Result

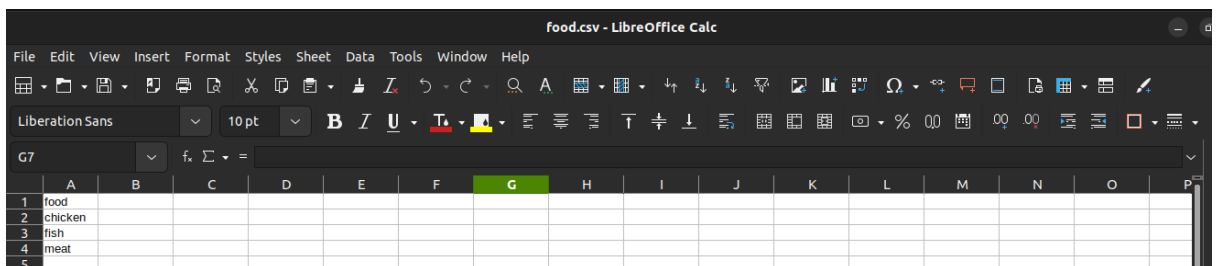
After the email notification process has been done, the terminal will pop-out a text stated that “your file copy has finished”. This means that the copied CSV file data has finished, and it will send the notification to the receiver email. Figure 3.1 shows the terminal pop-up text after the process was done.



```
afliq@afliq-virtual-machine: ~/Desktop/adv pro/assignment1
afliq@afliq-virtual-machine:~/Desktop/adv pro/assignment1$ python3 assignment1.py
your file copy has finished.
afliq@afliq-virtual-machine:~/Desktop/adv pro/assignment1$
```

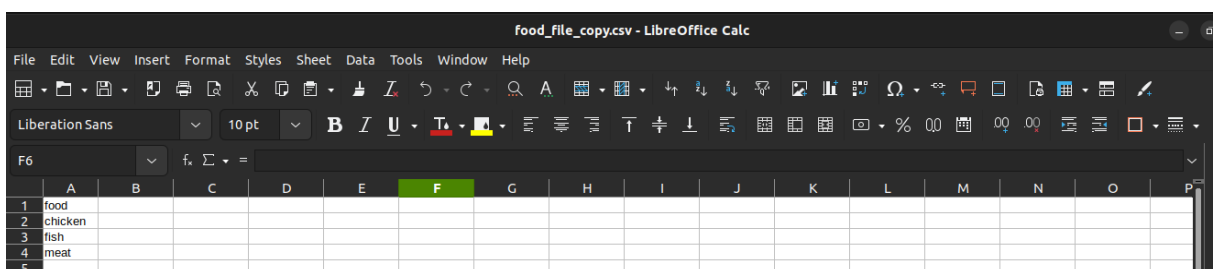
Figure 3.1: pop-up message after the email notification finish.

The data from the original CSV file has been successfully being copied to the new CSV file. Figure 3.2 and Figure 3.3 shows the original CSV file data (food.csv) and the new copied CSV file data (food\_file\_copy.csv).



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	food															
2	chicken															
3	fish															
4	meat															
5																

Figure 3.2: original CSV file (food.csv)



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	food															
2	chicken															
3	fish															
4	meat															
5																

Figure 3.3: copied CSV file data (food\_file\_copy.csv)

The receiver email will receive the email notification stated that the CSV file has been copied. Figure 3.2 shows the notification email.



Figure 3.2: Email notification

## **Discussion**

We have successfully copied a CSV file data and sending an email notification was done. As the result shown above, the CSV file data has been copied with the same data set. And the email notification has been sent to the receiver email. A message of the “copy completed” has been sent to notify the user that the new copied CSV file process has been done.

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