Assignment 1

Program 1

Problem Definition:

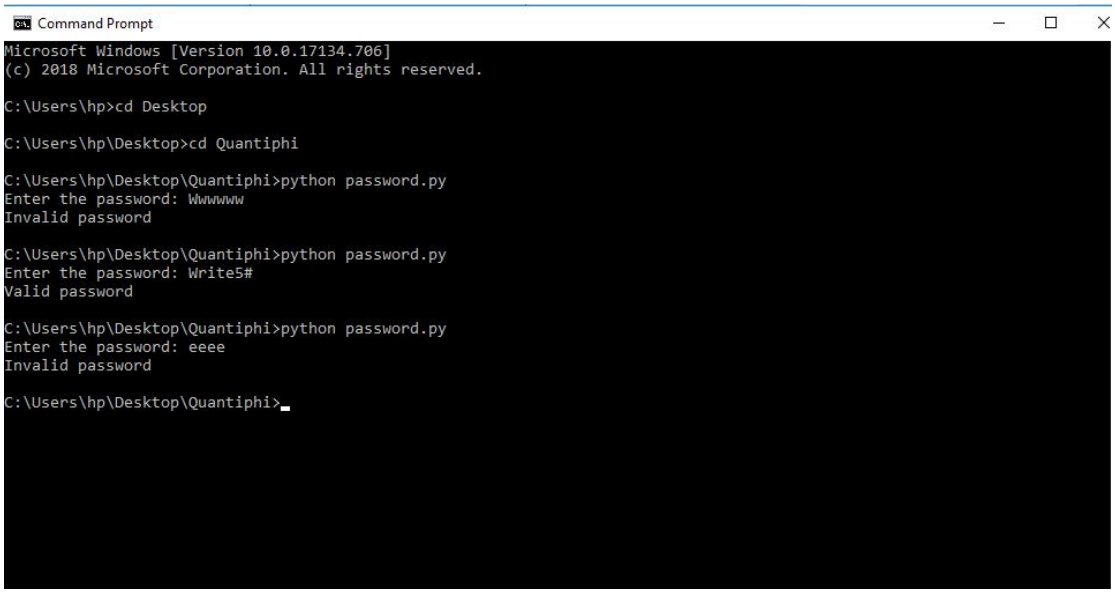
Write a Python program to check the validity of a password chosen by a user. To be considered valid, a password must
a) contain at least 1 letter between [A-Z],
b) contain at least 1 letter between [a-z],
c) contain at least 1 number between [0-9],
d) contain at least 1 special character from [$#@],
e) have a minimum length of 6 characters, and f) have a maximum length of 12 characters.
Your program will consist of two user-defined functions: validate() and main(). The validate() function implements the validation procedure described above. The parameter (or input) to the function is a string s. If s fits the above criteria, print valid Otherwise, print not valid. Also implement logging.

Code: password.py

```
import re
import logging

logging.basicConfig(filename='pass.log',format='%(asctime)s %(me
ssage)s',level=logging.DEBUG)     #storing the log records in a log file

def validate(s):
    flag=0
    if (len(s)<6 or len(s)>12):
#checking the password length
        logging.error("Password length should be between 6 to 12")
        flag=1
    if(re.search('[A-Z]',s) is None):
#checking for uppercase letter
        logging.error("Password should have atleast one uppercase
letter")
        flag=1
    if(re.search('[a-z]',s) is None):
#checking for lowercase letter
        logging.error("Password should have atleast one lowercase
letter")
        flag=1
    if(re.search('[0-9]',s) is None):
        logging.error("Password should have atleast one number")
```

```
        flag=1
    if(re.search('[@$#]',s) is None):
#checking for special character
        logging.error("Password should have atleast one special
character from $@#")
        flag=1
    if(flag==0):
#checking if all the required conditions are satisfied
        print("Valid password")
    else:
        print("Invalid password")

def main():
    s=input("Enter the password: ")
#accepting the input
    logging.info('Reading the password')
    validate(s)

if __name__ == "__main__":
    main()
```

Screenshot of output:



Log File: pass.log

```
2019-05-09 22:06:18,837 Reading the password
2019-05-09 22:06:18,852 Password should have atleast one number
2019-05-09 22:06:18,852 Password should have atleast one special
character from $@#
2019-05-09 22:07:03,308 Reading the password
```

2019-05-09 22:07:11,124 Reading the password
2019-05-09 22:07:11,124 Password length should be between 6 to 12
2019-05-09 22:07:11,124 Password should have atleast one uppercase letter
2019-05-09 22:07:11,124 Password should have atleast one number
2019-05-09 22:07:11,124 Password should have atleast one special character from $@#

Program 2

Problem Definition:

Write a program to find frequency of each distinct word in a given text file ‘input.txt’. Your Output should be stored in a different file named‘output.txt’ in alphanumeric order. Each line should contain the word and its frequency separated by a comma. (if numeric values are present in file they should be at the start of output file). You can take any text file as your input file.

Code: frequency.py

```
def freq(text):
    str1=text.split()                  #split the text by space in list str1
    str2=[]                             #declare empty list str2

    for i in str1:
        if i not in str2:              #put unique words in str2
            str2.append(i)
    str2.sort()                         #sort the list str2

    output = open("output.txt","w")
    for i in range(0, len(str2)):
        output.write(str2[i])          #write each unique word to file
        output.write(',')              #seperate words and count by ,
        count=str1.count(str2[i])     #count the frequancy of words
        count = str(count)
        output.write(count)
        output.write('\n')             #each unique word on new line
    output.close()                      #close the file


def main():
    input = open("input.txt","r")     #Read the input from file
'input.txt'
```

```
    text = input.read()                 #read the lines of input file
    input.close()                       #close the file
    freq(text)                          #call the freq() and pass text as
parameter

if __name__ == "__main__":
    main()
```

input.txt

The fort walls were dismantled in 1864 and massive building works transformed the city in grand colonial style . When Bombay took over as the principal supplier of cotton to Britain during the American Civil War , the population soared and trade boomed as money flooded into the city .

output.txt

```
,,1
.,2
1864,1
American,1
Bombay,1
Britain,1
Civil,1
The,1
War,1
When,1
and,2
as,2
boomed,1
building,1
city,2
colonial,1
cotton,1
dismantled,1
during,1
flooded,1
fort,1
grand,1
in,2
into,1
massive,1
money,1
of,1
over,1
```

population,1
principal,1
soared,1
style,1
supplier,1
the,5
to,1
took,1
trade,1
transformed,1
walls,1
were,1
works,1