ARUNKUMAR A

DS205229102

Lab6. Python File Processing

Question1:Write a program for Password Management System

- File creation: Ask user to enter N user names and their passwords. Store usernames andpasswords into a file named “loginfile.txt”. Store each user and password in one line.
- File Processing: Write a program that opens your “loginfile.txt” file and reads usernames and passwords from it. Store user names in one list and passwords in another lists.
- Querying: ask user to enter user name and password for verification. If they match the values stored in the lists, print a message “Login Successful”. Otherwise print a message “Login Failed, try again”

In [1]:
```
def register():
    username = input("Please input the first 2 letters of your first name and your birth year ")
    password = input("Please input your desired password ")
    file = open("loginfile.txt","a")
    file.write(username)
    file.write(" ")
    file.write(password)
    file.write("\n")
    file.close()
    if login():
        print("You are now logged in...")
    else:
        print("You aren't logged in!")

def login():
    username = input("Please enter your username: ")
    password = input("Please enter your password: ")
    for line in open("loginfile.txt","r").readlines(): # Read the lines
        login_info = line.split() # Split on the space, and store the results in a list of two strings
        if username == login_info[0] and password == login_info[1]:
            print("Correct credentials!")
            return True
    print("Incorrect credentials.")
    return False
```

In [2]:
```
register()
```

```
Please input the first 2 letters of your first name and your birth year mahesh29
Please input your desired password maheshvaran29
Please enter your username: mahesh29
Please enter your password: maheshvaran29
Correct credentials!
You are now logged in...
```

In [3]:
```
login()
```

```
Please enter your username: mahesh29
Please enter your password: maheshvaran29
Correct credentials!
```

Out[3]:
```
True
```

Question2: Write a program for Student Performance Analysis

- Create a text file, 'marks.txt', with N marks as floating point numbers. Open the file, read marks from it and compute and print the highest mark.
- If the user runs the program more than once you should not overwrite the previous text file – simply append the marks to the end of the file.
- Modify the above program so that it also prints Top-3 highest marks (Note: you may need to use list concept)
- Modify the above program so that it also prints the Lowest-3 marks.

In [4]:
```
marks= [99.0,100.0,95.0,96.0,97.0]
with open('marks1.txt', 'a') as file:
    for mark in marks:
        file.write("%.1f\n" % mark)
number_list=[]
with open('marks1.txt', 'r') as fp:
    number_list = [float(item) for item in fp.readlines()]
print(max(number_list))

def Nmaxelements(list1, N):
    final_list = []
    for i in range(0, N):
        max1 = 0
        for j in range(len(list1)):
            if list1[j] > max1:
                max1 = list1[j];
        list1.remove(max1);
        final_list.append(max1)
    print(final_list)
Nmaxelements(number_list,3)

def Nminelements(list1, N):
    final_list =[];
    for i in range(0, N):
        min1 = 9999999;
        for j in range(len(list1)):
            if list1[j]<min1:
                min1 = list1[j];
        list1.remove(min1);
        final_list.append(min1)
    print(final_list)
Nminelements(number_list,3)
```

```
100.0
[100.0, 100.0, 100.0]
[95.0, 95.0, 95.0]
```

Question:3 Write a program for Stock Price Analysis

- File Creation: Continually prompt a user for stock name, followed by price values for 5 days. Each row indicates stock name and daily prices of one stock. Store these values in a text file called “stock-prices.txt”. Open the file in Append Mode. Prompt message “Do you want to continue? “ and stop reading values accordingly. Then, you can close your file.
- File Processing: Now, open your file for processing. Print stock name, minimum price, maximum price and average price values.
- You can also print which day stock price was lowest in the week and which day stock price was highest. So, modify your print statement to print stock name, minimum price & day of minimum price, maximum price & day of maximum price and average price values. (Hint: Use enumerate to get index values)

In [3]:
```
while True:
    st_name=str(input("Enter the name:  "))
    file=open("stock_prices.txt","a")
    file.write(st_name)
    file.write("  ")
    for i in range(5):
        p=input()
        file.write(p)
        file.write("  ")
    file.write("\n")
    con = str(input("want to continue  :  "))
    if con =='n':
        break
file.close()
```

```
Enter the name:  apple
32
43
54
65
76
want to continue  :  m
Enter the name:  Dell
32
43
54
65
76
want to continue  :  m
Enter the name:  hp
34
45
56
67
78
want to continue  :  n
```

In [5]:
```
for st in open("stock_prices.txt","r").readlines():
    p_min=[]
    calc=st.split()
    print(calc[0])
    for i in range(1,6):
        p_min.append(int(calc[i]))
    print(min(p_min))
    print(max(p_min))
    av=sum(p_min)
    avg=av/5
    print(avg)
    print("\n")
```

```
mango
5
6
5.2


pineapple
4
8
6.0


sony
34
232
86.8


apple
```

In [9]:
```
for st in open("stock_prices.txt","r").readlines():
    p_min=[]
    print("-------------------------")
    calc=st.split()
    print(calc[0])
    for i in range(1,6):
        p_min.append(int(calc[i]))
    mip=min(p_min)
    mxp=max(p_min)
    im=p_min.index(mip)
    ix=p_min.index(mxp)
    print("min price ",mip," on day ",im+1)
    print("max price ",mxp," on day ",ix+1)
```

```
-------------------------
mango
min price  5  on day  1
max price  6  on day  5
-------------------------
pineapple
min price  4  on day  1
max price  8  on day  5
-------------------------
sony
min price  34  on day  1
max price  232  on day  2
-------------------------
apple
min price  34  on day  1
max price  98  on day  5
-------------------------
blackberry
min price  32  on day  5
```

Question:4 Write a program for File Explorer

Display the contents of file 1.Count the number of lines in a text file. (Use splitlines()) 2.Count the number of unique words in a file. 3.Find frequency of words in a given file. (Hint: Use Counter object) 4.Show a random line in a file. (Use Random object)

In [2]:
```
print("1.Display the contents of File:")
print("-------")
f = open("samplemv.txt",'r')
display = f.read()
print(display)
f.close()
print("")

print("2.Count the number of lines in a text file:")
print("-------")
file = open("samplemv.txt","r")
Counter = 0
Content = file.read()
CoList = Content.split("\n")

for i in CoList:
    if i:
        Counter += 1
print("Number of lines in the text file:",Counter)
print("\n")


print("3.Count the number of unique words in a file:")
print("-------")
num_words = 0
c = open("samplemv.txt", 'r')
for line in c:
    words = line.split()
    num_words += len(words)
print("Number of words:",num_words)
c.close()
print("\n")


print("4.Find Find frequency of words in a given file:")
print("--------")
fname = input('Enter the file name: ')
print("-----------------------------------------------------------------------------------------------------")
try:
    fhand = open(fname)
    counts = dict()
```

```
    for line in fhand:
        words = line.split()
        for word in words:
            if word in counts:
                counts[word] += 1
            else:
                counts[word] = 1
    print(counts)
except:
    print('File cannot be opened:', fname)
print("\n")

print("5.Show a random line in a file:")
print("--------")
import random
def random_line(fname):
    lines = open(fname).read().splitlines()
    return random.choice(lines)
print(random_line('samplemv.txt'))
```

```
1.Display the contents of File:
-------
hi i am maheshvaran
hi i am mahesh
hi i am mahe

2.Count the number of lines in a text file:
-------
Number of lines in the text file: 3


3.Count the number of unique words in a file:
-------
Number of words: 12


4.Find Find frequency of words in a given file:
--------
Enter the file name: samplemv.txt
----------------------------------------------------------------------------------------------------
{'hi': 3, 'i': 3, 'am': 3, 'maheshvaran': 1, 'mahesh': 1, 'mahe': 1}
```

```
5.Show a random line in a file:
--------
hi i am mahesh
```

Question5: Develop an application in Python to read through the email data (“mbox-short.txt”) and when you find line that starts with “From”, you will split the line into words using the split function. We are interested in who sent the message, which is the second word on the From line: From stephen.marquard@uct.ac.za (mailto:stephen.marquard@uct.ac.za) Sat Jan 5 09:14:16 2008. You will parse the From line and print out the second word for each From line, then you will also count the number of From (not From:) lines and print out a count at the end.

In [118]:
```
fhand = open('mbox-short.txt')
for line in fhand:
    line = line.rstrip()
    if line.startswith('From '):
        print(line)
```

```
From stephen.marquard@uct.ac.za Sat Jan  5 09:14:16 2008
From louis@media.berkeley.edu Fri Jan  4 18:10:48 2008
From zqian@umich.edu Fri Jan  4 16:10:39 2008
From rjlowe@iupui.edu Fri Jan  4 15:46:24 2008
From zqian@umich.edu Fri Jan  4 15:03:18 2008
From rjlowe@iupui.edu Fri Jan  4 14:50:18 2008
From cwen@iupui.edu Fri Jan  4 11:37:30 2008
From cwen@iupui.edu Fri Jan  4 11:35:08 2008
From gsilver@umich.edu Fri Jan  4 11:12:37 2008
From gsilver@umich.edu Fri Jan  4 11:11:52 2008
From zqian@umich.edu Fri Jan  4 11:11:03 2008
From gsilver@umich.edu Fri Jan  4 11:10:22 2008
From wagnermr@iupui.edu Fri Jan  4 10:38:42 2008
From zqian@umich.edu Fri Jan  4 10:17:43 2008
From antranig@caret.cam.ac.uk Fri Jan  4 10:04:14 2008
From gopal.ramasammycook@gmail.com Fri Jan  4 09:05:31 2008
From david.horwitz@uct.ac.za Fri Jan  4 07:02:32 2008
From david.horwitz@uct.ac.za Fri Jan  4 06:08:27 2008
From david.horwitz@uct.ac.za Fri Jan  4 04:49:08 2008
From david.horwitz@uct.ac.za Fri Jan  4 04:33:44 2008
From stephen.marquard@uct.ac.za Fri Jan  4 04:07:34 2008
From louis@media.berkeley.edu Thu Jan  3 19:51:21 2008
From louis@media.berkeley.edu Thu Jan  3 17:18:23 2008
From ray@media.berkeley.edu Thu Jan  3 17:07:00 2008
From cwen@iupui.edu Thu Jan  3 16:34:40 2008
From cwen@iupui.edu Thu Jan  3 16:29:07 2008
From cwen@iupui.edu Thu Jan  3 16:23:48 2008
```

In [119]:
```
fhand = open("mbox-short.txt")
count = 0
for line in fhand:
    line = line.rstrip()
    if line == "": continue
    words = line.split()
    if words[0] !="From": continue
    print(words[1])
    count = count+1
print ("There were", count, "lines in the file with From as the first word")
```

```
stephen.marquard@uct.ac.za
louis@media.berkeley.edu
zqian@umich.edu
rjlowe@iupui.edu
zqian@umich.edu
rjlowe@iupui.edu
cwen@iupui.edu
cwen@iupui.edu
gsilver@umich.edu
gsilver@umich.edu
zqian@umich.edu
gsilver@umich.edu
wagnermr@iupui.edu
zqian@umich.edu
antranig@caret.cam.ac.uk
gopal.ramasammycook@gmail.com
david.horwitz@uct.ac.za
david.horwitz@uct.ac.za
david.horwitz@uct.ac.za
```

Question6. Write a program to read and write CSV files

1).File Creation: Create MS Excel file (“student_marks.csv”) with 5 rows of student name, mark1, mark2, mark3, mark4. Use comma to separate each value in a row.

2).File Display: Now, open your CSV file and display the file contents row by row (More information at: https://docs.python.org/3/library/csv.html (https://docs.python.org/3/library/csv.html)).

3).File Writing: Now, open ("student_marks.csv") for writing. Ask user to enter name followed by 4 marks for one new student and write them onto the file.

In [15]:
```
from csv import writer
def append_list_as_row(file_name, list_of_elem):

    with open('student_marks.csv', 'a+', newline='') as write_obj:

        csv_writer = writer(write_obj)

        csv_writer.writerow(list_of_elem)

row_contents = ['Suresh',68,78,89,87,90]
row_contents1 = ['ganesh',68,78,89,87,90]
row_contents2 = ['Harish',68,78,89,87,90]
row_contents3 = ['Rajesh',68,78,89,87,90]
append_list_as_row('student_marks.csv', row_contents)
append_list_as_row('student_marks.csv', row_contents1)
append_list_as_row('student_marks.csv', row_contents2)
append_list_as_row('student_marks.csv', row_contents3)
```

In [16]:
```
import csv
with open('student_marks.csv', newline ='') as csvfile:
    reader = csv.reader(csvfile, delimiter =' ', quotechar ='|')
    for row in reader:
        print(', '.join(row))
```

```
student, name,mark1,mark2,mark3,mark4,mark5
Johnson,78,56,72,95,77
Tom,89,69,74,90,88
Josephine,90,89,93,78,70
Jerry,89,78,70,88,90
David,90,98,87,89,86
Sam,68,78,89,87,90
Ram,68,78,89,87,90
Ramkumar,68,78,89,87,90
Suresh,68,78,89,87,90
ganesh,68,78,89,87,90
Harish,68,78,89,87,90
Rajesh,68,78,89,87,90
```