CENG 113

Programming Basics
HOMEWORK #3

DUE DATE: 25.12.2020 - 23:59

In this assignment you are expected to implement a simple social media program. A file named "users.txt" is given in which usernames, passwords and friend lists are stored in a certain way. When your program runs, this file will be read, the main menu will be shown and the user will be asked to enter an option. If an invalid option is entered, the user will be warned, the main menu will be shown again and another user input will be requested.

Main menu should look like this:

```
1. Log in / change user

2. Create new user

3. Add friend

4. Show my friends

5. Save and exit
```

➔ If 1 is entered, the user will be asked to enter a username and a password:

◆ If a user is found with the entered name and password the program should log in the user by keeping the entered user name in the memory.

◆ If the entered user name does not exist or the password and the username do not match then the program should print out "Wrong password or user name".

➔ If 2 is entered, the user will be asked to enter a new username and a password:

◆ If the entered username is valid & unique, and the entered password is valid then the user list should be updated with the new info. The logged in user should not change after a new user creation.

◆ If the entered username already exists in the user list or it's not valid the program should print out "Username not valid".

◆ If the password is not valid then the program should print out "Password not valid"

➔ If 3 is entered, depending on the login status:

◆ If a user is logged in, the user will be asked to enter the name of their new friend.
  ● If the entered name exists in the user list, the logged in user's friend list must be updated with the entered name.
  ● If the entered name does not exist in the user list, the program should print out "Friend not found"
◆ If the user is not logged in then the program should print out "You need to log in first"

➔ If 4 is entered, depending on the login status:

◆ If a user is logged in, the logged in user's friend list should be printed out

◆ If the user is not logged in then the program should print out "You need to log in first"

➔ If 5 is entered, then the updated user list in the memory will be saved to the file and then the program will quit.

➔ For all of the options except 5, when the task is completed, the main menu will be shown again.

Notes:
- Implement a function to validate usernames. Usernames must be unique, should only contain numbers and english lowercase letters between a-z, should not be empty strings.
- Implement a function to validate passwords. Password length should be between 4-8, it should contain at least one letter and one number.
- A single line of users.txt file consists of 3 parts which are username, password, and friend list. Each part is separated by the ";" character.
- You must call a function for each menu option. Your loop for the main menu should not be longer/more complex than it needs to be.
- This homework will be graded mostly automatically. Be very careful about your outputs. Example input and output files are given with your homework. You can test your own code with the given files. For your convenience an example run with the outputs, and all the print statements are given below.

Example run:
```
1. Log in / change user
2. Create new user
3. Add friend
4. Show my friends
5. Exit
1
Please enter username:
ali
Please enter password:
1234
Logged in

1. Log in / change user
2. Create new user
3. Add friend
4. Show my friends
5. Exit
6
Invalid option

1. Log in / change user
2. Create new user
3. Add friend
4. Show my friends
5. Exit
4
```

```
ahmet,ovgu,ayse
1. Log in / change user
2. Create new user
3. Add friend
4. Show my friends
5. Exit
5
```

All print/input statements(some are used more than once):
```
input("Please enter username:\n")
input("Please enter password:\n")
print("Logged in\n")
print("Wrong password or username\n")
print("Username not valid\n")
print("Password not valid\n")
input("Please enter the name of your new friend:\n")
print("Friend not found\n")
print("You need to log in first\n")
menu_text = "1. Log in / change user\n2. Create new user\n3. Add friend\n4.
Show my friends\n5. Exit\n"
print(menu_text)
print("Invalid option\n")
```

Hint:

- A simple snippet for writing a line into a file:
  ```
  thefile = open('test.txt', 'w')  # opening the file in write mode
  thefile.write("abcde\n")  # writing the string into the file
  ```

- Write mode will overwrite the existing file and start from scratch. Due to buffering, the string may not actually show up in the file until the flush() or close() method is called.

SUBMISSION RULES:

1. Submit your solution through Microsoft Teams until the deadline, 25.12.2020 23:59 .
2. The file name should be named as ceng113_hw3_ID.py . You must write your student ID in the ID section, otherwise the grader will not be able to read the file among other student files.
3. Cheating is prohibited, you will get zero if any cheating is detected.
4. Instead of sending private messages to assistants, ask your questions from the assistant section.