**Bank Account Program**

**ICS 104 Lab Project**

**Term 202**

Develop a menu driven complete program that can perform the features in in Figure 1. This program works for an individual customer only; the program will save the bank account information into a text file.



Figure 1: Bank Account System Menu

* **Description:**

The program starts by asking the user to select either login (**L**) or sign up (**S**) feature. Once the user selects a feature, it asks him for (**Card Number**, then **PIN**) and after filling the required information for that feature, it shows the above menu for other features. Otherwise, it keeps asking for the required information. Each feature has to be designed using a separate function and it might be called by other functions including the main function. The description of the login feature, sign up feature, and the above features are given below:

1. **Sign up Feature – def create**(): this feature allows new user to create an account and it saves hisinformation in **cardNumber.txt**. The required information to be asked in this feature as follows:
   1. **Card Number**: user will enter a card number and should be four digits, each digit is unique andit should not be repeated in the 4-digits card number. This feature will keep running until the user enters the required number with same length and type.
   2. **PIN**: user will enter a PIN number and should be four digits, each digit is unique and it should not berepeated in the 4-digits PIN number. This feature will keep running until the user enters the required number with same length and type.
   3. **Email**: user will enter his KFUPM email (g20XXXXXXX@kfupm.edu.sa) and it should KFUPM email.Otherwise, it will ask again for email with same specifications.
   4. **Extra Attribute**: user needs to add at least one extra attribute (of your own choice) for the created account.

After creating your account, you are required to save the information in **cardNumber.txt** file in same path of your **jupyter** file. Then, the program will sleep for few seconds and it will redirect you to login feature.

1. **Login Feature – def login**(): This feature allows the user to login to his saved account after creating theaccount using the first function (create()). The required information to be asked in this feature as follows:
   1. It asks the user to enter his card number and it should be available in same path (cardNumber.txt). The program will check the first line in the cardNumber.txt for the card number. This feature will keep running until the user enters his saved number.
   2. Then, the program will check the second line in the cardNumber.txt for the PIN number. This feature will keep running until the user enters his saved number.
   3. If the user enters the correct info, the menu in Figure 1 will appear directly.

1

1. **Show Feature – def show**(file): this feature allows the user to show his saved account details based onthe reading of his .txt file. After doing this step, the program will sleep for few seconds and it will redirect you to the menu again.
2. **ChangePIN Feature – def changePinFun**(currentPIN, cardNumber, file): this feature allows the user tochange his PIN number in the .txt file. Here, you are required to replace the saved PIN by new PIN and it should have same structure. After doing this step, the program will sleep for few seconds and it will redirect you to the menu again.
3. **Withdraw Feature – def withdrawFun**(money, cardNumber, file): this feature allows the user to withdrawmoney from his account and then updates the account details in the .txt file accordingly. Remind that, if you don’t have enough money in your account, it will give a notification message and it will ask for new amount until you entered an amount that you can withdraw it. After doing this step, the program will sleep for few seconds and it will redirect you to the menu again.
4. **Deposit Feature – def depositFun**(file, nMoney, cardNumber): this feature allows the user to depositmoney to your account and then updates the account details in the .txt file accordingly. After doing this step, the program will sleep for few seconds and it will redirect you to the menu again.
5. **Bills Feature – def payBillFun**(file, nMoney, cardNumber): this feature allows the user to pay a bill fromhis account, deducts this bill from the account and updates the account details in the .txt file accordingly.
   1. Enter the name of the bill.
   2. Enter the account number of this bill.
   3. Enter the value of this bill.

Remind that, if you don’t have enough money in your account, it will give a notification message and it will ask to deposit amount to deduct the bill. After doing this step, the program will sleep for few seconds and it will redirect you to the menu again.

1. **View Transactions Feature – def viewTransactionsFun**(cardNumber): this feature allows the user toshow the history of his account based on the .txt file. If there are transactions in the account, it will be presented along with its (date and time). Otherwise, it will show "no transactions". After doing this step, the program will sleep for few seconds and it will redirect you to the menu again.
2. **Terminate Feature – def terminateFun**(file, nMoney, cardNumber): this feature allows the user to ter-minate the program and at same time it will show the last transactions on the account during the session.

* **Deliverables and Requirements:**
  1. The deadline for submitting the project is the end of week 14 (by end of Friday April 23, 2021).
  2. Submission will be through the blackboard only – assignment section (Two attempts only).
  3. Your program must contain as many functions as needed. You need to divide your problem into small tasks and each task handled by a function as we explained in the description of the features.
  4. Source code will contain comments on different functions.
  5. Each project will be done by a max of 2 students, but each student has to know about all the project and will be asked about it individually.
  6. The project will be accepted if the group demonstrate their work in Week 15, each group will have up to 10-15 minutes to discuss it with the instructor.
  7. You are going to open your camera during the demonstration. Otherwise, the project will not be accepted and the concern student will get zero grade.
  8. Your jupyter file should have the following lines at the beginning:

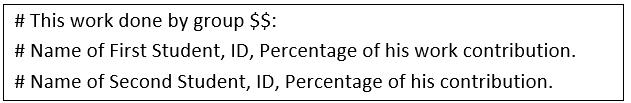


Figure 2: The beginning of your code

2

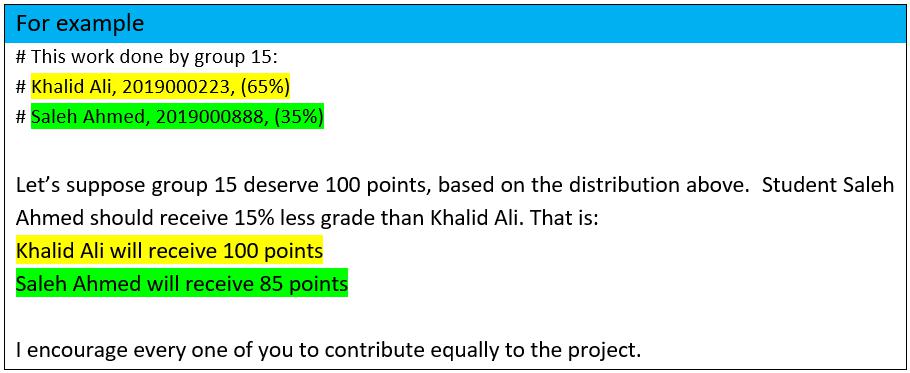


Figure 3: Grade distribution based on the student’s contribution

3