

### Rules

1. Your group **MUST** remain the same.
2. You can use the internet or any other appointments you might have.
3. You should not copy from other groups.
4. The top 3 groups will be recommended the professors in LinkedIn
5. You should deliver a single **.zip file** named group\_number.zip
6. You should put in comments in the first line of each file of your delivery, the group and the student numbers.
7. **DELIVERY DATE: Saturday, 14<sup>th</sup> March 17h. After this the repository will be closed and no more GWiC will be accepted.**

## Read everything with attention!

### Important Notes before starting

You will start the second part of GWiC with a bank.py file that has all the functionalities from part one fully functional. You should insert your code in the commented area for that, so that you don't change working code from us, and don't lose time correcting it. You will have another file called user.py where you will create a User class. This file is already imported in your bank.py file, so you will be able to use it by simply creating an instance of User class and calling its methods. **YOU MUST HAVE BOTH FILES IN THE SAME FOLDER.**

### Part two

The Group Work in Class (GWiC) objective is to create the Bank Rupt bank management system.

At this moment, bank managers are really happy with this program and decided to continue its development.

### The User class

Your first task is to replace the data structure for clients, that was previously made with a list of dictionaries, with a new one, where you will have a list of instances of class User.

Open the user.py file and implement the class User with the same attributes that you had before:

- username - mandatory to instantiate the object
- password - mandatory to instantiate the object
- type – mandatory, but “client” is default
- lock – not mandatory and default is False

There will be a new attribute called balance, that will represent the user account balance.

All these parameters inside the User class must be private and **you must create functions to get these attributes values.**

Also, you will have to create:

- function to add a certain value to the user balance
- function to remove a certain value from the user balance
- function to set the user balance
- function to change the user lock status

Once you have this development complete, you should create 2 users of type client and one user of type admin to the bank list.

The first client should have balance 100 and should be locked and the second client only has the default values.

### Admin functions

The admin user menu will have 3 options:

1. Create client
2. Unlock client
3. List all clients

### Create client

To create a client, the program will ask for a client name and password. If the client username does not exist already, it should be created and inserted in your clients list. If the client username already exists, an error message is printed, and the admin is redirected to the admin menu.

Client created with success and creating an already existing client

hello admin admin

1. Create client
2. Unlock client
3. List clients
0. Logout

Please select one option from the menu: 1

Please insert the client username: joao

Please insert the client password: joao

client joao created with success.

1. Create client
2. Unlock client
3. List clients
0. Logout

Please select one option from the menu: 1

Please insert the client username: joao

there is already a client with this username.

1. Create client
2. Unlock client
3. List clients
0. Logout

Please select one option from the menu:

### *Unlock client*

When the admin selects this option, a list of all locked clients is displayed. The program will then ask the admin to insert a client locked username and if the client is locked, the program will unlock it. If the admin inserts a client username that is not locked, the program should display an error message.

#### *Unlocking a locked client and unlocking a non-locked client*

hello admin admin

1. Create client
2. Unlock client
3. List clients
0. Logout

Please select one option from the menu: 2

Locked clients list:  
pedro

Please select the client username to unlock: pedro

Client pedro was successfully unlocked.

1. Create client
2. Unlock client
3. List clients
0. Logout

Please select one option from the menu: 2

Locked clients list:

Please select the client username to unlock: pedro

the selected client is not locked!

1. Create client
2. Unlock client
3. List clients
0. Logout

Please select one option from the menu:

### *List clients*

This option will list all users of type client in the program and should display this information according the output bellow:

1. Create client
2. Unlock client
3. List clients
0. Logout

Please select one option from the menu: 3

Clients list:

name: pedro type: client locked: False

name: joana type: client locked: False

1. Create client
2. Unlock client
3. List clients
0. Logout

Please select one option from the menu:

## Client functions

Clients have four option in their menu:

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money

### *View Balance*

The program displays the current user account balance

#### Displaying the account balance

hello client pedro

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: **1**

Your account balance is: 100

### *Deposit money*

When a client selects this option, the program will ask for the amount to deposit.

If the amount is negative or zero, the program should print an error message and redirect to the menu. If the value is positive and greater than zero, the program will sum the value to the client account balance and display a message with this change.

#### *Successful deposit and unsuccessful deposit example*

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: 2

please insert the deposit value: 50

Your current balance is: 150.0

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: 2

Please insert the deposit value: -4

please deposit a positive amount or different than zero amount.

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu:

### *Withdraw money*

When a client selects this option, the program will ask for the amount to withdraw.

If the client current balance has this amount, the client account balance is reduced by the amount and a message displaying the current balance after the withdraw is displayed. If the user tries to withdraw an amount superior to the current balance, an error message is displayed.

### *Successful withdraw and unsuccessful withdraw example*

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: 3

please insert the withdraw value: 50

Your current balance is: 100.0

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: 3

please insert the withdraw value: 300

You don't have funds for this withdraw

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu:



### Transfer money

When transfer money operation is selected, the program displays a list of all clients in the bank to help the client user know to whom it will transfer funds.

After this, the program will ask the client user to insert the client to whom it wants to transfer the funds. If this client exists, the program will ask the user for the amount to transfer. The program will validate if you have enough funds for the transfer, and if you do then the amount is subtracted from your account balance and added to the other client balance. A message with this transaction is displayed in the end.

### Successful money transfer

hello client pedro

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: 4

Clients list:

name: pedro type: client locked: False

name: joana type: client locked: False

please insert the client username to transfer funds: joana

please insert the amount to transfer to joana : 50

the amount of 50.0 was transferred to joana

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu:

### Money transfer to non-existing client

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: 4

Clients list:

name: pedro type: client locked: False

name: joana type: client locked: False

please insert the client username to transfer funds: jose

please select a valid client

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu:

### Money transfer with insufficient funds

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: 4

Clients list:

name: pedro type: client locked: False

name: joana type: client locked: False

please insert the client username to transfer funds: joana

please insert the amount to transfer to joana : 500

You don't have funds for this transfer

1. View balance
2. Deposit money
3. Withdraw money
4. Transfer money
0. Logout

Please select one option from the menu: