

Project (QT GUI)

Assignment Guidelines

1. You will work in pairs
2. Pairs must be within the same lecture group.
3. Deadline: 7th November .
4. You must submit your Qt project on blackboard and will have a discussion later on your work.
5. For the discussion, you will be asked about the whole assignment no just the parts you implemented.
6. You are not allowed to modify the assignment after the deadline.
7. Cheating will be strictly penalized.

Library System

You are asked to make a system for a library from which students can buy books using QT's GUI operations. You will mainly have three case scenarios to complete. First student should sign in then can have options to recharge his balance and buy a book.

You will work on 3 windows: Sign in window, purchase book window and show purchased books window.

ComboBox explained in QT :

https://www.youtube.com/watch?v=5Lb8DZhAAi8&ab_channel=VoidRealms

Points to be covered in your assignment:

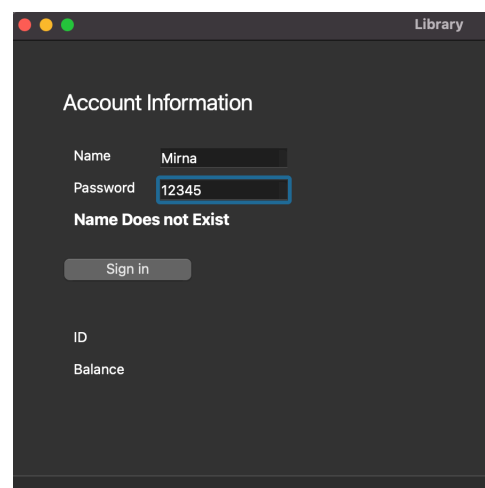
A. The library system has the following data :

1. Students data
 - Names (String array)
 - passwords (String array)
 - Ids (String array)
 - PurchasedBooks (QString* array)
 - Account balance (money to buy books) (Int array)
2. Books data:
 - Name (String array)
 - Price (Int array)

B. Sign in Case Scenario (30 Points)

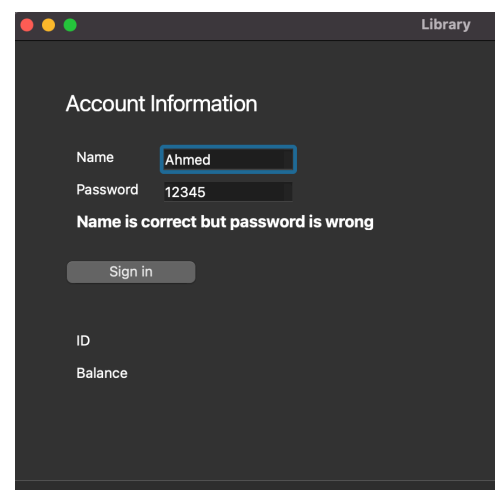
Student sign in using name and password to his account, in order for that to happen, you must cover the following conditions:

- a. If user enters a name that is not in the database, in your case it is your array, you should clarify that the name does not exist.



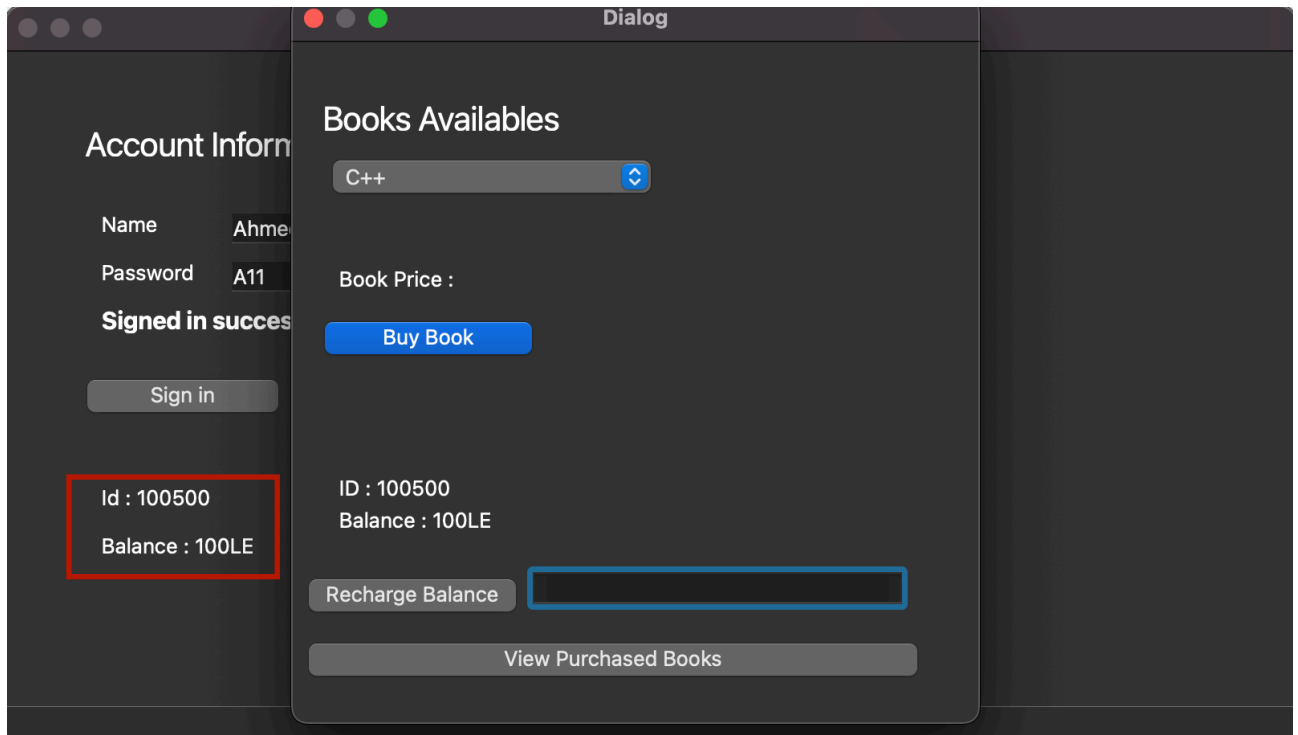
The screenshot shows a window titled "Library" with a dark background. The title bar has three colored buttons (red, yellow, green) on the left. The main content area is titled "Account Information". It contains two input fields: "Name" with the value "Mirna" and "Password" with the value "12345". Below these fields, the text "Name Does not Exist" is displayed in red. A "Sign in" button is located below the error message. At the bottom of the window, there are labels for "ID" and "Balance".

- b. If user enters a correct name but wrong password, you should print on the screen to the user that the name exists but the error is in the password.



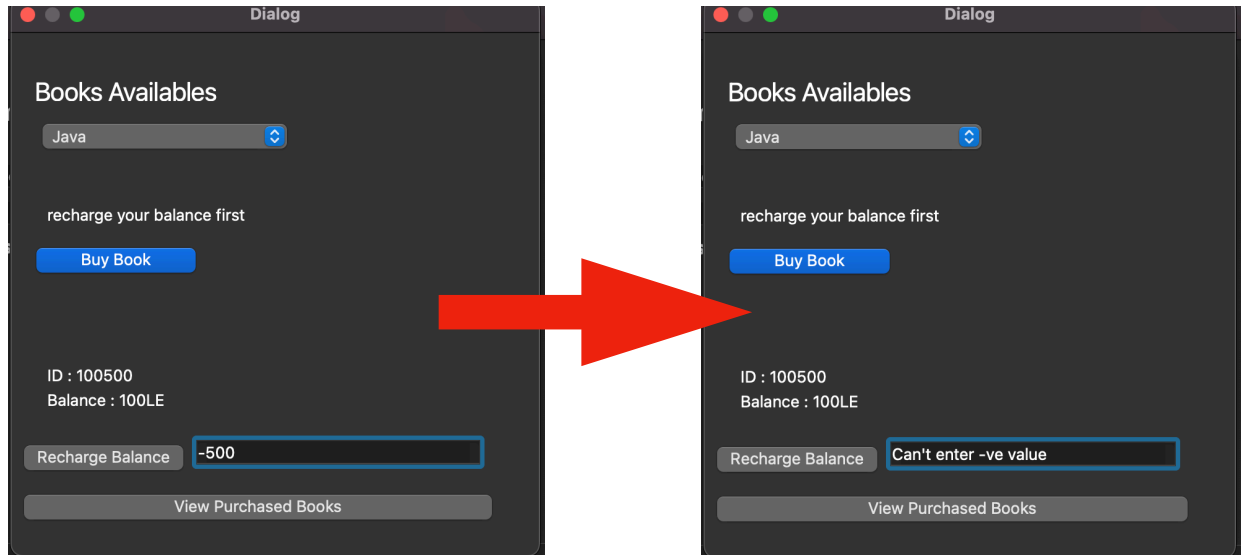
The screenshot shows a window titled "Library" with a dark background. The title bar has three colored buttons (red, yellow, green) on the left. The main content area is titled "Account Information". It contains two input fields: "Name" with the value "Ahmed" and "Password" with the value "12345". Below these fields, the text "Name is correct but password is wrong" is displayed in red. A "Sign in" button is located below the error message. At the bottom of the window, there are labels for "ID" and "Balance".

- c. If the user enters both name and password correctly, then you should print his account balance and his ID on the screen as below then the window in which he will make the purchase shows up. The new window shows the available books in a combobox and the user's data such as the Id and the balance are displayed in the opened window.

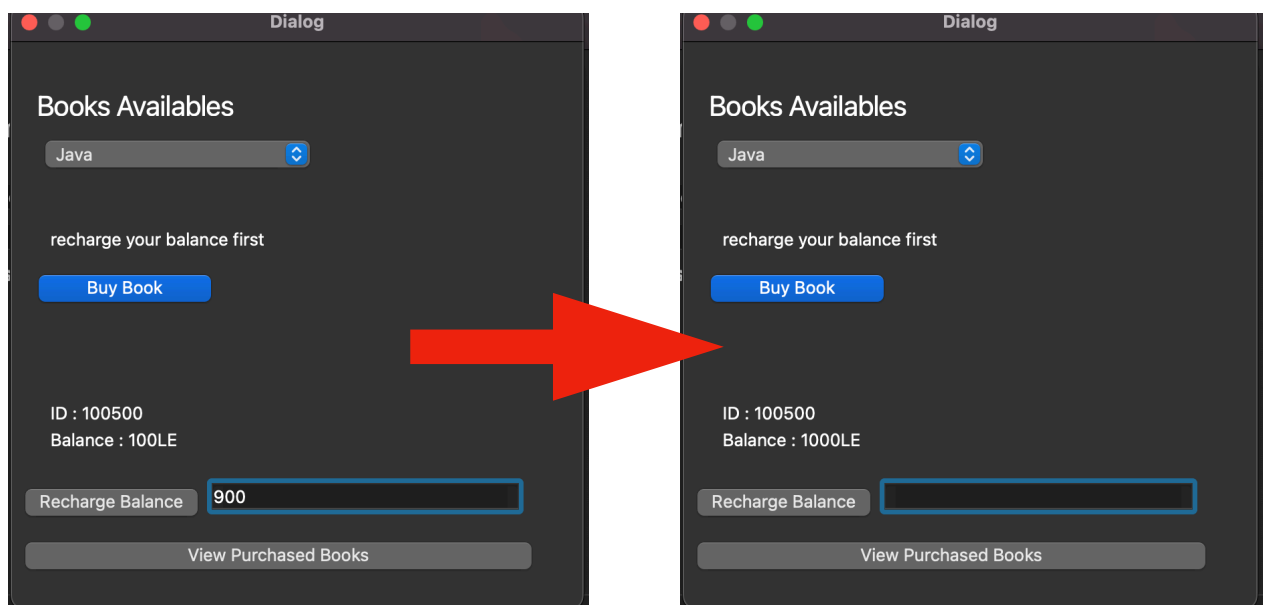


C. Balance Recharge Case Scenario. (20 Points)

- If the user try to charge his balance, the following must be covered:
 - i) You should accept only positive values. If the user charges with negative amount then you should alert him/her.



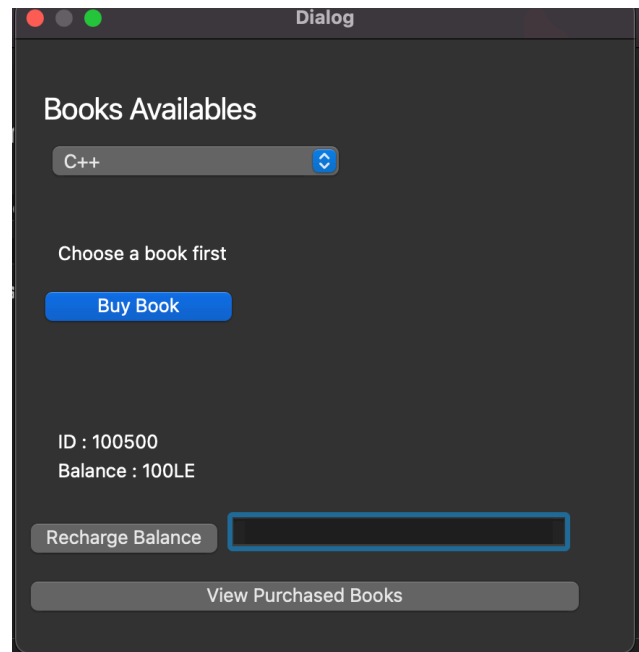
- ii) when the amount is correctly entered, the balance should be updated and the text area should be cleared.



D. Buying Book Case Scenario (40 Points)

The user will be given a combo box that shows the available books, when he chooses a book, the book price should be printed on the screen. If he decides to buy a book then this should be reflected in his account. You should cover the following conditions:

- a. If user tries to buy a book without choosing a book from the menu then he should be alerted.



Dialog

Books Availables

C++

Choose a book first

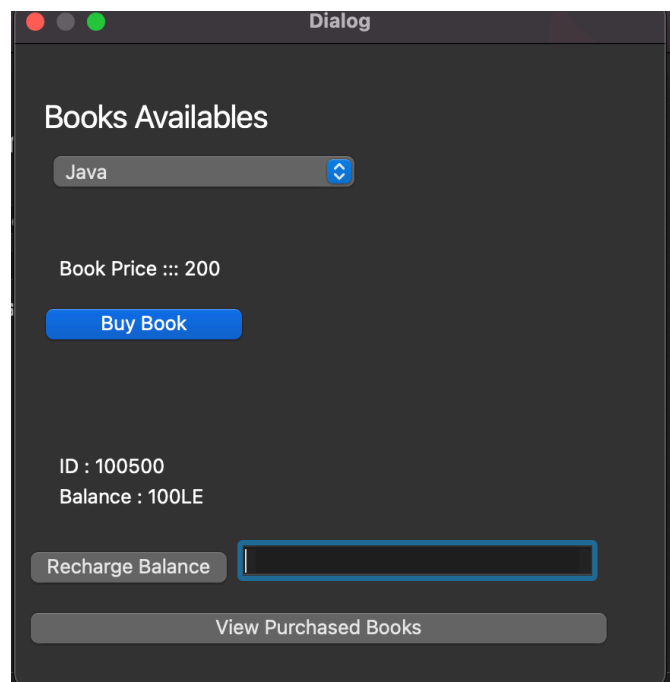
Buy Book

ID : 100500
Balance : 100LE

Recharge Balance

View Purchased Books

- b. When the user chooses a book, the book's price should be displayed.



Dialog

Books Availables

Java

Book Price ::: 200

Buy Book

ID : 100500
Balance : 100LE

Recharge Balance

View Purchased Books

- c. If user decides to buy book without enough money in his account balance, an error message should appear.

The screenshot shows a macOS-style dialog window titled "Dialog". Inside, the header is "Books Available". Below it is a dropdown menu currently set to "Java". A message "recharge your balance first" is displayed in red text. Below the message is a blue "Buy Book" button. Further down, the user's account details are shown: "ID : 100500" and "Balance : 100LE". Below this is a "Recharge Balance" button followed by an empty text input field. At the bottom is a "View Purchased Books" button.

- d. If he successfully purchased a book, a descriptive message should be displayed.

The screenshot shows the same "Books Available" dialog window. The dropdown menu is still "Java". The message "Book Purchased" is now displayed in green text. The "Buy Book" button is still present. The account details are updated to "ID : 100500" and "Balance : 800LE". The "Recharge Balance" button and its associated text input field remain at the bottom, along with the "View Purchased Books" button.

Showing List of Purchased books (10 Points)

- e. When the user finishes purchasing and clicks on view Purchased books button a new window should open, showing all his books.

