**Bank Account Application Requirements**

Create a bank account application that keeps track of customers and their associated accounts. A customer should be able to create a new account or access an existing account. The customer should have the options of a checking account or a savings account and can have multiple accounts of either type. Each account should have a unique account number. The customer should be able to deposit or withdraw (provided there are sufficient funds) from existing accounts. An account will keep track of the customer’s current balance.

A checking account can either have an initial deposit or not—the customer can choose when creating a new checking account. If a checking account balance is below $10,000 when a deposit is made, then the deposits will have an interest rate of 2% added to them; if the balance is $10,000 or more, an interest rate of 5% will be added to the deposits.

A savings account requires an initial deposit of $100 to be opened. If a savings account balance is below $10,000 when a deposit is made, then the deposits will have an interest rate of 4% added to them; if the balance is $10,000 or more, an interest rate of 7% will be added to the deposits.

Whenever a deposit or withdrawal is made, the details of the transaction should be displayed (amount of deposit and interest rate and updated balance, amount of withdrawal and updated balance). If a withdrawal amount is greater than an account’s balance, then the customer is notified of insufficient funds and no withdrawal takes place.

The application should have a menu system that asks the customer to select the option of opening a new account, accessing an existing account, or exiting the system.

If opening a new account, customers are asked if they are new or returning customers. If a new customer, then the menu asks for first name, last name, and a 4-digit PIN. The program creates a new customer and the customer is added to the bank, with the customer being accessed from a bank via their PIN. If the customer is not new, then the customer is asked to enter a PIN. The menu then gives the option of opening a checking or savings account. A checking account is given the option of an initial deposit or not. A savings account informs the customer of a $100 initial deposit requirement. After an account is created, the details (account type, number, balance, and interest rate) are displayed, and the customer is returned to the main menu.

If accessing an existing account, the customer is asked for a PIN (if incorrect, then invalid PIN message is displayed) and then asked which account they would like to access (checking or savings). The customer is shown a list of any accounts of the selected type they have, and asked which account, by account number, they want to access. The customer is given the option of selecting to make a deposit, make a withdrawal, or to see account balance. After the transaction, the customer is returned to the main menu.