Lab programme 5

```
import java.util.Scanner;

class Account {
    protected String customerName;
    protected int accountNumber;
    protected String accountType;
    protected double balance;

    public Account(String customerName, int accountNumber,
    String accountType, double balance) {
        this.customerName = customerName;
        this.accountNumber = accountNumber;
        this.accountType = accountType;
        this.balance = balance;
    }

    public void deposit(double amount) {
        if (amount > 0) {
            balance += amount;
            System.out.println("Deposit successful. New balance: " + balance);
        } else {
            System.out.println("Invalid deposit amount.");
        }
    }

    public void displayBalance() {
        System.out.println("Account Balance: " + balance);
    }
}

class SavAcct extends Account {
    private static final double INTEREST_RATE = 0.07;

    public SavAcct(String customerName, int accountNumber, double balance) {
        super(customerName, accountNumber, "Savings", balance);
    }

    public void computeAndDepositInterest() {
        double interest = balance * INTEREST_RATE;
        balance += interest;
        System.out.println("Interest of " + interest +
        " has been added. New balance: " + balance);
    }

    public void withdraw(double amount) {
        if (amount > 0 && amount <= balance) {
            balance -= amount;
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            System.out.println("Withdrawal successful. New balance: $" + balance);
        } else {
            System.out.println("Invalid withdrawal amount or insufficient balance.");
        }
    }
}

class CurAcct extends Account {
    private static final double MIN_BALANCE = 500.0;
    private static final double SERVICE_CHARGE = 50.0;

    public CurAcct(String customerName, int accountNumber, double balance) {
        super(customerName, accountNumber, "Current", balance);
    }

    public void withdraw(double amount) {
        if (amount > 0 && amount <= balance) {
            balance -= amount;
            System.out.println("Withdrawal successful. New balance: " + balance);
            checkMinimumBalance();
        } else {
            System.out.println("Invalid withdrawal amount or insufficient balance.");
        }
    }

    private void checkMinimumBalance() {
        if (balance < MIN_BALANCE) {
            balance -= SERVICE_CHARGE;
            System.out.println("Balance fell below minimum. Service charge of "
            + SERVICE_CHARGE + " applied. New balance: " + balance);
        }
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter customer name: ");
        String customerName = scanner.nextLine();

        System.out.print("Enter account number: ");
        int accountNumber = scanner.nextInt();

        System.out.print("Enter initial balance: ");
        double initialBalance = scanner.nextDouble();

        System.out.println("Choose account type:");
        System.out.println("1. Savings Account");
        System.out.println("2. Current Account");
        int accountChoice = scanner.nextInt();
```

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Account account;
if (accountChoice == 1) {
    account = new SavAcct(customerName, accountNumber, initialBalance);
} else if (accountChoice == 2) {
    account = new CurAcct(customerName, accountNumber, initialBalance);
} else {
    System.out.println("Invalid account type selection.");
    scanner.close();
    return;
}

boolean exit = false;
while (!exit) {
    System.out.println("\nChoose an operation:");
    System.out.println("1. Deposit");
    System.out.println("2. Withdraw");
    System.out.println("3. Display Balance");
    if (account instanceof SavAcct) {
        System.out.println("4. Compute and Deposit Interest ");
    }
    System.out.println("5. Exit");
    int choice = scanner.nextInt();

    switch (choice) {
        case 1:
            System.out.print("Enter amount to deposit: ");
            double depositAmount = scanner.nextDouble();
            account.deposit(depositAmount);
            break;

        case 2:
            System.out.print("Enter amount to withdraw: ");
            double withdrawAmount = scanner.nextDouble();
            if (account instanceof SavAcct) {
                ((SavAcct) account).withdraw(withdrawAmount);
            } else if (account instanceof CurAcct) {
                ((CurAcct) account).withdraw(withdrawAmount);
            }
            break;

        case 3:
            account.displayBalance();
            break;

        case 4:
            if (account instanceof SavAcct) {
                ((SavAcct) account).computeAndDepositInterest();
            } else {
                System.out.println("Invalid choice for Current Account.");
            }
```

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                    break;

                case 5:
                    exit = true;
                    System.out.println("Exiting...");
                    break;

                default:
                    System.out.println("Invalid choice.");
            }
        }

        scanner.close();
    }
}
```

OUTPUT

Enter customer name:xyz
Enter account number: 1001
Enter initial balance: 1000
Choose account type:

1. Savings Account
2. Current Account
   1

Choose an operation:

1. Deposit
2. Withdraw
3. Display Balance
4. Compute and Deposit Interest
5. Exit
   1
   Enter amount to deposit: 200
   Deposit successful. New balance: 1200.0

Choose an operation:

1. Deposit
2. Withdraw
3. Display Balance
4. Compute and Deposit Interest
5. Exit
   4
   Interest of 48.0 has been added. New balance: 1248.0

Choose an operation:

1. Deposit
2. Withdraw

3. Display Balance
4. Compute and Deposit Interest
5. Exit
   5
   Exiting...