Problem 3: Basic Banking System (Hard Level)

Description:
Create a Java program that implements a basic **banking system** with the following features:

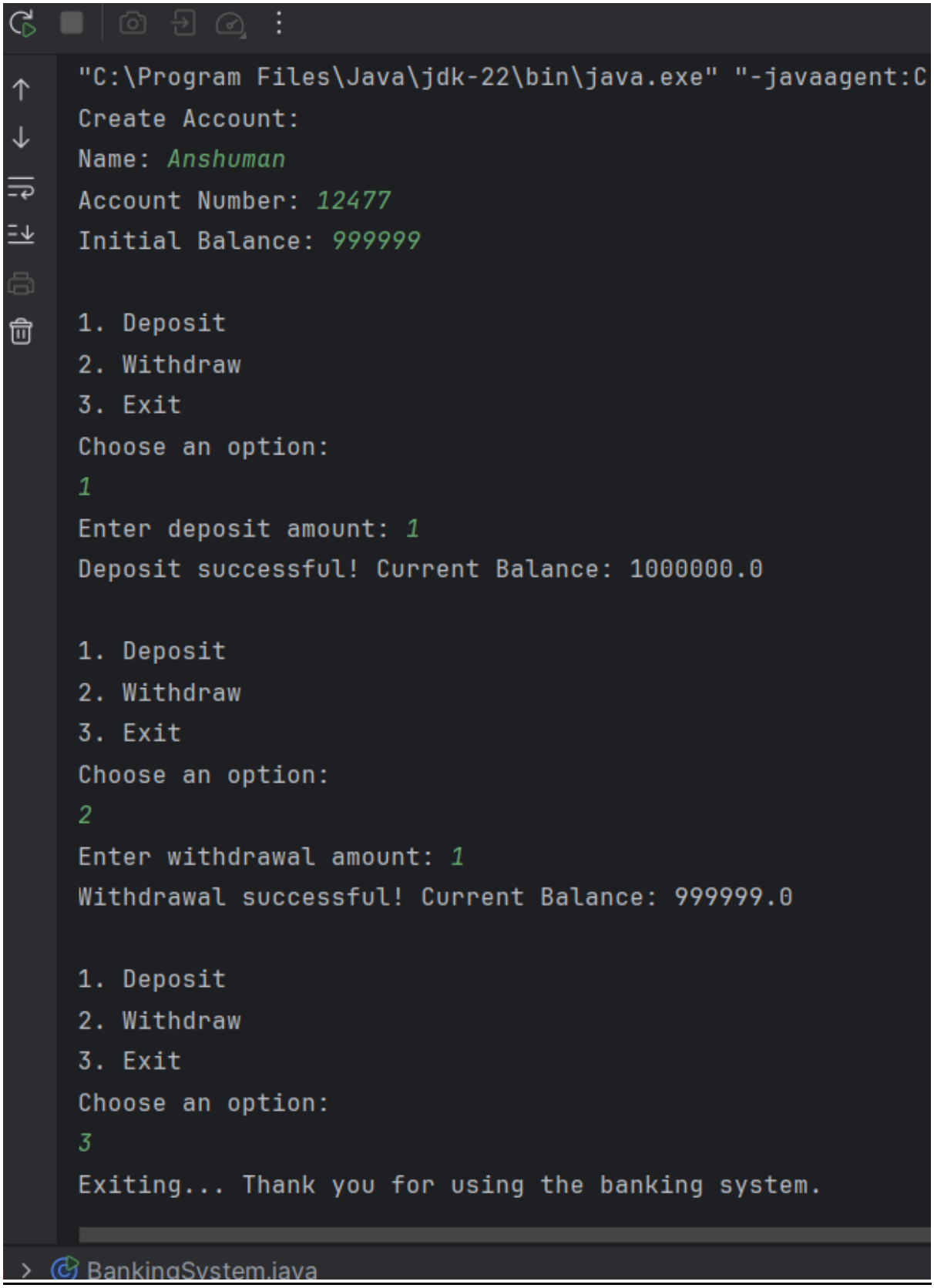
- **Account creation** (Name, Account Number, Balance)
- **Deposit and withdrawal operations**
- **Prevent overdraft** by checking the balance before withdrawal
- **Use encapsulation** (private variables with public getters/setters)

Code:

```
import java.util.Scanner;

class Account {
    private String name;
    private String accountNumber;
    private double balance;

    public Account(String name, String accountNumber, double balance) {
        this.name = name;
        this.accountNumber = accountNumber;
        this.balance = balance;
    }

    public String getName() {
        return name;
    }

    public String getAccountNumber() {
        return accountNumber;
    }

    public double getBalance() {
        return balance;
    }

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

    public void withdraw(double amount) {
        if (amount > 0 && amount <= balance) {
            balance -= amount;
            System.out.println("Withdrawal successful! Current Balance: " +
balance);
        } else {
            System.out.println("Error: Insufficient funds. Current Balance:
" + balance);
```

```
        }
    }
}

public class BankingSystem {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Create Account:");
        System.out.print("Name: ");
        String name = scanner.nextLine();
        System.out.print("Account Number: ");
        String accountNumber = scanner.nextLine();
        System.out.print("Initial Balance: ");
        double balance = scanner.nextDouble();

        Account account = new Account(name, accountNumber, balance);

        while (true) {
            System.out.println("\n1. Deposit\n2. Withdraw\n3. Exit\nChoose
an option: ");
            int option = scanner.nextInt();

            switch (option) {
                case 1:
                    System.out.print("Enter deposit amount: ");
                    double depositAmount = scanner.nextDouble();
                    account.deposit(depositAmount);
                    break;
                case 2:
                    System.out.print("Enter withdrawal amount: ");
                    double withdrawalAmount = scanner.nextDouble();
                    account.withdraw(withdrawalAmount);
                    break;
                case 3:
                    System.out.println("Exiting... Thank you for using the
banking system.");
                    return;
                default:
                    System.out.println("Invalid option. Please try
again.");
            }
        }
    }
}
}
```

Output:


"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C
Create Account:
Name: Anshuman
Account Number: 12477
Initial Balance: 999999
1. Deposit
2. Withdraw
3. Exit
Choose an option:
1
Enter deposit amount: 1
Deposit successful! Current Balance: 1000000.0
1. Deposit
2. Withdraw
3. Exit
Choose an option:
2
Enter withdrawal amount: 1
Withdrawal successful! Current Balance: 999999.0
1. Deposit
2. Withdraw
3. Exit
Choose an option:
3
Exiting... Thank you for using the banking system.
BankingSystem.java