Lab MST

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Semester:6th **Date of Performance: 07/03/2025**
Subject Name: Project Based Learning in Java with Lab **Subject Code: 22CSH-359**

1. **(a) Aim:** Create a Java program to implement a basic banking system with the following features:

Account creation (Name, Account Number,).
Deposit and withdrawal operations.
Prevent overdraft by checking the balance before withdrawal.
Input Example:
Create Account:
Name: John Doe
Account Number: 12345
Initial Balance: 1000
Deposit: 500
Withdraw: 2000
Output Example:
Deposit successful! Current Balance: 1500
Error: Insufficient funds. Current Balance: 1500

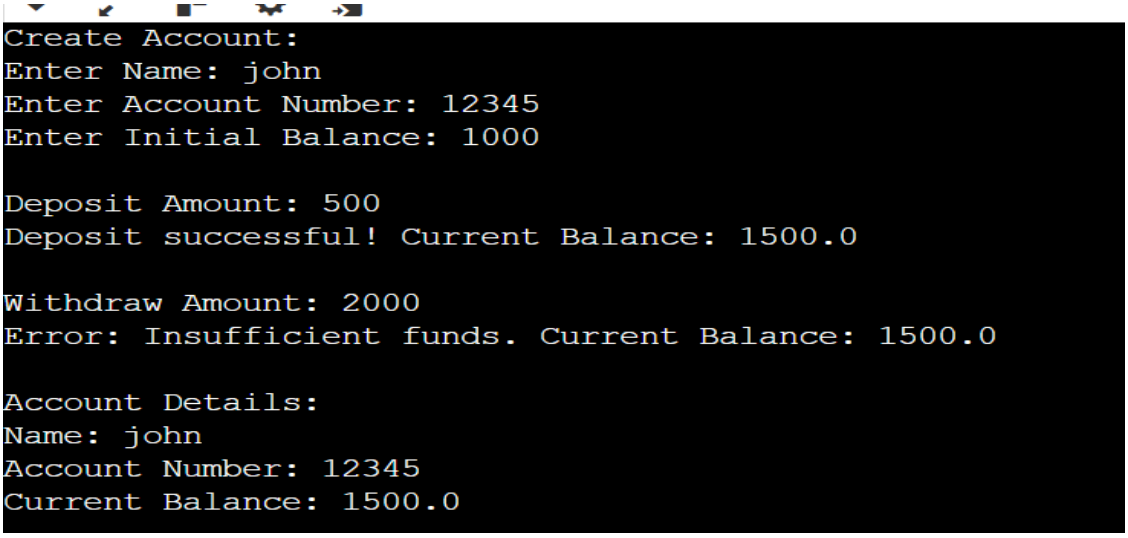
2. Implementation:

```
import java.util.Scanner;

class BankAccount {
    private String name;
    private int accountNumber;
    private double balance;
```

```
    // Constructor

    public BankAccount(String name, int accountNumber, double initialBalance)
{
        this.name = name;
        this.accountNumber = accountNumber;
        this.balance = initialBalance;
    }

    // Deposit method

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

    // Withdraw method

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

    // Display account details

    public void displayAccount() {
        System.out.println("\nAccount Details:");
        System.out.println("Name: " + name);
        System.out.println("Account Number: " + accountNumber);
        System.out.println("Current Balance: " + balance);
    }
}
```

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

        // Taking user input for account creation

        System.out.println("Create Account:");
        System.out.print("Enter Name: ");
        String name = scanner.nextLine();

        System.out.print("Enter Account Number: ");
        int accountNumber = scanner.nextInt();

        System.out.print("Enter Initial Balance: ");
        double initialBalance = scanner.nextDouble();

        // Creating the account

        BankAccount account = new BankAccount(name, accountNumber,
initialBalance);

        // Performing deposit and withdrawal

        System.out.print("\nDeposit Amount: ");
        double depositAmount = scanner.nextDouble();
        account.deposit(depositAmount);

        System.out.print("\nWithdraw Amount: ");
        double withdrawAmount = scanner.nextDouble();
        account.withdraw(withdrawAmount);

        // Displaying final account details
        account.displayAccount();

        scanner.close();
    }
}
```

3. **Output:**



4. **Learning Outcomes :**

- Understanding the concept of classes and objects
- Understanding how to model a real-world entity (bank account) as a class.
- Implementing basic banking operations (deposit, withdrawal, account information).
- Understanding the variables within a class, and within the main method.