Day2 _java Assignmant

///1.Bank operations

Program:

```
package oops;

public interface BankOperations {
   void deposit(double amount);
   void withdraw(double amount);
   void transfer(Account target, double amount);
   double checkBalance();
   void showTransactionHistory();
}
```

///2.Account:

Program:

```
package oops;

public class SavingsAccount extends Account {
   final double MIN_BALANCE = 1000;

   public SavingsAccount(String accNum, double bal) {
      super(accNum, bal);
   }

   public void deposit(double amount) {
      balance += amount;
      history.add("Deposited Rs" + amount);
```

```
    }

    public void withdraw(double amount) {
        if ((balance - amount) >= MIN_BALANCE) {
            balance -= amount;
            history.add("Withdrawn Rs" + amount);
        } else {
            System.out.println("Minimum balance ₹1000 must be maintained.");
        }
    }
}
```

///3.Savings Account

Program:

```
package oops;

public class SavingsAccount extends Account {
    final double MIN_BALANCE = 1000;

    public SavingsAccount(String accNum, double bal) {
        super(accNum, bal);
    }

    public void deposit(double amount) {
        balance += amount;
        history.add("Deposited Rs" + amount);
    }
```

```
    public void withdraw(double amount) {
        if ((balance - amount) >= MIN_BALANCE) {
            balance -= amount;
            history.add("Withdrawn Rs" + amount);
        } else {
            System.out.println("Minimum balance ₹1000 must be maintained.");
        }
    }
}
```

///4.Current Account:

Program:

```
package oops;

public class CurrentAccount extends Account {
    final double OVERDRAFT = 2000;

    public CurrentAccount(String accNum, double bal) {
        super(accNum, bal);
    }

    public void deposit(double amount) {
        balance += amount;
        history.add("Deposited Rs" + amount);
    }

    public void withdraw(double amount) {
        if ((balance - amount) >= -OVERDRAFT) {
```

```
            balance -= amount;
            history.add("Withdrawn Rs" + amount);
        } else {
            System.out.println("Overdraft limit ₹2000 exceeded.");
        }
    }
}
```

///5.Customer:

Program:

```
package oops;

import java.util.*;

public class Customer {
    private String id;
    private String name;
    private List<Account> accounts = new ArrayList<>();

    public Customer(String id, String name) {
        this.id = id;
        this.name = name;
    }

    public void addAccount(Account acc) {
        accounts.add(acc);
    }
```

```
    public String getId() {
        return id;
    }

    public List<Account> getAccounts() {
        return accounts;
    }

    public String getName() {
        return name;
    }

//6.Bankbrank:
Program:
package oops;

import java.util.*;

public class BankBranch {
    private String id;
    private String name;
    private List<Customer> customers = new ArrayList<>();

    public BankBranch(String id, String name) {
        this.id = id;
        this.name = name;
        System.out.println("Branch Created: " + name);
    }
```

```
    public void addCustomer(Customer c) {
        customers.add(c);
        System.out.println("Customer " + c.getName() + " added.");
    }

    public Customer findCustomerById(String id) {
        for (Customer c : customers) {
            if (c.getId().equals(id)) return c;
        }
        return null;
    }
}
```

//7.main:

Program:

```
package oops;

public class Main {
    public static void main(String[] args) {
        BankBranch branch = new BankBranch("B001", "Main Branch");

        Customer alice = new Customer("C001", "Alice");
        branch.addCustomer(alice);

        SavingsAccount s = new SavingsAccount("S001", 5000);
        CurrentAccount c = new CurrentAccount("C002", 2000);
```

```
        alice.addAccount(s);
        alice.addAccount(c);

        s.deposit(2000);
        c.withdraw(2500);
        s.transfer(ca, 1000);

        System.out.println("\n--- Transaction History ---");
        s.showTransactionHistory();
        c.showTransactionHistory();
    }
}
```