Assignment on Inyetrface

Objective:

To understand the basics of interfaces in Java by implementing a real-world example.

Problem Statement:

Create a Java program that simulates a simple payment system. You need to implement the Payment interface, which will be used by different payment methods like CreditCardPayment and PaypalPayment.

Instructions:

1. Create an Interface:
- Define an interface Payment with two methods:

```java
public interface Payment {
   void pay(double amount);
   void printReceipt();
}
```

2. Implement the Interface:
- Create two classes CreditCardPayment and PaypalPayment that implement the Payment interface. Each class should:
- Implement the pay method to print out a message indicating the payment method and the amount paid.
- Implement the printReceipt method to print a simple receipt message.
3. Write a Main Class:
- In the Main class, create objects of both CreditCardPayment and PaypalPayment.
- Use these objects to call the pay and printReceipt methods.

Example Code Structure:

```java
// Payment.java
public interface Payment {
   void pay(double amount);
   void printReceipt();
}

// CreditCardPayment.java
public class CreditCardPayment implements Payment {

   public void pay(double amount) {
      System.out.println("Paid " + amount + " using Credit Card.");
   }
```

```java
    public void printReceipt() {
      System.out.println("Receipt for Credit Card payment.");
    }
}

// PaypalPayment.java
public class PaypalPayment implements Payment {
   public void pay(double amount) {
      System.out.println("Paid " + amount + " using PayPal.");
   }

   public void printReceipt() {
      System.out.println("Receipt for PayPal payment.");
   }
}

// Main.java
public class Main {
   public static void main(String[] args) {
      Payment creditCardPayment = new CreditCardPayment();
      Payment paypalPayment = new PaypalPayment();

      creditCardPayment.pay(100.0);
      creditCardPayment.printReceipt();

      paypalPayment.pay(200.0);
      paypalPayment.printReceipt();
   }
}
```

Tasks:

1. Define the Payment interface.
2. Implement the CreditCardPayment and PaypalPayment classes.
3. Use these classes in a Main method to simulate a payment process.

Bonus:

• Add more payment methods like BankTransferPayment.
• Include additional methods like void cancelPayment() in the interface and implement them.

This assignment covers interface implementation, polymorphism, and basic method overriding in Java.