A:

public class DiscountCalculator {

private double dblOrderTotal;

private double dblDiscountRate;

private double dblFinalPrice;

public DiscountCalculator(double orderTotal, double discountRate) {

this.dblOrderTotal = orderTotal

this.dblDiscountRate = discountRate;

}

public double CalculateFinalPrice() {

if(dblDiscountRate < 0 || dblDiscountRate > 100) {

throw new IllegalArgumentException("Invalid discount rate");

}

dblFinalPrice = dblOrderTotal - (dblOrderTotal \* (dblDiscountRate / 100.0));

return dblFinalPrice;

}

@Override

public String toString() {

return "DiscountCalculator[OrderTotal=" + dblOrderTotal +

", DiscountRate=" + dblDiscountRate +

", FinalPrice=" + dblFinalPrice + "]";

}

public static void main(String[] args) {

DiscountCalculator calculator = new DiscountCalculator(200.0, 10.0);

double finalPrice = calculator.CalculateFinalPrice();

System.out.println("Final Price: $" + finalPrice);

System.out.println(calculator);

}

}

B:

public class DiscountCalculator {

private double dblOrderTotal;

private double dblDiscountRate;

private double dblFinalPrice;

public DiscountCalculator(double orderTotal, double discountRate) {

this.dblOrderTotal = orderTotal;

this.dblDiscountRate = discountRate;

}

public double CalculateFinalPrice() {

if(dblDiscountRate < 0 || dblDiscountRate > 100) {

throw new IllegalArgumentException("Invalid discount rate");

}

// Bug: Using '+' instead of '-' to apply discount.

dblFinalPrice = dblOrderTotal + (dblOrderTotal \* (dblDiscountRate / 100.0));

return dblFinalPrice;

}

@Override

public String toString() {

return "DiscountCalculator[OrderTotal=" + dblOrderTotal +

", DiscountRate=" + dblDiscountRate +

", FinalPrice=" + dblFinalPrice + "]";

}

public static void main(String[] args) {

DiscountCalculator calculator = new DiscountCalculator(200.0, 10.0);

double finalPrice = calculator.CalculateFinalPrice();

System.out.println("Final Price: $" + finalPrice);

System.out.println(calculator);

}

}

C:

public class DiscountCalculator {

private double dblOrderTotal; // Order total

private double dblDiscountRate; // Discount rate in percentage

private double dblFinalPrice; // Final price after discount

public DiscountCalculator(double orderTotal, double discountRate) {

this.dblOrderTotal = orderTotal;

this.dblDiscountRate = discountRate;

}

public double CalculateFinalPrice() {

if(dblDiscountRate < 0 || dblDiscountRate > 100) {

throw new IllegalArgumentException("Invalid discount rate");

}

dblFinalPrice = dblOrderTotal - (dblOrderTotal \* (dblDiscountRate / 100.0));

return dblFinalPrice;

}

@Override

public String toString() {

return "DiscountCalculator[OrderTotal=" + dblOrderTotal +

", DiscountRate=" + dblDiscountRate +

", FinalPrice=" + dblFinalPrice + "]";

}

public static void main(String[] args) {

DiscountCalculator calculator = new DiscountCalculator(200.0, 10.0);

double finalPrice = calculator.CalculateFinalPrice();

System.out.println("Final Price: $" + finalPrice);

System.out.println(calculator);

}

}

D:

public class DiscountCalculator {

private double dblOrderTotal;

private double dblDiscountRate;

private double dblFinalPrice;

public DiscountCalculator(double orderTotal, double discountRate) {

this.dblDiscountRate = discountRate;

}

public double CalculateFinalPrice() {

if(dblDiscountRate < 0 || dblDiscountRate > 100) {

throw new IllegalArgumentException("Invalid discount rate");

}

dblFinalPrice = dblOrderTotal - (dblOrderTotal \* (dblDiscountRate / 100.0));

return dblFinalPrice;

}

@Override

public String toString() {

return "DiscountCalculator[OrderTotal=" + dblOrderTotal +

", DiscountRate=" + dblDiscountRate +

", FinalPrice=" + dblFinalPrice + "]";

}

public static void main(String[] args) {

DiscountCalculator calculator = new DiscountCalculator(200.0, 10.0);

double finalPrice = calculator.CalculateFinalPrice();

System.out.println("Final Price: $" + finalPrice);

System.out.println(calculator);

}

}

E:

public class DiscountCalculator {

private double dblOrderTotal;

private double dblDiscountRate;

private double dblFinalPrice;

public DiscountCalculator(double orderTotal, double discountRate) {

this.dblOrderTotal = orderTotal;

this.dblDiscountRate = discountRate;

}

public double CalculateFinalPrice() {

if(dblDiscountRate < 0 || dblDiscountRate > 100) {

throw new IllegalArgumentException("Invalid discount rate");

}

dblFinalPrice = dblOrderTotal - (dblOrderTotal \* (dblDiscountRate / 100.0));

return dblFinalPrice;

}

@Override

public String toString() {

return "DiscountCalculator[OrderTotal=" + dblOrderTotal +

", DiscountRate=" + dblDiscountRate +

", FinalPrice=" + dblFinalPrice + "]";

}

public static void main(String[] args) {

DiscountCalculator calculator = new DiscountCalculator(200.0, 10.0);

double finalPrice = calculator.CalcFinalPrice();

System.out.println("Final Price: $" + finalPrice);

System.out.println(calculator);

}

}

F:

public class SimpleCalculator {

public double add(double dblA, double dblB) {

return dblA + dblB;

}

public double subtract(double dblA, double dblB) {

return dblA - dblB;

}

public double multiply(double dblA, double dblB) {

return dblA \* dblB;

}

public double divide(double dblA, double dblB) {

if (dblB == 0) {

throw new IllegalArgumentException("Cannot divide by zero");

}

return dblA / dblB;

}

public static void main(String[] args) {

SimpleCalculator calc = new SimpleCalculator();

System.out.println("Add: " + calc.add(10, 5));

// Bug: Incorrect method name called ("substract" instead of "subtract").

System.out.println("Subtract: " + calc.substract(10, 5));

System.out.println("Multiply: " + calc.multiply(10, 5));

System.out.println("Divide: " + calc.divide(10, 5));

}

}

G:  
public class SimpleCalculator {

public double add(double dblA, double dblB) {

return dblA + dblB;

}

public double subtract(double dblA, double dblB) {

double dblResult;

return dblResult;

}

public double multiply(double dblA, double dblB) {

return dblA \* dblB;

}

public double divide(double dblA, double dblB) {

if (dblB == 0) {

throw new IllegalArgumentException("Cannot divide by zero");

}

return dblA / dblB;

}

public static void main(String[] args) {

SimpleCalculator calc = new SimpleCalculator();

System.out.println("Add: " + calc.add(10, 5));

System.out.println("Subtract: " + calc.subtract(10, 5));

System.out.println("Multiply: " + calc.multiply(10, 5));

System.out.println("Divide: " + calc.divide(10, 5));

}

}

H:

public class SimpleCalculator {

public double add(double dblA, double dblB) {

return dblA + dblB;

}

public double subtract(double dblA, double dblB) {

return dblA - dblB;

}

public double multiply(double dblA, double dblB) {

return dblA + dblB; // Logical error: should be multiplication.

}

public double divide(double dblA, double dblB) {

if (dblB == 0) {

throw new IllegalArgumentException("Cannot divide by zero");

}

return dblA / dblB;

}

public static void main(String[] args) {

SimpleCalculator calc = new SimpleCalculator();

System.out.println("Add: " + calc.add(10, 5));

System.out.println("Subtract: " + calc.subtract(10, 5));

System.out.println("Multiply: " + calc.multiply(10, 5));

System.out.println("Divide: " + calc.divide(10, 5));

}

}

I:

public class SimpleCalculator {

public double add(double dblA, double dblB) {

return dblA + dblB;

}

public double subtract(double dblA, double dblB) {

return dblA - dblB;

}

public double multiply(double dblA, double dblB) {

return dblA \* dblB;

}

public double divide(double dblA, double dblB) {

if (dblB == 0) {

throw new IllegalArgumentException("Cannot divide by zero");

}

return dblA / dblB;

}

public static void main(String[] args) {

SimpleCalculator calc = new SimpleCalculator();

System.out.println("Add: " + calc.add(10, 5));

System.out.println("Subtract: " + calc.subtract(10, 5));

System.out.println("Multiply: " + calc.multiply(10, 5));

System.out.println("Divide: " + calc.divide(10, 5));

}

}

J:

public class SimpleCalculator {

public double add(double dblA, double dblB) {

return dblA + dblB

}

public double subtract(double dblA, double dblB) {

return dblA - dblB;

}

public double multiply(double dblA, double dblB) {

return dblA \* dblB;

}

public double divide(double dblA, double dblB) {

if (dblB == 0) {

throw new IllegalArgumentException("Cannot divide by zero");

}

return dblA / dblB;

}

public static void main(String[] args) {

SimpleCalculator calc = new SimpleCalculator();

System.out.println("Add: " + calc.add(10, 5));

System.out.println("Subtract: " + calc.subtract(10, 5));

System.out.println("Multiply: " + calc.multiply(10, 5));

System.out.println("Divide: " + calc.divide(10, 5));

}

}