

```
import java.util.Scanner;

interface Calculator {
    double add(double a, double b);
    double subtract(double a, double b);
    double multiply(double a, double b);
    double divide(double a, double b);
}

class SimpleCalculator implements Calculator {
    @Override
    public double add(double a, double b) {
        return a + b;
    }

    @Override
    public double subtract(double a, double b) {
        return a - b;
    }

    @Override
    public double multiply(double a, double b) {
        return a * b;
    }

    @Override
    public double divide(double a, double b) {
        if (b == 0) {
            System.out.println("Error: Division by zero is not allowed!");
            return Double.NaN;
        }
        return a / b;
    }
}

public class CalculatorProgram {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        Calculator calculator = new SimpleCalculator();

        System.out.print("Enter the first number: ");
        double num1 = scanner.nextDouble();
        System.out.print("Enter the second number: ");
        double num2 = scanner.nextDouble();
```

```
System.out.println("\nResults:");
System.out.println("Addition: " + calculator.add(num1, num2));
System.out.println("Subtraction: " + calculator.subtract(num1, num2));
System.out.println("Multiplication: " + calculator.multiply(num1, num2));
System.out.println("Division: " + calculator.divide(num1, num2));

scanner.close();
}
}
```

Output - Run (CalculatorProgram) X

```
--- exec:3.5.1:exec (default-cli) @ CalculatorProgram ---
Enter the first number:50
Enter the second number:90

Result:
Addition:140.0
Subtraction:-40.0
Multiplication:4500.0
Division:0.5555555555555556

-----
BUILD SUCCESS
```

```
import java.util.*;
public class Prg8 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter value of A"); int a = sc.nextInt();
        System.out.println("Enter value of B"); int b = sc.nextInt();
        a = a+b;
        b = a-b ;
        a = a-b;
        System.out.println("A = "+a+"\nB = "+b);
    }
}
```

The screenshot shows an IDE's output window titled "Output - Run (prg8)". The window displays the compilation process and the execution of the Java program. The compilation step shows "Compiling 1 source file with javac [debug release 25] to target\classes". The execution step shows the program prompting for values of A and B, receiving input "55" and "78" respectively, and then printing "A = 78" and "B = 55". The output concludes with "BUILD SUCCESS" and a total execution time of "Total time: 29.187 s".

```
com.mycompany.prg8.Prg8 >
Output - Run (prg8) x
Compiling 1 source file with javac [debug release 25] to target\classes
--- exec:3.5.1:exec (default-cli) @ prg8 ---
Enter value of A
55
Enter value of B
78
A = 78
B = 55
-----
BUILD SUCCESS
-----
Total time: 29.187 s
```

```

import java.util.*;
public class Prg9 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the sum of money invested"); int
        sum = sc.nextInt();
        double si = sum * 10 * 3 / 100.0;
        double amount =sum*Math.pow(1+(10/100.0),3);
        double ci = amount - sum;
        double dif = ci - si;
        System.out.println("Simple Interest : "+si);
        System.out.println("Compound Interest : "+ci);
        System.out.println("Difference between CI and SI : "+dif);
    }
}

```

Output - Run (prg9) ×

- Compiling 1 source file with javac [debug release 25] to target\classes
- exec:3.5.1:exec (default-cli) @ prg9 --+
 - Enter the sum of money invested
 - 1000000
 - Simple Interest : 300000.0
 - Compound Interest : 331000.00000000047
 - Difference between CI and SI : 31000.000000000466
- BUILD SUCCESS
- Total time: 12.309 s

```
import java.util.*;
public class Prg10 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the selling price of the calculators");
        double sp = sc.nextDouble();
        double cpProfit = sp/(1 + 20/100.0);
        double cpLoss = sp/(1 - 20/100.0);
        double total = cpProfit + cpLoss;
        System.out.println("The Total cost Price = \u20B9"+total);
    }
}
```

Output - Run (prg10) x

```
--- exec:3.5.1:exec (default-cli) @ prg10 ---
Enter the selling price of the calculators
400
The Total cost Price = ?833.333333333334
-----
BUILD SUCCESS
-----
```

```
import java.util.*;
public class Prg1 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter three angle of a triangle");
        int a= sc.nextInt();
        int b= sc.nextInt();
        int c = sc.nextInt();
        int total = a+b+c;
        if(total == 180){
            if (a < 90 && b <90 &&c < 90) {
                System.out.println("Acute-angled Triangle");
            }
            else if (a == 90 || b == 90 || c == 90) {
                System.out.println("Right-angled Triangle");
            }
            else {
                System.out.println("Obtuse-angled Triangle");
            }
        }else{
            System.out.println("Triangle not possible");
        }
    }
}
```

Output - Run (prg1) ×

```
Enter three angle of a triangle
45
45
90
Right-angled Triangle
-----
BUILD SUCCESS
```

```
import java.util.*;
public class Prg12 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the cost price");
        double cp = sc.nextInt();
        System.out.println("Enter the selling price");
        double sp = sc.nextInt();
        if(sp > cp){
            double profit = sp - cp;
            double profitp = profit / cp * 100.0;
            System.out.println("Profit is "+profit+"\nProfit percent is "+profitp);
        }
        else if(cp > sp){
            double loss = cp - sp;
            double losssp = loss / cp * 100.0;
            System.out.println("Loss is "+loss+"\nLoss percent is "+losssp);
        }else{
            System.out.println("Neither profit nor loss");
        }
    }
}
```

Output - Run (prg12) ×

```
--- exec:3.5.1:exec (default-cli) @ prg12 ---
Enter the cost price
1000
Enter the selling price
1100
Profit is 100.0
Profit percent is 10.0
```

```
import java.util.*;
public class Prg13 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter three numbers");
        int a= sc.nextInt();
        int b = sc.nextInt();
        int c = sc.nextInt();
        if(a == b && b == c){
            System.out.println("All the numbers are equal");
        }else{
            int d = Math.max(Math.max(a,b),c);
            System.out.println("Greatest nuber is "+d);
        }
    }
}
```

Output - Run (prg13) ×

```
Enter three numbers
67
89
90
Greatest nuber is 90
```

BUILD SUCCESS
