ASSIGNMENT DAY 2

LEVEL 2 PRACTICE PROGRAMS

1. Write a program to take 2 numbers and print their quotient and reminder

Hint => Use division operator (/) for quotient and moduli operator (%) for reminder

I/P => number1, number2

O/P => The Quotient is ___ and Reminder is ___ of two number ___ and ___

```
import java.util.Scanner;
public class Question1 {
   public static void main(String[] Args){
      Scanner scanner = new Scanner(System.in);
      float n1, n2;
      System.out.print("Enter the first number: ");
      n1 = scanner.nextInt();
      System.out.print("Enter the Second number: ");
      n2 = scanner.nextInt();
      int quotient = (int) (n1 / n2);
      float remainder = (float) n1 % n2;
      System.out.printf("The quotient is " + quotient + " and Remainder is %.2f of two
number %.2f and %.2f.", remainder, n1, n2);
   }
}
```

OUTPUT:

Enter the first number: 10

Enter the Second number: 3

The quotient is 0 and Remainder is 1.00 of two number 10.00 and 3.00.

2. Write an *IntOperation* program by taking a, b, and c as input values and print the following integer operations a + b *c, a * b + c, c + a / b, and a % b + c. Please also understand the precedence of the operators.

Hint =>

Create variables a, b, c of int data type.

Take user input for a, b, and c.

Compute 3 integer operations and assign result to a variable

Finally print the result and try to understand operator precedence.

```
import java.util.Scanner;
public class Question2 {
   public static void main(String[] Args){
      Scanner scanner = new Scanner(System.in);
      int a, b, c;
      System.out.print("Enter the value of a: ");
      a = scanner.nextInt();
      System.out.print("Enter the value of b: ");
      b = scanner.nextInt();
      System.out.print("Enter the value of c: ");
      c = scanner.nextInt();
      int r1 = a + b * c;
      int r2 = a * b + c;
      int r3 = c + a / b;
      int r4 = a % b + c;
      System.out.println(r1);
      System.out.println(r2);
      System.out.println(r3);
      System.out.println(r4);
   }
}
```

OUTPUT:

Enter the value of a: 5

Enter the value of b: 45

Enter the value of c: 13

590

238

13

18

3. Similarly, write the *DoubleOpt* program by taking double values and doing the same operations.

```
import java.util.Scanner;
public class Question3 {
   public static void main(String[] Args){
      Scanner scanner = new Scanner(System.in);
      double a, b, c;
      System.out.print("Enter the value of a: ");
      a = scanner.nextDouble();
      System.out.print("Enter the value of b: ");
      b = scanner.nextDouble();
```

```
        System.out.print("Enter the value of c: ");
        c = scanner.nextDouble();
        double r1 = a + b * c;
        double r2 = a * b + c;
        double r3 = c + a / b;
        double r4 = a % b + c;
        System.out.println(r1);
        System.out.println(r2);
        System.out.println(r3);
        System.out.println(r4);
    }
}
```

OUTPUT:

Enter the value of a: 5

Enter the value of b: 454

Enter the value of c: 21

9539.0

2291.0

21.01101321585903

26.0

4. **Write a TemperaturConversion program, given the temperature in Celsius as input outputs the temperature in Fahrenheit**

Hint =>

Create a *celsius* variable and take the temperature as user input

Use the Formulae Celsius to Fahrenheit: (°C × 9/5) + 32 = °F and assign to *farenheitResult* and print the result

```
import java.util.Scanner;
public class Question4 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        float celsius;
        System.out.println("Enter the temperature in Celsius: ");
        celsius= scanner.nextFloat();
        float fahrenheit = (celsius * 9/5) + 32;
        System.out.println(celsius + " celsius is equal to " + fahrenheit + " fahrenheit");
    }
}
```

OUTPUT:

Enter the temperature in Celsius: 35

35.0 celsius is equal to 95.0 fahrenheit

5. **Write a TemperaturConversion program, given the temperature in Fahrenheit as input outputs the temperature in Celsius**

Hint =>

Create a *fahrenheit* variable and take the user's input

User the formulae to convert Fahrenheit to Celsius: (°F − 32) x 5/9 = °C and assign the result to *celsiusResult* and print the result

```
import java.util.Scanner;
public class Question5 {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      float far;
      System.out.println("Enter the temperature in Fahrenheit: ");
      far = scanner.nextFloat();
      float celsius = (far - 32) * 5/9;
      System.out.println(far + " fahrenheit is equal to " + celsius + " celsius");
   }
}
```

OUTPUT:

Enter the temperature in Fahrenheit: 95

95.0 fahrenheit is equal to 35.0 celsius

6. **Create a program to find the total income of a person by taking salary and bonus from user**

Hint =>

Create a variable named salary and take user input.

Create another variable bonus and take user input.

Compute income by adding salary and bonus and print the result

```
import java.util.Scanner;
public class Question6 {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      int salary, bonus;
      System.out.print("Enter your salary: ");
```

```
        salary = scanner.nextInt();
        System.out.print("Enter your bonus: ");
        bonus = scanner.nextInt();
        int totalSalary = salary + bonus;
        System.out.print("The salary is INR " + salary + " and bonus is INR " + bonus + ".
Hence Total income is INR " + totalSalary);
    }
}
```

OUTPUT:

Enter your salary: 5000

Enter your bonus: 100

The salary is INR 5000 and bonus is INR 100. Hence Total income is INR 5100

7. Create a program to swap two numbers

Hint => Create a variable number1 and take user input.

Create a variable number2 and take user input.

Swap number1 and number2 and print the swapped output

```
import java.util.Scanner;
public class Question7 {
    public static void main(String[] Args){
        Scanner scanner = new Scanner(System.in);
        int a, b;
        System.out.print("Enter the first number: ");
        a = scanner.nextInt();
        System.out.print("Enter the Second number: ");
        b = scanner.nextInt();
        a = a + b;
        b = a - b;
        a = a - b;
        System.out.println("A: " + a);
        System.out.println("B: " + b);
    }
}
```

OUTPUT:

Enter the first number: 13

Enter the Second number: 17

A: 17

B: 13

8. Rewrite the Sample Program 2 with user inputs

Hint =>

Create variables and take user inputs for name, fromCity, viaCity, toCity

Create variables and take user inputs for distances fromToVia and viaToFinalCity in Miles

Create Variables and take time taken

- ```
  import java.util.Scanner;
  public class Question8 {
     public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter your name: ");
        String name = scanner.nextLine();
        System.out.print("Enter your starting city: ");
        String fromCity = scanner.nextLine();
        System.out.print("Enter the city you will travel via: ");
        String viaCity = scanner.nextLine();
        System.out.print("Enter your final destination city: ");
        String toCity = scanner.nextLine();
        System.out.print("Enter the distance from " + fromCity + " to " + viaCity + " (in
  miles): ");
        double fromToVia = scanner.nextDouble();
        System.out.print("Enter the distance from " + viaCity + " to " + toCity + " (in miles):
  ");
        double viaToFinalCity = scanner.nextDouble();
        System.out.print("Enter the total time taken for the journey (in hours): ");
        double timeTaken = scanner.nextDouble();
        double totalDistance = fromToVia + viaToFinalCity;
        double averageSpeed = totalDistance / timeTaken;
        System.out.println("Travel Details for " + name );
        System.out.println("Starting City: " + fromCity);
        System.out.println("Via City: " + viaCity);
        System.out.println("Destination City: " + toCity);
        System.out.println("Total Distance Traveled: " + totalDistance + " miles");
        System.out.printf("Average Speed: %.2f miles per hour%n", averageSpeed);
     }
  }
  ```

OUTPUT:

Enter your name: Alex Park

Enter your starting city: New York

Enter the city you will travel via: Seattle

Enter your final destination city: Canada
  ```

Enter the distance from New York to Seattle (in miles): 500

Enter the distance from Seattle to Canada (in miles): 750

Enter the total time taken for the journey (in hours): 17

Travel Details for Alex Park

Starting City: New York

Via City: Seattle

Destination City: Canada

Total Distance Traveled: 1250.0 miles

Average Speed: 73.53 miles per hour

9. An athlete runs in a triangular park with sides provided as input by the user in meters. If the athlete wants to complete a 5 km run, then how many rounds must the athlete complete

Hint => The perimeter of a triangle is the addition of all sides and rounds is distance/perimeter

I/P => side1, side2, side3

O/P => The total number of rounds the athlete will run is ___ to complete 5 km

```
import java.util.Scanner;
public class Question9 {
   public static void main(String[] Args){
      Scanner scanner = new Scanner(System.in);
      int side1, side2, side3, distance;
      System.out.print("Enter the value of side1: ");
      side1 = scanner.nextInt();
      System.out.print("Enter the value of side2: ");
      side2 = scanner.nextInt();
      System.out.print("Enter the value of side3: ");
      side3 = scanner.nextInt();
      System.out.print("Enter the distance to be covered: ");
      distance = scanner.nextInt();
      int perimeter = side1 + side2 + side3;
      int rounds = distance/perimeter;
      System.out.printf("The total number of rounds the athlete will run is " + rounds + " to
complete " + distance + " km");
   }
}
```

OUTPUT:

Enter the value of side1: 1

Enter the value of side2: 1

Enter the value of side3: 1

Enter the distance to be covered: 6

The total number of rounds the athlete will run is 2 to complete 6 km

10. Create a program to divide N number of chocolates among M children.

Hint =>

Get an integer value from user for the numberOfchocolates and numberOfChildren.

Find the number of chocolates each child gets and number of remaining chocolates

Display the results

```
import java.util.Scanner;
public class Question10 {
   public static void main(String[] Args){
      Scanner scanner = new Scanner(System.in);
      int noc, students;
      System.out.print("Enter the number of chocolates: ");
      noc = scanner.nextInt();
      System.out.print("Enter the number of students: ");
      students = scanner.nextInt();
      int qoc = noc/ students;
      int rem = noc % students;
      System.out.println("The number of chocolates each child gets is " + qoc + " and the
number of remaining chocolates are " + rem);
   }
}
```

OUTPUT:

Enter the number of chocolates: 50

Enter the number of students: 9

The number of chocolates each child gets is 5 and the number of remaining chocolates are 5

11. Write a program to input the Principal, Rate, and Time values and calculate Simple Interest.

Hint => Simple Interest = Principal * Rate * Time / 100

I/P => principal, rate, time

```
import java.util.Scanner;
public class Question11 {
```

```
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int principal, rate, time;
        System.out.print("Enter the Principal Amount: ");
        principal = scanner.nextInt();
        System.out.print("Enter the rate of interest: ");
        rate = scanner.nextInt();
        System.out.print("Enter the time: ");
        time = scanner.nextInt();
        float SI = (float) (principal * rate * time) / 100;
        System.out.println("The Simple Interest is  " + SI + " for the principal " + principal + ".
Rate of interest " + rate + " and time " + time);
    }
}
```

OUTPUT:

Enter the Principal Amount: 10000

Enter the rate of interest: 15

Enter the time: 10

The Simple Interest is 15000.0 for the principal 10000. Rate of interest 15 and time 10

12. Create a program to convert weight in pounds to kilograms.

Hint => 1 pound = 2.2 kg

I/P => weight

O/P => The weight of the person in pound is ___ and in kg is ___

```
import java.util.Scanner;
public class Question12 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        float weight;
        System.out.print("Enter your weight: ");
        weight = scanner.nextInt();
        float kg = (float) (weight / 2.2);
        System.out.println("The weight of the person in pound is " + weight + " in kg is " + kg );
    }
}
```

OUTPUT:

Enter your weight: 145

The weight of the person in pound is 145.0 in kg is 65.90909