Level 3 Practice Programs

1. Write a Temperature Conversion program, given the temperature in Celsius as input outputs the temperature in Fahrenheit.

```java
import java.util.Scanner;
public class Temp{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        float celsius;
        float farenheit;
        System.out.print("Enter the temperature in Celsius : ");
        celsius = input.nextInt();

        //Conversion
        farenheit = (celsius * 9/5) + 32;

        //Printing Output
        System.out.println("The " +celsius+ " C is " +farenheit+ " F");
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Temp.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Temp
Enter the temperature in Celsius : 26
The 26.0 C is 78.8 F
```

2. Write a Temperature Conversion program, given the temperature in Fahrenheit as input outputs the temperature in Celsius.

```java
import java.util.Scanner;
public class Temp_2{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        float celsius;
        float farenheit;
        System.out.print("Enter the temperature in Farenheit : ");
        farenheit = input.nextInt();

        //Conversion
        celsius = (farenheit - 32) * 5/9;

        //Printing Output
        System.out.println("The " +farenheit+ " F is " +celsius+ " C");
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Temp_2.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Temp_2
Enter the temperature in Farenheit : 79
The 79.0 F is 26.11111 C
```

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

```java
import java.util.Scanner;
public class Salary{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Delcaring Variables
        int original_salary, bonus, total_salary;
        System.out.print("Enter the salary : ");
        original_salary = input.nextInt();
        System.out.print("Enter the bonus : ");
        bonus = input.nextInt();

        total_salary = original_salary + bonus;

        System.out.println("The salary is INR " +original_salary+ " and bonus is INR " +bonus+ ". Hence Total Income is INR " +total_salary);
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Salary.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Salary
Enter the salary : 50000
Enter the bonus : 35000
The salary is INR 50000 and bonus is INR 35000. Hence Total Income is INR 85000
```

4. Create a program to swap two numbers.

```java
import java.util.Scanner;
public class Swap{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        int n1, n2, temp;
        System.out.print("Enter 1st number : ");
        n1 = input.nextInt();
        System.out.print("Enter 2nd number : ");
        n2 = input.nextInt();

        temp = n1;
        n1 = n2;
        n2 = temp;

        System.out.println("The swaped numbers are " +n1+ " and " +n2);
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Swap.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Swap
Enter 1st number : 13
Enter 2nd number : 28
The swaped numbers are 28 and 13
```

5. Rewrite the Sample Program 2 with user inputs.

```java
import java.util.Scanner;
public class Travel{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        System.out.print("Enter your name : ");
        String name = input.nextLine();
        System.out.print("Enter the city you are travelling from : ");
        String fromCity = input.nextLine();
        System.out.print("Enter the city you are travelling via : ");
        String viaCity = input.nextLine();
        System.out.print("Enter the city you are travelling to : ");
        String toCity = input.nextLine();
        System.out.print("Enter the distance from " +fromCity+ " to " +viaCity+ " in miles : ");
        double fromToVia = input.nextDouble();
        System.out.print("Enter the distance from " +viaCity+ " to " +toCity+ " in miles : ");
        double viaToFinalCity = input.nextDouble();
        double totalDistance = fromToVia + viaToFinalCity;
        System.out.print("Enter the time taken for your journey in hours : ");
        double time = input.nextDouble();
        System.out.print("Enter the fee : ");
        double fee = input.nextDouble();
        System.out.print("Enter the discount percentage : ");
        double discount = input.nextDouble();
        double discount_amount = (fee*discount)/100;
        double finalFee = fee - discount_amount;
        System.out.println("Passenger " +name+ " is travelling from " +fromCity+ " to " +toCity+ " via " +viaCity+ ".");
        System.out.println("The Total distance is " +totalDistance+ " miles, will be covered in " +time+ " hours.");
        System.out.println("The fee for ticket paid is INR " +discount_amount+ ".");
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Travel.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Travel
Enter your name : Shounak
Enter the city you are travelling from : Vapi
Enter the city you are travelling via : Valsad
Enter the city you are travelling to : Surat
Enter the distance from Vapi to Valsad in miles : 234
Enter the distance from Valsad to Surat in miles : 367
Enter the time taken for your journey in hours : 6
Enter the fee : 4500
Enter the discount percentage : 25
Passenger Shounak is travelling from Vapi to Surat via Valsad.
The Total distance is 601.0 miles, will be covered in 6.0 hours.
The fee for ticket paid is INR 1125.0.
```

6. 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.

```java
import java.util.Scanner;
public class Athlete{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        float r, l1, l2, l3, p, d=5000;
        System.out.print("Enter the length of 1st side of triangular park in meters : ");
        l1 = input.nextFloat();
        System.out.print("Enter the length of 2nd side of triangular park in meters : ");
        l2 = input.nextFloat();
        System.out.print("Enter the length of 3rd side of triangular park in meters : ");
        l3 = input.nextFloat();

        //Calculating
        p = l1 + l2 + l3;
        r = d/p;

        //Printing Output
        System.out.println("The total number of rounds an athlete will run is " +r+ " to complete 5km");
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Athlete.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Athlete
Enter the length of 1st side of triangular park in meters : 650
Enter the length of 2nd side of triangular park in meters : 320
Enter the length of 3rd side of triangular park in meters : 490
The total number of rounds an athlete will run is 3.4246576 to complete 5km
```

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

```java
import java.util.Scanner;
public class Chocolates{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int num_choco, num_chil, div_choco, rem_choco;
        System.out.print("Enter the total number of chocolates available : ");
        num_choco = input.nextInt();
        System.out.print("Enter the total number of children present : ");
        num_chil = input.nextInt();

        //Calculating
        div_choco = num_choco / num_chil;
        rem_choco = num_choco % num_chil;

        //Printing output
        System.out.println("The number of chocolates each child gets is " +div_choco+ " and the number of remaining chocolates are " +rem_choco+ ".");
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Chocolates.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Chocolates
Enter the total number of chocolates available : 55
Enter the total number of children present : 6
The number of chocolates each child gets is 9 and the number of remaining chocolates are 1.
```

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

```java
import java.util.Scanner;
public class SimpleInterest{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        double principle, rate, time, simple_interest;
        System.out.print("Enter the principle amount : ");
        principle = input.nextDouble();
        System.out.print("Enter the rate : ");
        rate = input.nextDouble();
        System.out.print("Enter the time in hours : ");
        time = input.nextDouble();

        //Calculation
        simple_interest = (principle*rate*time)/100;

        //Printing Output
        System.out.println("The Simple Interest is " +simple_interest+ " for Principal amount INR " +principle+ ", Rate of Interest INR " +rate+ " and Time " +time+ " hours");
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac SimpleInterest.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java SimpleInterest
Enter the principle amount : 50000
Enter the rate : 2300
Enter the time in hours : 5
The Simple Interest is 5750000.0 for Principal amount INR 50000.0, Rate of Interest INR 2300.0 and Time 5.0 hours
```

9. Create a program to find the maximum number of handshakes among N number of students.

```java
import java.util.Scanner;
public class Handshakes{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        int num_stud, handshakes;
        System.out.print("Enter the number of students present : ");
        num_stud = input.nextInt();

        //Calculations
        handshakes = (num_stud*(num_stud-1))/2;

        //Printing Output
        System.out.println("The number of possible handshakes : " +handshakes+ ".");
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Handshakes.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Handshakes
Enter the number of students present : 48
The number of possible handshakes : 1128.
```

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

```java
import java.util.Scanner;
public class Weight{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        //Declaring Variables
        double wt_p, wt_kg;
        System.out.print("Enter the weight in pounds : ");
        wt_p = input.nextDouble();

        //Calculation
        wt_kg = wt_p*0.45;

        //Printing Output
        System.out.println("The weight of the person in pound is " +wt_p+ " and in kg is " +wt_kg+ ".");
    }
}
```

```
C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>javac Weight.java

C:\Users\Shounak Roy\Desktop\JAVA\LEVEL 3>java Weight
Enter the weight in pounds : 68
The weight of the person in pound is 68.0 and in kg is 30.6.
```