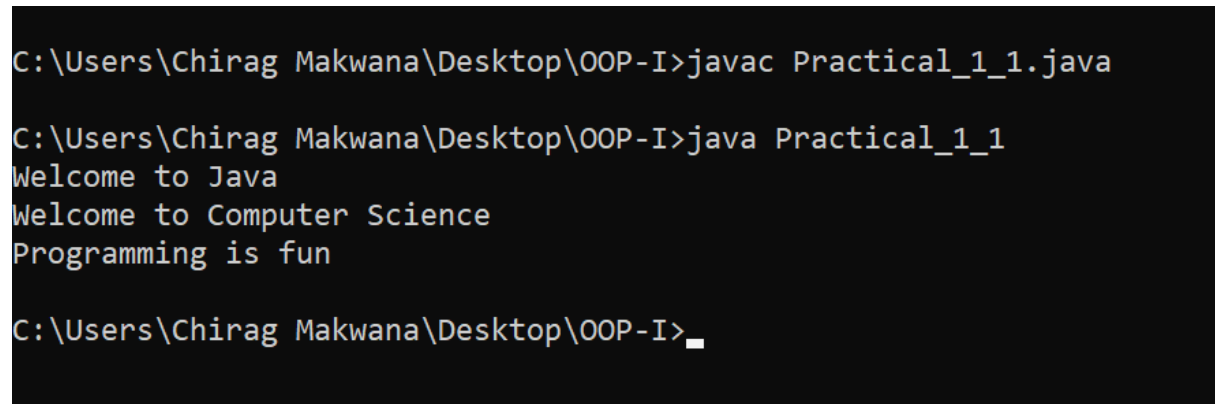# Practical – 1

I) Aim: Write a Program that displays Welcome to Java, Learning Java Now and Programming is fun- your name

Program:

```
class Practical_1_1 {

  public static void main(String[] args) {

    System.out.println("Welcome to Java");

    System.out.println("Welcome to Computer Science");

    System.out.println("Programming is fun");

  }

}
```

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac Practical_1_1.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java Practical_1_1
Welcome to Java
Welcome to Computer Science
Programming is fun

C:\Users\Chirag Makwana\Desktop\OOP-I>_
```
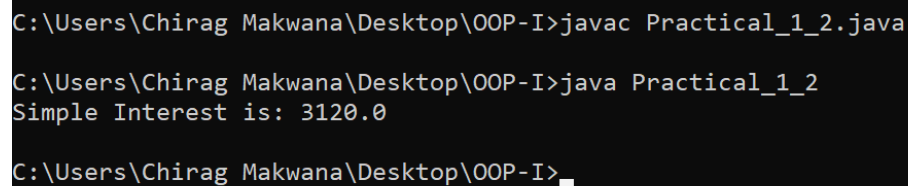
II) Aim: Write a Java Program to calculate simple interest.

Program:

```
class Practical_1_2
{
  public static void main (String args[])
```

```
    {
        float p, r,  n,  si;
      p = 13000;
        r = 12;
        n = 2;
      si  = (p*r*n)/100;
      System.out.println("Simple Interest is: " +si);
    }
}
```

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac Practical_1_2.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java Practical_1_2
Simple Interest is: 3120.0

C:\Users\Chirag Makwana\Desktop\OOP-I>_
```
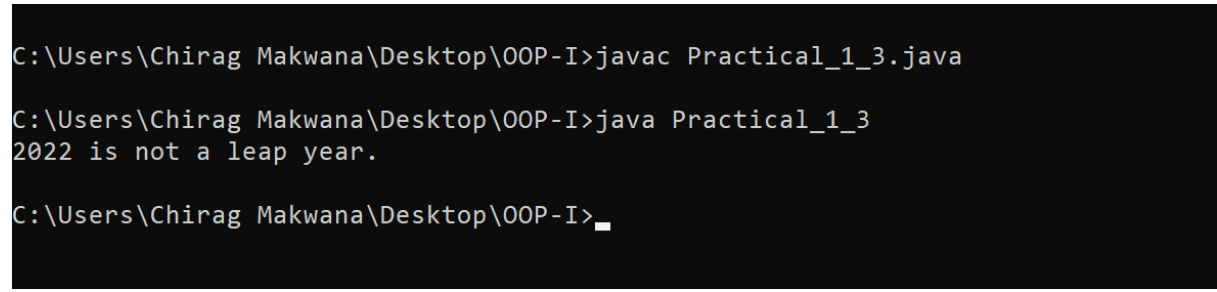
III) Aim: Write a Java Program to check Leap Year.

Program:

```
public class Practical_1_3 {
  public static void main(String[] args) {


    int year = 2022;
    boolean leap = false;
    if (year % 4 == 0)
        leap = true;
    else
```

```
      leap = false;
  if (leap)
    System.out.println(year + " is a leap year.");
  else
    System.out.println(year + " is not a leap year.");
 }
}
```

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac Practical_1_3.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java Practical_1_3
2022 is not a leap year.

C:\Users\Chirag Makwana\Desktop\OOP-I>_
```

IV) Aim: Write a Java Program to add two binary numbers.

Program:

```
import java.util.Scanner;
public class Practical_1_4 {
        public static void main(String[] args) {
                long b1, b2;
                int i = 0, carry = 0;
                int[] sum = new int[10];
                Scanner scanner = new Scanner(System.in);
                System.out.print("Enter first binary number: ");
                b1 = scanner.nextLong();
                System.out.print("Enter second binary number: ");
```

```
                b2 = scanner.nextLong();

                scanner.close();

                while (b1 != 0 || b2 != 0) {

                        sum[i++] = (int) ((b1 % 10 + b2 % 10 + carry) % 2);

                        carry = (int) ((b1 % 10 + b2 % 10 + carry) / 2);

                        b1 = b1 / 10;

                        b2 = b2 / 10;

                }

                if (carry != 0) {

                        sum[i++] = carry;

                }

                --i;

                System.out.print("Output: ");

                while (i >= 0) {

                        System.out.print(sum[i--]);

                }

                System.out.print("\n");

        }

}
```

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac Practical_1_4.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java Practical_1_4
Enter first binary number: 11101
Enter second binary number: 10010
Output: 101111

C:\Users\Chirag Makwana\Desktop\OOP-I>_
```

Practical – 3

I) Aim: Create a class named **Product** with instance variables MRP and QUANTITY and methods   display (), setdata (). In display () method, display the instance variables value (MRP and QUANTITY). And in setdata () method set the instance variable values (MRP and QUANTITY)).

Program:

```java
import java.util.Scanner;

class Practical_3_1{

int MRP;

int QUANTITY;

Practical_3_1(){

  System.out.println("Welcome to Super market...");

}

void setData(int MRP,int QUANTITY){

this.MRP=MRP;

this.QUANTITY=QUANTITY;

}

void display(){

System.out.println("=====================");

System.out.println("The mrp of a product is : "+MRP);

System.out.println("The quantity of a product is : "+QUANTITY);

System.out.println("=====================");

}

}

class TestProduct1{

public static void main(String[] args){
```

```
        Scanner sc = new Scanner(System.in);

        Practical_3_1 p = new Practical_3_1();

        System.out.println("Enter the MRP of a product : ");

        int a = sc.nextInt();

        System.out.println("Enter the QUANTITY of a product : ");

        int b = sc.nextInt();

        p.setData(a,b);

        p.display();
}
}
```

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac TestProduct1.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java TestProduct1
Welcome to Super market...
Enter the MRP of a product :
100
Enter the QUANTITY of a product :
10
=====================
The mrp of a product is : 100
The quantity of a product is : 10
=====================

C:\Users\Chirag Makwana\Desktop\OOP-I>_
```

II) Aim: Create a class named **Account** with instance variables Ac_No,Name and Balance and methods display (), setdata (),deposit(). In display () method, display the instance variables value (Ac_No,Name and Balance). And in setdata () method set the instance variable values (Ac_No,Name and Balance) and in deposit() method the amount that user wants to deposit that will be deposited.

Program:

```java
import java.util.Scanner;
class Practical_3_2{
Scanner sc = new Scanner(System.in);
int Ac_No;
String Name;
int Balance;
 Practical_3_2(){
  System.out.println("Welcome to Bank...");
}
void setData(){
System.out.println("Enter the Account Number");
Ac_No = sc.nextInt();
System.out.println("Enter the Name");
Name = sc.next();
System.out.println("Enter the Balance");
Balance = sc.nextInt();
}
void display(){
    System.out.println("=================");
    System.out.println("Account number is : "+Ac_No);
    System.out.println("Account Name is : "+Name);
    System.out.println("Account Balance is : "+Balance);
    System.out.println("=================");
}
public void deposit(){
System.out.println("Enter the value you want to Deposit..");
```

```
int r1=sc.nextInt();

Balance=Balance+r1;

System.out.println("Value Deposited Successfully...");

}

}

class TestAccount1{

public static void main(String []args)

{

Practical_3_2 a1=new Practical_3_2();

a1.setData();

a1.display();

a1.deposit();

a1.display();

}

}
```

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac TestAccount1.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java TestAccount1
Welcome to Bank...
Enter the Account Number
973842
Enter the Name
Chirag
Enter the Balance
3200
=================
Account number is : 973842
Account Name is : Chirag
Account Balance is : 3200
=================
Enter the value you want to Deposit..
2000
Value Deposited Successfully...
=================
Account number is : 973842
Account Name is : Chirag
Account Balance is : 5200
=================

C:\Users\Chirag Makwana\Desktop\OOP-I>_
```

III) Aim: Create a class named **Student** with static variable Enrollment no. and instance variable Name and methods display (), setdata (). in display () method, display the variables value (Enrollment no. and Name). And in setdata () method set the variable values (Enrollment no. and Name).

Program:

```
import java.util.Scanner;

class Practical_3_3{

Scanner sc = new Scanner(System.in);

int Er_No;

String Name;

Practical_3_3(){

System.out.println("Welcome to Student-Information System...");

}

void setData(){

System.out.println("Enter the Er_No");

Er_No = sc.nextInt();

System.out.println("Enter the Name");

Name = sc.next();

}

void display(){

  System.out.println("================");

  System.out.println("Enrollment Number is : "+Er_No);

  System.out.println("Student Name is : "+Name);

  System.out.println("================");

}

}
```

```
class TestStudent1{

public static void main(String []args)

{

Practical_3_3 a1=new Practical_3_3();

a1.setData();

a1.display();

}

}
```

Output:


```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac TestStudent1.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java TestStudent1
Welcome to Student-Information System...
Enter the Er_No
6044
Enter the Name
Chirag
================
Enrollment Number is : 6044
Student Name is : Chirag
================

C:\Users\Chirag Makwana\Desktop\OOP-I>
```

Practical – 4

I) Aim: Create a default constructor of class Product to print-"Welcome to Super-Market." And parameterized constructor to get the values of variables. (using Command Line Arguments)

Program:

```java
import java.util.Scanner;

class Practical_4_1{

int MRP;

int QUANTITY;

Practical_4_1(){

  System.out.println("Welcome to Super market...");

}

void setData(int MRP,int QUANTITY){

this.MRP=MRP;

this.QUANTITY=QUANTITY;

}

void display(){

System.out.println("=====================");

System.out.println("The mrp of a product is : "+MRP);

System.out.println("The quantity of a product is : "+QUANTITY);

System.out.println("=====================");

}

}

class TestProduct{

public static void main(String[] args){

    int a = Integer.parseInt(args[0]);

    int b = Integer.parseInt(args[1]);
```
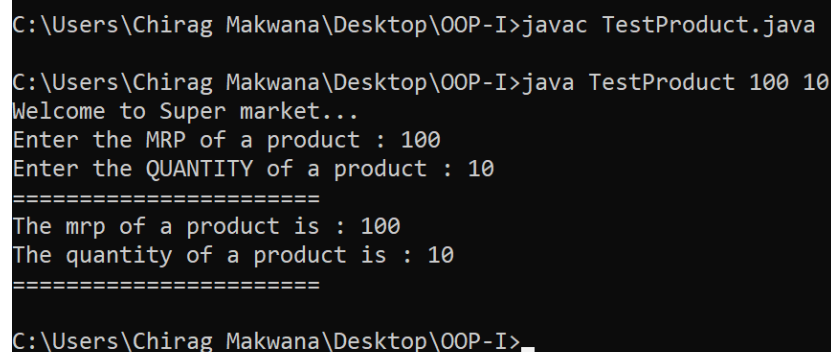
```
    Practical_4_1 p = new Practical_4_1();

    System.out.println("Enter the MRP of a product : "+a);

    System.out.println("Enter the QUANTITY of a product : "+b);

    p.setData(a,b);

    p.display();

}

}
```

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac TestProduct.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java TestProduct 100 10
Welcome to Super market...
Enter the MRP of a product : 100
Enter the QUANTITY of a product : 10
======================
The mrp of a product is : 100
The quantity of a product is : 10
======================

C:\Users\Chirag Makwana\Desktop\OOP-I>_
```

II) Aim: Create a default constructor of class Account to print-"Welcome to Bank." And parameterized constructor to get the values of variables. (Using Command Line Argument).

Program:

import java.util.Scanner;

class Practical_4_2{

int Ac_No;

String Name;

int Balance;

 Practical_4_2(){

  System.out.println("Welcome to Bank...");

}

```
Practical_4_2(int a,String b,int c)
{
Ac_No=a;
Name=b;
Balance=c;
}
void display(){
    System.out.println("=================");
    System.out.println("Account number is : "+Ac_No);
    System.out.println("Account Name is : "+Name);
    System.out.println("Account Balance is : "+Balance);
    System.out.println("=================");
}
public void deposit(){
Scanner sc=new Scanner(System.in);
System.out.println("Enter the value you want to Deposit..");
int r1=sc.nextInt();
Balance=Balance+r1;
System.out.println("Value Deposited Successfully...");
}
}
class TestAccount{
public static void main(String []args)
{
int a=Integer.parseInt(args[0]);
String b=args[1];
```
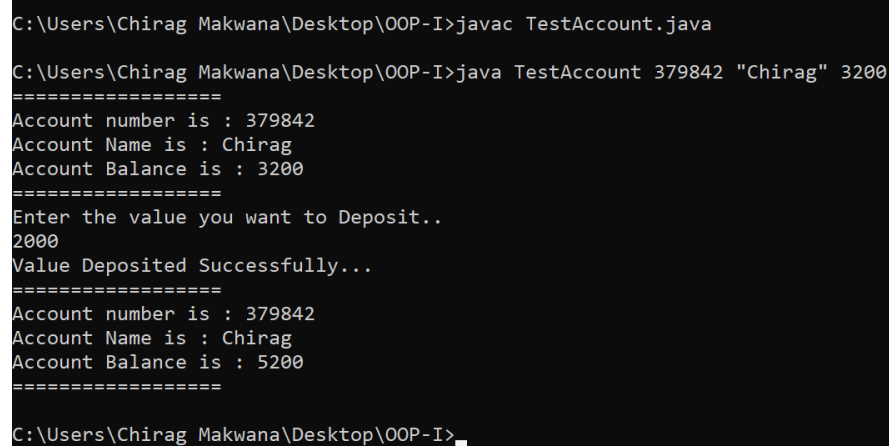
int c=Integer.parseInt(args[2]);

Practical_4_2 a1=new Practical_4_2(a,b,c);

a1.display();

a1.deposit();

a1.display();

}

}

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac TestAccount.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java TestAccount 379842 "Chirag" 3200
=================
Account number is : 379842
Account Name is : Chirag
Account Balance is : 3200
=================
Enter the value you want to Deposit..
2000
Value Deposited Successfully...
=================
Account number is : 379842
Account Name is : Chirag
Account Balance is : 5200
=================

C:\Users\Chirag Makwana\Desktop\OOP-I>_
```

III) Aim: Create a default constructor of class Student to print-"Welcome to Student-Information system." And parameterized constructor to get the values of variables (Enrollment no. and Name). (using Command Line Arguments)

Program:

import java.util.Scanner;

class Practical_4_3{

int Er_No;

String Name;

Practical_4_3()

System.out.println("Welcome to Student-Information System...");

Practical_4_3(int a,String b){

```java
Er_No=a;

Name=b;

}

void display(){

    System.out.println("================");

    System.out.println("Enrollment Number is : "+Er_No);

    System.out.println("Student Name is : "+Name);

    System.out.println("================");

}

}

class TestStudent{

public static void main(String []args){

Scanner sc=new Scanner(System.in);

int a=Integer.parseInt(args[0]);

String b=args[1];

Practical_4_3 a2=new Practical_4_3();

Practical_4_3 a1=new Practical_4_3(a,b);

a1.display();

}

}
```

Output:

```
C:\Users\Chirag Makwana\Desktop\OOP-I>javac TestStudent.java

C:\Users\Chirag Makwana\Desktop\OOP-I>java TestStudent 6044 "Chirag"
Welcome to Student-Information System...
================
Enrollment Number is : 6044
Student Name is : Chirag
================
```