

## Assignment-II

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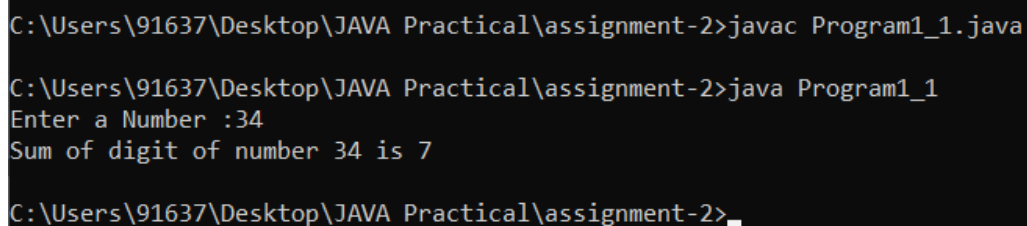
RollNo-404035

/\*1. Write a java program to find following using looping and decision making without function

I. Sum of all digits of any numbers \*/

```
import java.util.Scanner;

class Program1_1
{
    public static void main(String[] args)
    {
        int number,num,sum=0;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a Number :");
        num=sc.nextInt();
        number=num;
        while (num!=0)
        {
            sum+=num%10;
            num=num/10;
        }
        System.out.println("Sum of digit of number "+number+" is "+sum);
        sc.close();
    }
}
```



```
C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_1.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_1
Enter a Number :34
Sum of digit of number 34 is 7
C:\Users\91637\Desktop\JAVA Practical\assignment-2>_
```

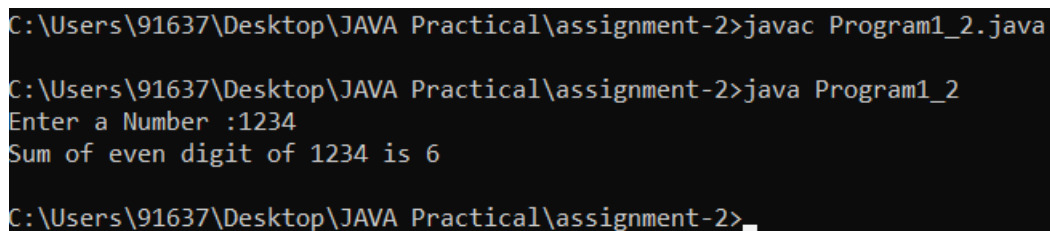
II-/\* Sum of all even digits of any number \*/

```
import java.util.Scanner;
```

```

public class Program1_2 {
    public static void main(String[] args) {
        int number,num,sum=0,t;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a Number :");
        num=sc.nextInt();
        number=num;
        while (num!=0)
        {
            t=num%10;
            if(t%2==0)
            {
                sum=sum+t;
            }
            num=num/10;
        }
        System.out.println("Sum of even digit of "+number+" is "+sum);
        sc.close();
    }
}

```



```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_2.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_2
Enter a Number :1234
Sum of even digit of 1234 is 6
C:\Users\91637\Desktop\JAVA Practical\assignment-2>_

```

III- /\* Sum of all odd digits of any number \*/

```

import java.util.Scanner;

public class Program1_3 {
    public static void main(String[] args) {
        int number,num,sum=0,t;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a Number :");
        num=sc.nextInt();
        number=num;
        while(num!=0)

```

```

{
    t=num%10;
    if(t%2!=0)
    {
        sum=sum+t;
    }
    num=num/10;
}
System.out.println("Sum of odd digit of "+number+" is "+sum);
sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_3.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_3
Enter a Number :2345
Sum of odd digit of 2345 is 8
C:\Users\91637\Desktop\JAVA Practical\assignment-2>

```

IV- /\* Sum of all prime digits of any number \*/

```

import java.util.Scanner;

public class Program1_4 {
    public static void main(String[] args) {
        int number,num,sum=0,t;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a Number :");
        num=sc.nextInt();
        number=num;
        while(num!=0)
        {
            int count=0;
            t=num%10;
            for(int i=1;i<=t;i++)
            {
                if(t%i==0)
                {
                    count++;
                }
            }
        }
    }
}

```

```

    }
}
if(count==2)
{
    sum=sum+t;
}
num=num/10;
}
System.out.println("Sum of prime digit of "+number+" is "+sum);
sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_4.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_4
Enter a Number :4325
Sum of prime digit of 4325 is 10
C:\Users\91637\Desktop\JAVA Practical\assignment-2>

```

V-/\* Difference between average of all even digits except divisible by 4 and average of all odd digits except divisible by 3 \*/

```

import java.util.Scanner;

public class Program1_5 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int number,num,esum=0,osum=0,even=0,odd=0;
        float avgeven,avgodd,diff;
        System.out.print("Enter a Number :");
        num=sc.nextInt();
        number=num;
        while(num!=0)
        {
            int t = num%10;
            if((t%2==0 && t/4!=0)
            {
                esum=esum+t;
                even++;
            }
        }
    }
}

```

```

    }
    if(t%2!=0 && t/3!=0)
    {
        osum=osum+t;
        odd++;
    }
    num=num/10;
}
avgeven=esum/even;
avgodd=osum/odd;
diff=avgeven-avgodd;

System.out.println(" Difference between average of all even digits except divisible by 4 and \n
average of all odd digits except divisible by 3  of number "+number+" is "+diff);

sc.close();

}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_5.java

C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_5
Enter a Number :6543
Difference between average of all even digits except divisible by 4 and
average of all odd digits except divisible by 3  of number 6543 is 1.0

C:\Users\91637\Desktop\JAVA Practical\assignment-2>_

```

VI-

/\*Find kth digit from front side or back side of any digits number

and find its positional value \*/

```
import java.util.Scanner;
```

```
public class Program1_6 {
```

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

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

```
        long num, temp;
```

```
        int k, length;
```

```
        String choice;
```

```

System.out.print("Enter the number: ");
num = in.nextInt();
System.out.print("Enter the choice to choose the number from f for Front side and b for Back side:
");
choice = in.next();
System.out.print("Enter the position: ");
k = in.nextInt();

temp = num;
length = 0;
while (temp != 0) {
    length++;
    temp /= 10;
}
if (length < k) {
    System.out.println("Index is out of range!!");
    System.exit(0);
}
temp = num;

long positionValue = 1, placeValue = 0;

switch (choice.toLowerCase()) {
    case "f":
    case "front":

        positionValue = 0;
        placeValue = 0;

        for (int count = 1; count <= k; count++) {
            positionValue = positionValue == 0 ? 1 : positionValue * 10;
            placeValue = temp % 10;
            temp /= 10;
        }

```

```
System.out.println(
    "The kth digit from the front is " + placeValue + " having the place value "
    + (placeValue * positionValue));
break;
```

```
case "b":
```

```
case "back":
```

```
    long t = num;
```

```
    temp = 0;
```

```
    positionValue = 1;
```

```
    while (t > 0) {
```

```
        temp = (temp * 10) + (t % 10);
```

```
        t /= 10;
```

```
        positionValue *= 10;
```

```
    }
```

```
    placeValue = 0;
```

```
    for (int count = 1; count <= k; count++) {
```

```
        positionValue /= 10;
```

```
        placeValue = temp % 10;
```

```
        temp /= 10;
```

```
    }
```

```
    System.out.println(
```

```
        "The kth digit from the back is " + placeValue + " having the place value "
```

```
        + (placeValue * positionValue));
```

```
    break;
```

```
default:
```

```
    System.out.println("Invalid Input!!!");
```

```
}
```

```
in.close();
```

```
}
```

```
}
```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_6.java

C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_6
Enter the number: 7656
Enter the choice to choose the number from f for Front side and b for Back side: f
Enter the position: 3
The kth digit from the front is 6 having the place value 600

```

VII-/\* Sum of product of consecutive digits of any digit number\*/

```

import java.util.Scanner;

public class Program1_7 {

    public static void main(String args[]){

        int num,number,d1,d2,sum=0;

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a number : ");

        num = sc.nextInt();

        number=num;

        while(num != 0)

        {

            d1 = num%10;

            num = num/10;

            d2 = num%10;

            sum = sum + (d1*d2);

        }

        System.out.println("Sum of product of consecutive digits of "+number+" is : "+sum);

        sc.close();

    }

}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_7.java

C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_7
Enter a number : 6543
Sum of product of consecutive digits of 6543 is : 62

C:\Users\91637\Desktop\JAVA Practical\assignment-2>

```

VIII-/\*Sum of product of consecutive even digits of any digit number \*/

```

import java.util.Scanner;

public class Program1_8 {

    public static void main(String args[]) {

        int num, number, d1, d2, sum = 0;

```



```

Scanner sc = new Scanner(System.in);
System.out.print("Enter a number : ");
num = sc.nextInt();
number = num;
while (num != 0) {
    d1 = num % 10;
    num = num / 10;
    d2 = num % 10;
    if(d1%2==0 && d2%2==0)
    {
        sum = sum + (d1 * d2);
    }
}
System.out.println("Sum of product of consecutive even digits of " + number + " is : " + sum);
sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_8.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_8
Enter a number : 7653
Sum of product of consecutive even digits of 7653 is : 0
C:\Users\91637\Desktop\JAVA Practical\assignment-2>_

```

IX-/\*Sum of product of consecutive odd digits of any digit number \*/

```

import java.util.Scanner;
public class Program1_9 {
    public static void main(String args[]) {
        int num, number, d1, d2, sum = 0;
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number : ");
        num = sc.nextInt();
        number = num;
        while (num != 0) {
            d1 = num % 10;
            num = num / 10;
            d2 = num % 10;

```

```

        if(d1%2!=0 && d2%2!=0)
        {
            sum = sum + (d1 * d2);
        }
    }

    System.out.println("Sum of product of consecutive odd digits of " + number + " is : " + sum);
    sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_9.java

C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_9
Enter a number : 7654
Sum of product of consecutive odd digits of 7654 is : 0

C:\Users\91637\Desktop\JAVA Practical\assignment-2>_

```

X-/\*Sum of product of consecutive prime digits of any digit number \*/

```

import java.util.Scanner;

public class Program1_10 {

    public static void main(String args[]) {

        int num, number, d1, d2, sum = 0;

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a number : ");

        num = sc.nextInt();

        number = num;

        while (num != 0)

        {

            d1 = num % 10;

            num = num / 10;

            d2 = num % 10;

            int d1count=0,d2count=0;

            for(int i=1;i<=d1;i++)

            {

                if(d1%i==0)

                {

                    d1count++;

                }

            }

        }
    }
}

```

```

        for(int i=1;i<=d2;i++)
        {
            if(d2%i==0)
            {
                d2count++;
            }
        }
        if(d1count==2 && d2count==2)
        {
            sum=sum+(d1*d2);
        }
    }
    System.out.println("Sum of product of consecutive prime digits of " + number + " is : " + sum);
    sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_10.java

C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_10
Enter a number : 5432
Sum of product of consecutive prime digits of 5432 is : 6

C:\Users\91637\Desktop\JAVA Practical\assignment-2>_

```

XI-

/\*Difference between Sum of product of consecutive even digits

except 2 and 6 and Sum of product of consecutive odd digits

except 3 and 7 of any digit number\*/

import java.util.Scanner;

```

public class Program1_11 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int num,d1,d2,sumEven=0,sumOdd=0,diff;
        System.out.print("Enter a Number :");
        num=sc.nextInt();
        while(num!=0)
        {

```

```

d1=num%10;
num=num/10;
d2=num%10;
if (d1 % 2 == 0 && d2 % 2 == 0) {
    if (d1 != 2 && d1 != 6 && d2 != 2 && d2 != 6) {
        sumEven =sumEven+( d1 * d2);
    }
}
if (d1 % 2 != 0 && d2 % 2 != 0) {
    if (d1 != 3 && d1 != 7 && d2 != 3 && d2 != 7) {
        sumOdd =sumOdd+ (d1 * d2);
    }
}
}
diff = sumEven - sumOdd;
System.out.println("The difference is: " + diff);
sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program1_11.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program1_11
Enter a Number :2463
The difference is: 0
C:\Users\91637\Desktop\JAVA Practical\assignment-2>

```

2-/\*Write a java program to find sum of product of corresponding digits of two any digit number Such as n=1234 m=7896 output=6\*4+9\*3+8\*2+7\*1 \*/

```

import java.util.Scanner;

public class Program2 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        int num1,num2,sum=0,n,m;

        System.out.print("Enter first Number :");

        num1=sc.nextInt();

        System.out.print("Enter second Number :");

        num2=sc.nextInt();
    }
}

```

```

while(num1 !=0 || num2!=0)
{
    n=num1%10;
    m=num2%10;
    sum=sum+(m*n);
    num1=num1/10;
    num2=num2/10;
}
System.out.println("Sum = "+sum);
sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program2.java

C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program2
Enter first Number :5424
Enter second Number :5235
Sum = 59

C:\Users\91637\Desktop\JAVA Practical\assignment-2>_

```

3-/\* Write a java program to find sum of product of corresponding even digits of first any digit number and corresponding odd digit of any digit number Such as n=1234 m=4567 output=4\*7+2\*5 \*/

```

import java.util.Scanner;

public class Program3 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n,m,sum=0;
        System.out.print("Enter first digit :");
        n=sc.nextInt();
        System.out.print("Enter second digit :");
        m=sc.nextInt();
        while(n!=0 || m!=0)
        {
            int d1 = n%10;

```

```

int d2= m%10;
if(d1%2==0 && d2%2!=0)
{
    sum=sum+d1*d2;
}
n=n/10;
m=m/10;
}

System.out.println("sum of product of corresponding even digits of first any digit number and
corresponding odd digit is "+sum);

sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program3.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program3
Enter first digit :5432
Enter second digit :3456
sum of product of corresponding even digits of first any digit number and corresponding odd digit is 0

```

4-

l-

/\* Write a java program to compute following series and take input x and n

$1 - x^2/2! + x^3/3! - x^4/4! + \dots + x^n/n!$  \*/

```
import java.util.Scanner;
```

```

public class Program4_1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int x, n, count = 1;
        double result = 1;
        System.out.print("Enter the value of x : ");
        x = sc.nextInt();
        System.out.print("Enter the value of n : ");
        n = sc.nextInt();
        for (int i = 2; i <= n; i++) {
            long pow = 1, fact = 1;
            for (int j = 1; j <= i; j++) {
                pow = pow * x;
                fact = fact * j;
            }
            if (i % 2 == 0) {
                result = result - pow / fact;
            } else {
                result = result + pow / fact;
            }
        }
        System.out.println("The result is: " + result);
    }
}

```

```

    }
    double r = (double) pow / fact;
    result = count % 2 == 0 ? result + r : result - r;
    count++;
}
System.out.println("Result = " + result);
sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program4_1.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program4_1
Enter the value of x : 3
Enter the value of n : 5
Result = -0.3500000000000001

```

II-//  $x - x^3/3! + x^5/5! - x^7/7! + \dots + x^n/n!$

```
import java.util.Scanner;
```

```

public class Program4_2 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int x,n,count=1;
        System.out.print("Enter the value of x : ");
        x=sc.nextInt();
        System.out.print("Enter the value of n : ");
        n=sc.nextInt();
        double result=x;
        for(int i=3;i<=n;i=i+2)
        {
            long pow=1,fact=1;
            for(int j=1;j<=i;j++)
            {
                pow=pow*x;
                fact=fact*j;
            }
            double r=(double) pow/fact;
            result = (count%2==0? result+r: result-r);
            count++;
        }
    }
}

```

```

    }

    System.out.println("Result = "+result);

    sc.close();

}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program4_2.java

C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program4_2
Enter the value of x : 5
Enter the value of n : 6
Result = 10.208333333333336

```

$$1 + \frac{x^2}{2!} + \frac{x^4}{4!} + \frac{x^6}{6!} + \dots + \frac{x^n}{n!}$$

```
import java.util.Scanner;
```

```

public class Program4_3 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        int x,n;

        System.out.print("Enter the value of x : ");
        x=sc.nextInt();

        System.out.print("Enter the value of n : ");
        n=sc.nextInt();

        double result=1;
        for(int i=2;i<=n;i=i+2)
        {
            long pow=1,fact=1;
            for(int j=1;j<=i;j++)
            {
                pow=pow*x;
                fact=fact*j;
            }
            double r=(double) pow/fact;
            result = result+r;
        }

        System.out.println("Result = "+result);

        sc.close();

    }
}

```



```
}
```

```
C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program4_3.java
```

```
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program4_3
```

```
Enter the value of x : 5
```

```
Enter the value of n : 6
```

```
Result = 61.24305555555556
```

IV- $\frac{x-x^3/3! + x^5/5! - x^7/7! + x^{11}/11! - \dots + x^n/n!}{}$

```
import java.util.Scanner;
```

```
public class Program4_4 {  
    public static void main(String[] args) {  
        Scanner sc= new Scanner(System.in);  
        int x,n,count=1;  
        System.out.print("Enter the value of x : ");  
        x=sc.nextInt();  
        System.out.print("Enter the value of n : ");  
        n=sc.nextInt();  
        double result=x;  
        for(int i=3;i<=n;i++)  
        {  
            boolean Notprime =false;  
            long pow=1,fact=1;  
            for(int j=1;j<=n;j++)  
            {  
                if(j!=1 && j!=i && i%j==0)  
                {  
                    Notprime=true;  
                }  
                pow=pow*x;  
                fact=fact*j;  
            }  
            if(Notprime)  
            {  
                count++;  
                continue;  
            }  
        }  
    }  
}
```

```

        double r=(double) pow/fact;
        result=(count%2==0 ? result+r : result-r);
    }
    System.out.println("Result is "+result);
    sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program4_4.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program4_4
Enter the value of x : 5
Enter the value of n : 6
Result is 5.0

```

5-

/\*Write a java program compute following series and take a numbers num as

input

$x - x^3/3! + x^5/5! - x^7/7! + \dots + x^n/n!$

where x=sum of all even digits except 2 and 8

and n= sum of all odd digits except 1 and 3 \*/

```
import java.util.Scanner;
```

```
public class Program5
```

```

{
    public static void main(String[] args)
    {
        Scanner in = new Scanner(System.in);
        int num, count = 0;
        double result;
        System.out.print("Enter a number: ");
        num = in.nextInt();
        int x = 0, n = 0;
        while (num > 0)
        {
            int t = num % 10;
            if (t % 2 == 0)
            {
                if (t != 2 && t != 8)
                {

```

```

        x += t;
    }
} else
{
    if (t != 1 && t != 3)
    {
        n += t;
    }
}
num /= 10;
}
result = x;
for (int i = 3; i <= n; i = i + 2)
{
    long factorialValue = 1;
    long xToPowerValue = 1;
    for (int j = 1; j <= i; j++)
    {

        factorialValue *= j;
        xToPowerValue *= x;
    }
    double calculation = (double) xToPowerValue / factorialValue;
    result = count % 2 == 0 ? result + calculation : result - calculation;
    count++;
}
System.out.println("The result of the series: " + result);
in.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program5.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program5
Enter a number: 2345
The result of the series: 6.133333333333333

```

6-/\*Write a java program to check weather the given number is palindrome and prime or not? \*/

```

import java.util.Scanner;

public class Program6
{
    public static void main(String[] args)
    {
        int r, sum = 0, temp;
        int n;
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the number :");
        n = sc.nextInt();
        temp = n;
        while (temp > 0)
        {
            r = temp % 10; // getting remainder
            sum = (sum * 10) + r;
            temp = temp / 10;
        }
        if (n == sum)
            System.out.println(n+"is palindrome number ");
        else
            System.out.println(n+"is not palindrome");

        int count = 0;
        for (int i = 1; i <= n; i++)
        {
            if (n % i == 0)
            {
                count++;
            }
        }
        if (count == 2)
        {
            System.out.println(n+" is a prime number");
        } else
        {

```

```

        System.out.println(n+" is not a prime number");
    }
    sc.close();
}
}

```

```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program6.java
C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program6
Enter the number :3456
3456is not palindrome
3456 is not a prime number

```

7-/\* Write a java program to find factorial of a number using while loop, do while loop and for loop all in one program?[hint use switch block] \*/

```

import java.util.*;

public class Program7
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        int num, fact = 1, choice;
        System.out.println("Enter the number ");
        num = sc.nextInt();

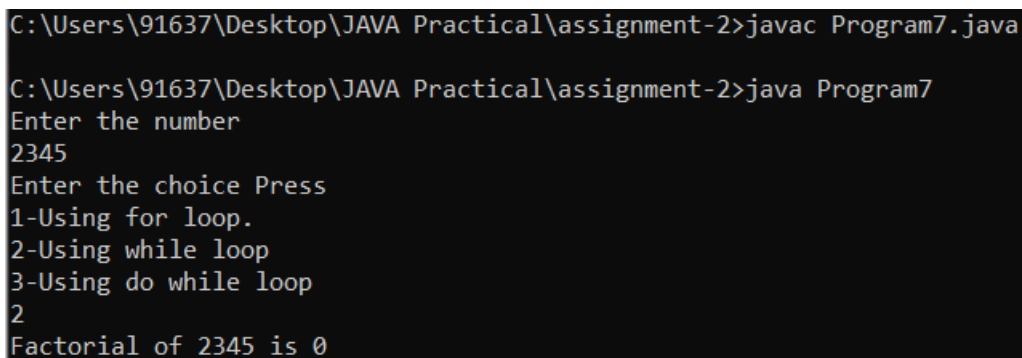
        System.out.println("Enter the choice Press\n1-Using for loop.\n2-Using while loop\n3-Using do while loop");
        choice = sc.nextInt();
        switch (choice) {
            case 1:
                for (int i = 1; i <= num; i++) {
                    fact *= i;
                }
                System.out.println("Factorial of " + num + " is " + fact);
                break;
            case 2:
                int i = 1;

```

```

        while (i <= num) {
            fact *= i;
            i++;
        }
        System.out.println("Factorial of " + num + " is " + fact);
        break;
    case 3:
        i = 1;
        do {
            fact = fact * i;
            i++;
        } while (i <= num);
        System.out.println("Factorial of " + num + " is " + fact);
        break;
    default:
        System.out.println("Invalid Choice !!");
        break;
    }
    sc.close();
}
}

```



```

C:\Users\91637\Desktop\JAVA Practical\assignment-2>javac Program7.java

C:\Users\91637\Desktop\JAVA Practical\assignment-2>java Program7
Enter the number
2345
Enter the choice Press
1-Using for loop.
2-Using while loop
3-Using do while loop
2
Factorial of 2345 is 0

```

8-/\* Write a program to find following data of student using mark of four subjects like C, C++, Java, and Python. Mark of 4 subjects will be accepted at the run time and credit of all the mentioned subject is 3?

- a) Grade of 4 subjects?
- b) Total Mark and %age of mark secured by Students?
- c) SGPA of Student?

\*/

```
/*Code Written By Ramesh Sir in Lab
```

\* Take input Through command line (Written like below )

```
* javac Program8.java
```

```
* java Program8 60 78 45 92
```

 $\ast/$ 

```
public class Program8
```

 $\{$ 

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

 $\{$ 

```
int cp = 3, fms = 400, sgpat = 0, tms = 0, gp = 1;
```

```
int nos = args.length;
```

```
for (int i = 0; i < nos; i++)
```

 $\{$ 

```
char gd = 's';
```

```
int m = Integer.parseInt(args[i]);
```

```
tms = tms + m;
```

```
if (m >= 35 && m < 40)
```

 $\{$ 

```
m = m + 5;
```

}

```
int mv = m / 10;
```

```
switch (mv) {
```

case 0:

case 1:

case 2:

case 3:

```
gd = 'F';
```

```
gp = 2;
```

```
break;
```

case 4:

```
gd = 'D';
```

```
gp = 5;
```

```
break;
```

case 5:

```
gd = 'C';
```

```
gp = 6;
```

```

        break;
    case 6:
        gd = 'B';
        gp = 7;
        break;
    case 7:
        gd = 'A';
        gp = 8;
        break;
    case 8:
        gd = 'E';
        gp = 9;
        break;
    case 9:
    case 10:
        gd = 'O';
        gp = 10;
        break;
    default:
        gd = 's';
        gp = 0;
    }

    System.out.println("Your mark for subject " + i + "is" + args[i] + "and grade is " + gd);

    sgpat = sgpat + gp * cp;
}

double percent = (tms / fms) / 100;
double sgpa = sgpat / 12;
System.out.println("Total Mark is " + tms);
System.out.println("% of mark is " + percent);
System.out.println("Your SGPA is " + sgpa);

}

}

```

9-// Write a program to find factorial of difference between greatest and smallest number among 3 numbers?



```
import java.util.Scanner;

public class Program9
{
    public static void main(String[] args)
    {
        int num1, num2, num3, greatest, smallest, fact = 1, diff;
        System.out.println("Enter 3 numbers : ");
        Scanner sc = new Scanner(System.in);
        num1 = sc.nextInt();
        num2 = sc.nextInt();
        num3 = sc.nextInt();

        // for greatest
        if (num1 > num2 && num1 > num3)
        {
            greatest = num1;
        }
        else if (num2 > num1 && num2 > num3)
        {
            greatest = num2;
        }
        else
        {
            greatest = num3;
        }
        // for smallest
        if (num1 < num2 && num1 < num3)
        {
            smallest = num1;
        }
        else if (num2 < num1 && num2 < num3)
        {
            smallest = num2;
        }
        else
```

```

    {
        smallest = num3;
    }
    System.out.println("Greatest number is : " + greatest);
    System.out.println("Smallest number is : " + smallest);
    diff = greatest - smallest;
    for (int i = diff; i >= 1; i--) {
        fact = fact * i;
    }
    System.out.println("Factorial of difference between greatest and smallest digit : " + fact);
    sc.close();
}
}

10-// Write a program to generate Fibonacci series up to n terms? Value of n will be accepted from user?

```

```

import java.util.Scanner;

public class Program10
{
    public static void main(String[] args)
    {
        int n, d1, d2, nextD;
        System.out.println("Enter n for fibonacci series : ");
        Scanner sc = new Scanner(System.in);
        n = sc.nextInt();
        System.out.println("Fibonacci series upto " + n + " digit: ");
        d1 = 0;
        d2 = 1;
        System.out.print(d1 + " " + d2 + " ");
        for (int i = 0; i < n; i++)
        {
            nextD = d1 + d2;
            System.out.print(nextD + " ");
            d1 = d2;
            d2 = nextD;
        }
    }
}

```

```

        sc.close();
    }
}

```

11-

I- /\*Write a program to perform following using the numbers in between 23 to 249?

a) find number of even numbers that ends with 0 and 4?

\*/

```

public class Program11a
{
    public static void main(String[] args)
    {
        int count = 0;
        for (int i = 23; i <= 249; i++)
        {
            if (i % 2 == 0 && i % 10 == 0 || i % 10 == 4)
            {
                count++;
            }
        }
        System.out.println(count + " no of even digit ends with 0 and 4 in between 23 to249.");
    }
}

```

II-/\*Write a program to perform following using the numbers in between 23 to 249?

a) find number of even numbers that ends with 0 and 4?

\*/

```

public class Program11a
{
    public static void main(String[] args)
    {
        int count = 0;
        for (int i = 23; i <= 249; i++)
        {
            if (i % 2 == 0 && i % 10 == 0 || i % 10 == 4)
            {
                count++;
            }
        }
    }
}

```

```

    }
    System.out.println(count + " no of even digit ends with 0 and 4 in between 23 to 249.");
}
}

```

III-//find number of prime numbers?

```

public class Program11c
{
    public static void main(String[] args)
    {
        int count = 0, prime = 0;
        for (int i = 23; i <= 249; i++)
        {
            count = 0;
            for (int j = 1; j <= i; j++)
            {
                if (i % j == 0)
                {
                    count++;
                }
            }
            if (count == 2)
            {
                prime++;
            }
        }
        System.out.println("the number of prime numbers between 23 to 249 : " + prime);
    }
}

```

IV-//find number of palindrome numbers?

```

public class Program11d
{
    public static void main(String[] args)
    {
        int count = 0, result, rem;
        for (int i = 23; i <= 249; i++) {
            int temp = i;

```

```

        result = 0;
        while (temp != 0)
        {
            rem = temp % 10;
            result = result * 10 + rem;
            temp /= 10;
        }
        if (i == result)
        {
            count++;
        }
    }
    System.out.println("Numbers of pallindrom between 23 to 249 is : " + count);
}
}

```

V-//find difference between average of palindrome and prime numbers?

```

public class Program11e
{
    public static void main(String[] args)
    {
        int count1 = 0, result, rem, sum = 0, count2 = 0, prime = 0, sum2 = 0;
        for (int i = 23; i <= 249; i++)
        {
            int temp = i;
            result = 0;
            while (temp != 0)
            {
                rem = temp % 10;

                result = result * 10 + rem;
                temp = temp / 10;
            }
            if (i == result)
            {
                sum = sum + result;
                count1++;
            }
        }
    }
}

```

```

    }
}
float avg1 = sum / count1;
System.out.println("Avg of pallindroms in the given range : " + avg1);
for (int i = 23; i <= 249; i++) {
    count2 = 0;
    for (int j = 1; j <= i; j++)
    {
        if (i % j == 0)
        {
            count2++;
        }
    }
    if (count2 == 2)
    {
        prime++;
        sum2 = sum2 + i;
    }
}
float avg2 = sum2 / prime;
System.out.println("Avg of prime numbers in the given range : " + avg2);
System.out.println("Difference between the two averages : " + (avg1 - avg2));
}
}

```

VI-/\*Write a program to perform following using the numbers in between 23 to 249?

f) find GCD and LCM of all even numbers? \*/

```

public class Program11f
{
    public static void main(String[] args)
    {
        int LCM=0,GCD=0;
        for (int i = 24; i <= 249; i = i + 2)
        {
            int a=i,b=i+2;
            //For GCD

```

```

        for(int j=1;j<=b;j++)
        {
            if(a%j==0 && b%j==0)
            {
                GCD=j;
            }
        }
        //For LCM
        for(int j=b;j<=a*b;j++)
        {
            if(j%a==0 && j%b==0)
            {
                LCM=j;
            }
        }
    }
    System.out.println("GCD = "+GCD+" and LCM = "+LCM+" for all even number in between 23
to 249");
}
}

```

VII-/\*Write a program to perform following using the numbers in between 23 to 249?

g) find GCD and LCM of all odd numbers? \*/

```

public class Program11g
{
    public static void main(String[] args)
    {
        int LCM=0,GCD=0;
        for (int i = 23; i <= 249; i = i + 2)
        {
            int a=i,b=i+2;
            //For GCD
            for(int j=1;j<=b;j++)
            {
                if(a%j==0 && b%j==0)
                {

```

```

        GCD=j;
    }
}
//For LCM
for(int j=b;j<=a*b;j++)
{
    if(j%a==0 && j%b==0)
    {
        LCM=j;
    }
}
}

System.out.println("GCD = "+GCD+" and LCM = "+LCM+" for all odd number in between 23
to 249");
}
}

```

VIII-//Check whether the difference between largest even number and smallest palindrome or not ?

```

public class Program11h
{
    public static void main(String args[])
    {
        int oNum = 0, eNum = 0, rem, result = 0;
        for (int i = 249; i >= 23; i--)
        {
            if (i % 2 == 0)
            {
                eNum = i;
            }
        }
        for (int i = 23; i <= 249; i++)
        {
            if (i % 2 != 0)
            {
                oNum = i;
            }
        }
    }
}

```



```

int diff = eNum - oNum;
int temp = diff;
while (diff != 0)
{
    rem = diff % 10;
    result = result * 10 + rem;
    diff = diff / 10;
}
if (temp == result)
{
    System.out.println("Difference between largest even number and smallest odd number is
pallindrom.");
} else
{
    System.out.println("Difference between largest even number and smallest odd number is not a
pallindrom.");
}
}

```

IX-//Find first five largest even number and smallest odd number?

```

public class Program11i
{
    public static void main(String args[])
    {
        int count = 0;
        System.out.print("The first five largest even number in the given range :");
        for (int i = 249; i >= 23; i--)
        {
            if (i % 2 == 0)
            {
                System.out.print(" " + i);
                count++;
            }
            if (count == 5)
                break;
        }
    }
}

```

```

System.out.println();
int count2 = 0;
System.out.print("The first five smallest odd number in the given range :");
for (int i = 23; i <= 249; i++)
{
    if (i % 2 != 0)
    {
        System.out.print(" " + i);
        count2++;
    }
    if (count2 == 5)
        break;
}
}
}

X-//Find sum of product of corresponding digits of 2nd largest even number and 3rd smallest odd
number?

public class Program11j
{
    public static void main(String args[])
    {
        int count = 0, Enum = 0, count2 = 0, Onum = 0, sum = 0, d, d2;
        for (int i = 249; i >= 23; i--)
        {
            if (i % 2 == 0)
            {
                count++;
            }
            if (count == 2)
            {
                Enum = i;
                System.out.println("The 2nd largest even number in the given range : " + Enum);
                break;
            }
        }
    }
    for (int i = 23; i <= 249; i++)

```

```

{
    if (i % 2 != 0)
    {
        count2++;
    }
    if (count2 == 3)
    {
        Onum = i;
        System.out.println("The 3rd smallest odd number in the given range : " + Onum);
        break;
    }
}
while (Enum != 0)
{
    d = Enum % 10;
    d2 = Onum % 10;
    sum = sum + (d * d2);
    Enum = Enum / 10;
    Onum = Onum / 10;
}
System.out.println("Sum of product of corresponding digits the above numbers : " + sum);
}
}

```

12-/\*Write a java program to find following of 10 numbers using command line arguments? Do not use array?

- a) Find difference between greatest and smallest number?
- b) Find difference between average of all odd numbers and even numbers? \*/

//import java.util.Scanner; (Taking input from command line same as Question no 8)

```

public class Program12
{
    public static void main(String args[])
    {
        int s, min=99999, max = 0, eSum = 0, oSum = 0, eCount = 0, oCount = 0;
        for (int i = 0; i < 10; i++)

```

```

{
    s = Integer.parseInt(args[i]); //Taking input from command line
    if (s > max)
    {
        max = s;
    }
    if(s < min)
    {
        min = s;
    }

    if (s % 2 == 0)
    {
        eSum = eSum + s;
        eCount++;
    } else
    {
        oSum = oSum + s;
        oCount++;
    }
}

System.out.println("Difference between maximum and minimum from the given numbers is :\" +
(max - min));

float eAvg = eSum / eCount;
float oAvg = oSum / oCount;

System.out.println("Difference between average of all odd numbers and even numbers :\" + (eAvg -
oAvg));
}
}

```