

Assignment No:-12

Name:-Suryawanshi Sangramsingh Sambhaji

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1. Write a program that takes in an integer and prints all the numbers from 1 to that integer, inclusive.

```
import java.util.*;
public class PrintNumUptoNIntegers
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter n integer number:");
        int n = sc.nextInt();
        System.out.println("-----");
        System.out.println("Enterd n integer is:");
        for(int i=1;i<=n;i++)
        {
            System.out.print(i+" ");
        }
        System.out.println("\n-----|");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac PrintNumUptoNIntegers.java
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrintNumUptoNIntegers
Enter n integer number:
15
-----
Enterd n integer is:
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
-----
```

2. Write a program that takes in an integer and calculates its factorial using a for loop.

```
import java.util.*;
public class FactOfGivenNInteger
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter n integer number:");
        int n = sc.nextInt();
        System.out.println("-----");
        int fact=1;
        for(int i=1;i<=n;i++)
        {
            fact*=i;
        }
        System.out.print("Factorial f given integer is:"+fact);
        System.out.println("\n-----");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac FactOfGivenNInteger.java
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FactOfGivenNInteger
Enter n integer number:
4
-----
Factorial f given integer is:24
-----
```

3. Write a program that takes in an integer and checks if it is a prime number.

```
import java.util.*;
public class FactOfGivenNthInteger
{
    public static void main(String[] ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter any number:");
        int n = sc.nextInt();
        System.out.println("-----");
        int c=0;
        for(int i=1;i<=n;i++)
        {
            if(n%i==0)
            {
                c++;
            }
        }
        if(c==2)
        {
            System.out.print("Given "+n+" number is a prime number");
        }
        else
        {
            System.out.print("Given "+n+" number is not a prime number");
        }
        System.out.println("\n-----");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingment_Java_Codenera>javac FactOfGivenNthInteger.java
C:\Users\Shree\Desktop\Assingment_Java_Codenera>java FactOfGivenNthInteger
Enter any number:
3
-----
Given 3 number is a prime number
-----

C:\Users\Shree\Desktop\Assingment_Java_Codenera>java FactOfGivenNthInteger
Enter any number:
4
-----
Given 4 number is not a prime number
-----
```

4. Write a program that takes in an integer and prints all the prime numbers from 1 to that integer, inclusive.

```
import java.util.*;
public class PrimeNumUptoGivenNthInteger
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter first number:");
        int n = sc.nextInt();
        System.out.println("-----");
        System.out.println("Enter last number:");
        int n1 = sc.nextInt();
        System.out.println("Given prime number "+n+" upto "+n1+" is:");
        System.out.println("-----");
        for(int i=n;i<=n1;i++)
        {
            int c=0;
            for(int j=1;j<=i;j++)
            {
                if(i%j==0)
                {
                    c++;
                }
            }
            if(c==2)
            {
                System.out.print(i+" ");
            }
        }

        System.out.println("\n-----");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PrimeNumUptoGivenNthInteger
Enter first number:
1
-----
Enter last number:
20
Given prime number 1 upto 20 is:
-----
2 3 5 7 11 13 17 19
-----
```

5. Write a program that takes in an integer and prints a multiplication table for that integer up to a certain number of rows.

```
import java.util.*;
public class MultiTblofNumUptoGivenNthInteger
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter any for table multiplication number:");
        int n = sc.nextInt();
        System.out.println("-----");
        for(int i=1;i<=n;i++)
        {
            int c=0;
            for(int j=1;j<=10;j++)
            {
                System.out.print((i*j)+" ");
            }
            System.out.println();
        }
        System.out.println("\n-----");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac MultiTblofNumUptoGivenNthInteger.java
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java MultiTblofNumUptoGivenNthInteger
Enter any for table multiplication number:
5
-----
1 2 3 4 5 6 7 8 9 10
2 4 6 8 10 12 14 16 18 20
3 6 9 12 15 18 21 24 27 30
4 8 12 16 20 24 28 32 36 40
5 10 15 20 25 30 35 40 45 50
-----
```

6. Write a program that takes in two integers and finds their greatest common divisor (GCD).

```
import java.util.*;
public class FindGratestCommonDivisor
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter first number:");
        int n = sc.nextInt();
        System.out.println("-----");
        System.out.println("Enter last number:");
        int n1 = sc.nextInt();
        System.out.println("Given common divisor of "+n+" and "+n1+" is:");
        System.out.println("-----");
        int max=0;
        for(int i=1;i<=n1;i++)
        {
            if(n%i==0 && n1%i==0)
            {
                if(i>max)
                {
                    max=i;
                }
            }
        }
        System.out.println("Greatest common divisor is: "+max);
        System.out.println("\n-----");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingment_Java_Codenera>javac FindGratestCommonDivisor.java
C:\Users\Shree\Desktop\Assingment_Java_Codenera>java FindGratestCommonDivisor
Enter first number:
28
-----
Enter last number:
48
Given common divisor of 28 and 48 is:
-----
Greatest common divisor is: 4
-----
```

7. Write a program that takes in two integers and finds their least common multiple (LCM).

```
import java.util.*;
public class FindLCM
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter first number:");
        int n = sc.nextInt();
        System.out.println("-----");
        System.out.println("Enter last number:");
        int n1 = sc.nextInt();
        System.out.println("Given common divisor of "+n+" and "+n1+" is:");
        System.out.println("-----");
        int max = (n > n1) ? n : n1;
        int lcm = max;
        boolean v = false;
        for (int i = max; !v; i++)
        {
            if (i % n == 0 && i % n1 == 0)
            {
                lcm = i;
                v = true;
            }
        }

        System.out.println("LCM of " + n + " and " + n1 + " is: " + lcm);
        System.out.println("\n-----");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac FindLCM.java

C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java FindLCM
Enter first number:
2
-----
Enter last number:
3
Given common divisor of 2 and 3 is:
-----
LCM of 2 and 3 is: 6
-----
```

8. Write a program that takes in an integer and checks if it is a palindrome.

```
import java.util.*;
public class PalindromeNumCheck
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter any number:");
        int n = sc.nextInt();
        System.out.println("-----");
        int rem=0,temp=n,rev=0;
        for(;temp!=0;temp=temp/10)
        {
            rem=temp%10;
            rev=(rev*10)+rem;
        }
        if(rev==n)
        {
            System.out.print("Given "+n+" number is a palindrome");
        }
        else
        {
            System.out.print("Given "+n+" number is not a palindrome");
        }
        System.out.println("\n-----");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingment_Java_Codenera>javac PalindromeNumCheck.java

C:\Users\Shree\Desktop\Assingment_Java_Codenera>java PalindromeNumCheck
Enter any number:
121
-----
Given 121 number is a palindrome
-----
```


9. Write a program that takes in two integers and uses the ternary operator to print the smaller of the two numbers.

```
import java.util.*;
public class SmallestNumUsingTernaryOp
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter first number:");
        int n = sc.nextInt();
        System.out.println("-----");
        System.out.println("Enter last number:");
        int n1 = sc.nextInt();
        int min = (n < n1) ? n : n1;
        System.out.println(min+" is smallest number");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>javac SmallestNumUsingTernaryOp.java
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java SmallestNumUsingTernaryOp
Enter first number:
4
-----
Enter last number:
8
4 is smallest number
```

10. Write a program that takes in an integer and uses the ternary operator to print "positive" if the number is greater than zero, "negative" if the number is Less than zero, and "zero" if the number is equal to zero.

```
import java.util.*;
public class PsitiveNegativeOrEqualNumUsingTernaryOp
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter first number:");
        int n = sc.nextInt();
        System.out.println((n>0)?"positive":(n<0)?"negative":"equal");
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingnment_Java_Codenera>java PsitiveNegativeOrEqualNumUsingTernaryOp
Enter first number:
2
positive
```

11. Write a program that takes in three integers and uses the ternary operator to print the largest of the three numbers.

```
import java.util.*;
public class TernaryOperatorPrintLargestOfThreeN
{
    public static void main(String[]ar)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number");
        int a = sc.nextInt();
        System.out.println("Enter b number");
        int b = sc.nextInt();
        System.out.println("Enter c number");
        int c = sc.nextInt();
        int maximum=(a>b)? ((a>c)?a:c):((b>c)?b:c);
        System.out.println("Max is:"+maximum);
    }
}
```

Output:

```
C:\Users\Shree\Desktop\Assingment_Java_Codenera>javac TernaryOperatorPrintLargestOfThreeN.java
C:\Users\Shree\Desktop\Assingment_Java_Codenera>java TernaryOperatorPrintLargestOfThreeN
Enter a number
1
Enter b number
2
Enter c number
3
Max is:3
```