LAB 1

1.Write a Java program to display “Hello World”.

```
public class myhelloworld{
public static void main(String[] args)
{
 System.out.println("Hello world!");
}
}
```

O/P:

```
C:\Users\user1\Desktop\B3139>javac myhelloworld.java

C:\Users\user1\Desktop\B3139>java myhelloworld
Hello world!
```

2.Write a Java program to print numbers between 1 to n which are divisible by 3, 5 and by both (3 and 5) by taking n as an input from the user.

```
import java.util.Scanner;
public class Second_prog{
  public static void main(String[] args)
{
  Scanner scanner=new Scanner(System.in);
  System.out.print("Enter Value Of N:");
  int n=scanner.nextInt();
  System.out.printf("Number Divisible by 3 or 5, between 1 and"+n);
  for(int i=1;i<=n;i++)
{
if(i%3==0 || i%5==0)
  {
System.out.println("Number:"+i);
}
}
}
}
```

O/P:

```
C:\Users\user1\Desktop\B3139>java Second_prog
Enter Value Of N:20
Number Divisible by 3 or 5, between 1 and20Number:3
Number:5
Number:6
Number:9
Number:10
Number:12
Number:15
Number:18
Number:20
```

3.Write a class named Greeter that prompts the user for his or her name, and then prints a personalized greeting. As an example, if the user entered "Era", the program should respond "Hello Era!".

```
import java.util.Scanner;
public class Third_prog{
public static void main(String[] args)
{
Scanner scanner=new Scanner(System.in);
System.out.println("Enter Your Name:");
String name=scanner.nextLine();
System.out.print("Goodmorning "+name+"!");
scanner.close();
}
}
```

O/P:

```
C:\Users\user1\Desktop\B3139>java Third_prog
Enter Your Name:
xyz
Goodmorning xyz!
```

4.Write a Java program that takes Name, Roll No and marks of 5 subjects as input and gives a formatted output as:

Name: ABCD
Roll No. : 1
Average: 84
Also display the grade (e.g. A, B, C…etc) using the average.

```
import java.util.Scanner;
public class Fourth_prog{
public static void main(String[] args)
{
Scanner scanner=new Scanner(System.in);
System.out.println("Enter Name:");
String name=scanner.nextLine();
System.out.println("Enter Roll No.:");
int rollno=scanner.nextInt();
int[] marks=new int[5];
int sum=0;
System.out.println("Enter Marks Of 5 Subject:");
for(int i=0;i<5;i++)
{
marks[i]=scanner.nextInt();
sum+=marks[i];
}
int avg=sum/5;
System.out.println("Name:"+name);
System.out.println("Roll No.:"+rollno);
System.out.println("Average:"+avg);
scanner.close();
if(avg<=100 && avg>=80)
{
System.out.println("Grade: A");
}
else if(avg<=79 && avg>=60)
{
System.out.println("Grade: B");
}
else if(avg<=59 && avg>=40)
{
System.out.println("Grade: C");
```

```
}
else{
System.out.println("Grade: D, Fail");
}
}
}
```

O/P:

```
C:\Users\user1\Desktop\B3139>java Fourth_prog
Enter Name:
Xyz
Enter Roll No.:
139
Enter Marks Of 5 Subject:
33
32
28
33
33
Name:Xyz
Roll No.:139
Average:31
Grade: D, Fail
```

5.Calculate and return the sum of all the even numbers present in the numbers array passed to the method calculateSumOfEvenNumbers. Implement the logic inside calculateSumOfEvenNumbers() method.
Test the functionalities using the main() method of the Tester class.

```
import java.util.Scanner;
class calculator{
int SumOfEvenNumbers(int[] nums,int n){
int sum=0;
for(int i=0;i<n;i++)
{

if(nums[i]%2==0)
{
sum+=nums[i];
}
}
return sum;
}
```

```
}
public class Fifth_prog{
public static void main(String[] args)
{
Scanner scanner=new Scanner(System.in);
int n=scanner.nextInt();
int[] nums=new int[n];
System.out.println("Enter"+ n +"Numbers:");
for(int i=0;i<n;i++)
{
nums[i]=scanner.nextInt();
}
calculator c1=new calculator();
int sum=c1.SumOfEvenNumbers(nums,n);
System.out.println("Sum of even number:"+sum);
}
}
```

O/P:

```
C:\Users\user1\Desktop\B3139>java Fifth_prog
5
Enter5Numbers:
32
28
3
5
7
Sum of even number:60
```

6.Write a program to perform matrix addition and matrix multiplication on two given matrices. Use for-each form of for loop to display the matrices.

```
import java.util.Scanner;
public class Sixth_prog{
 public static void main(String[] args)
  {
   System.out.println("Enter Row and Column for 2 matrix:");
   Scanner scanner=new Scanner(System.in);
   int r1=scanner.nextInt();
   int c1=scanner.nextInt();
   int r2=scanner.nextInt();
   int c2=scanner.nextInt();
   int[][] matrix1 = new int[r1][c1];
   int[][] matrix2 = new int[r2][c2];
   for(int i=0;i<r1;i++)
    {
     for(int j=0;j<c1;j++)
     {
       System.out.print("Enter matrix1["+i+"]"+"["+j+"]:");
       matrix1[i][j]=scanner.nextInt();
      }
     }
   for(int i=0;i<r2;i++)
   {
    for(int j=0;j<c2;j++)
    {
       System.out.print("Enter matrix2["+i+"]"+"["+j+"]:");
       matrix2[i][j]=scanner.nextInt();
       }
    }
   System.out.print("Sum of 2 matrix:");
   int[][] sum = new int[r2][c2];
   if(r1==r2 && c1==c2)
   {
   for(int i=0;i<r2;i++)
    {
    for(int j=0;j<c2;j++)
    {
       sum[i][j]=matrix1[i][j]+matrix2[i][j];
    }
```

```
}
}
else{
System.out.print("Enter Same Size Matrix!");
}
int[][] multiplication = new int[c1][r2];
if(c1==r2)
{
for(int i=0;i<r2;i++)
{
for(int j=0;j<c2;j++)
{
 for(int k=0;k<c1;k++)
 {
 multiplication[i][j] += matrix1[i][k] * matrix2[k][j];
  }
}
}
}
else{
System.out.print("Enter Correct Size Matrix for Multiplication:!");
}
System.out.println("Elements of Sum:");
for(int[] row:sum)
{
 for(int ele:row)
{
 System.out.println(ele);
}
}
System.out.println("Elements of Multiplication:");
for(int[] row:multiplication)
{
 for(int ele:row)
 {
  System.out.println(ele);
 }
}
}}
```

O/P:

```
C:\Urv's Document\DDU Material\JAVA\LAB01>java Sixth_prog
Enter Row and Column for 2 matrix:
2
2
2
2
Enter matrix1[0][0]:2
Enter matrix1[0][1]:3
Enter matrix1[1][0]:4
Enter matrix1[1][1]:1
Enter matrix2[0][0]:5
Enter matrix2[0][1]:7
Enter matrix2[1][0]:6
Enter matrix2[1][1]:2
Sum of 2 matrix:Elements of Sum:
7
10
10
3
Elements of Multiplication:
28
20
26
30
```