Student's ID: AF0402433 Trainer: Manali Mam
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LAB 2

Q.1. Write a program that takes a student's score as input and outputs the corresponding grade based on the following scale:

A: 90-100

B: 80-89

C: 70-79

D: 60-69

Program:

```
package demo;
import java.util.Scanner;
public class student_score {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner s=new Scanner(System.in);//creating the Scanner object
		int n1,n2,n3,total;
		float avg;
		System.out.println("Enter score of Subject 1 ");
		n1=s.nextInt();//taking first score as an input
		System.out.println("Enter score of Subject 2 ");
		n2=s.nextInt();//taking second score as an input
		System.out.println("Enter score of Subject 3 ");
		n3=s.nextInt();//taking third score as an input
		total=n1+n2+n3;// calculating the sum of three scores of student
		System.out.println("Total Score is "+total+" out of 300");
		avg=total/3;// calculating the average of three scores of student
		System.out.println("Your Average is: "+avg);
		if(avg>=90 && avg<=100)//checking whether average is greater and
equal to 90 and less than to 100
		{
			System.out.println("You scored A Grade");
		}
		else if(avg>=80 && avg<=89)//checking whether average is greater and
equal to 80 less than to 89
		{
			System.out.println("You scored B Grade");
		}
		else if(avg>=70 && avg<=79)//checking whether average is greater and
equal to 70 less than to 79
		{
			System.out.println("You scored C Grade");
		}
		else if(avg>=60 && avg<=69)//checking whether average is greater and
equal to 60 less than to 69
		{
			System.out.println("You scored B Grade");
		}
```

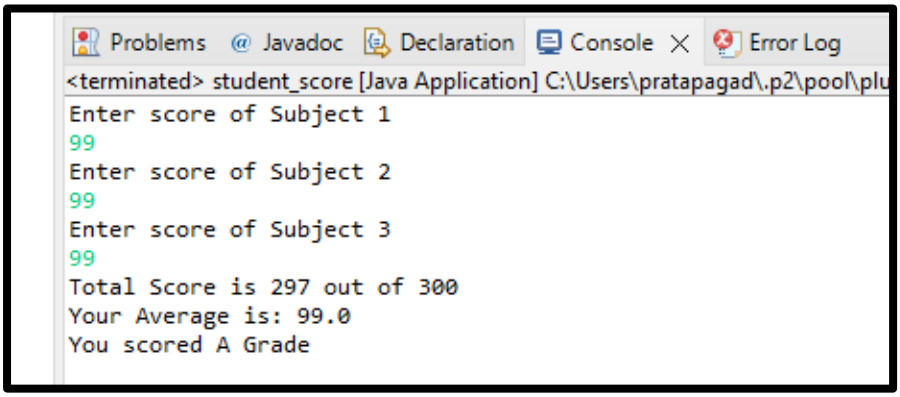
```
            else//checking whether average is greater and equal to 50 less than
to 59
            {

                  System.out.println("Sorry!! you are failed in this exam");
            }

      }

}
```

Output:



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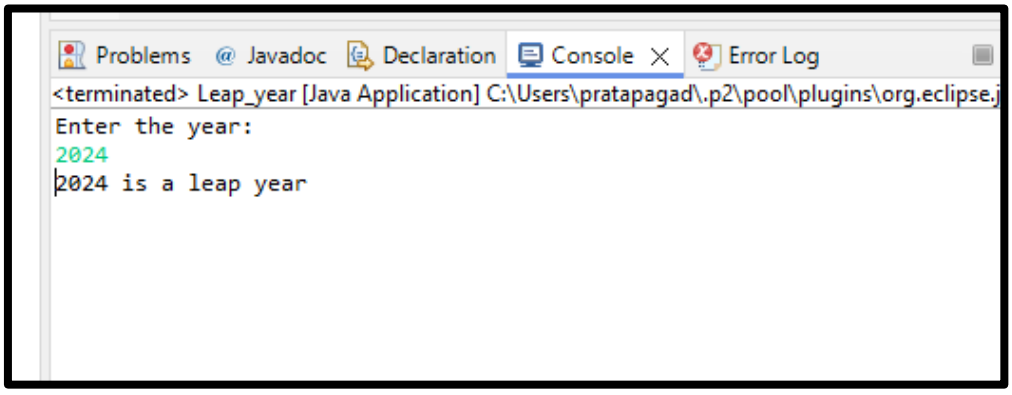
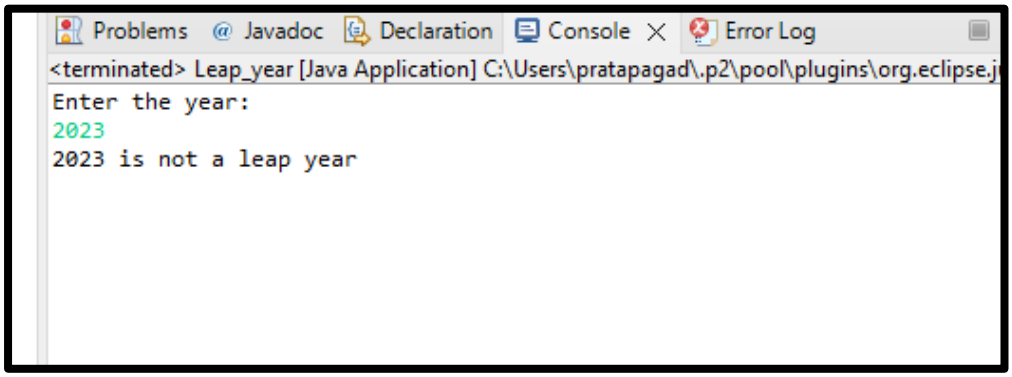
Q.2. Write a program to check if a given year is a leap year. (A year is a leap year if it is divisible by 4 but not by 100, or it is divisible by 400.)

Program:

```
package demo;
import java.util.Scanner;

public class Leap_year {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner s=new Scanner(System.in);/Creating the Scanner object
		int year;//declaring the variables
		System.out.println("Enter the year: ");
		year=s.nextInt();//taking a year as an input
		if(year%4==0)//checking whether remainder of entered no. is equal to
0 or not
		{
			System.out.println(year+" is a leap year");
		}
		else
		{
			System.out.println(year+" is not a leap year");
		}

	}

}
```

Output:





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Q.3. Write a program that takes an integer as input and checks if it is positive, negative, or zero.

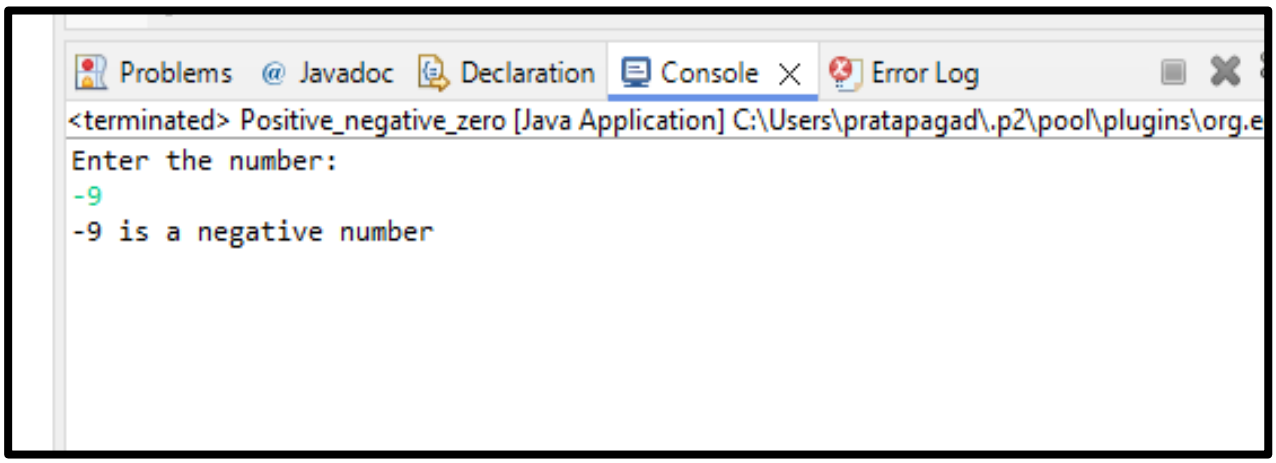
Program:

```
package demo;
import java.util.Scanner;
public class Positive_negative_zero {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner s=new Scanner(System.in);//creating the Scanner object
		int n;//declaring the variable
		System.out.println("Enter the number: ");
		n=s.nextInt();//taking the number as an input
		if(n>0)//checking whether the no. is positive
		{
			System.out.println(n+" is a positive number");
		}
		else if(n<0)//checking whether the no. is negative
		{
			System.out.println(n+" is a negative number");
		}
		else//the no. is Zero
		{
			System.out.println("The number is Zero");
		}
	}

}
```

Output:



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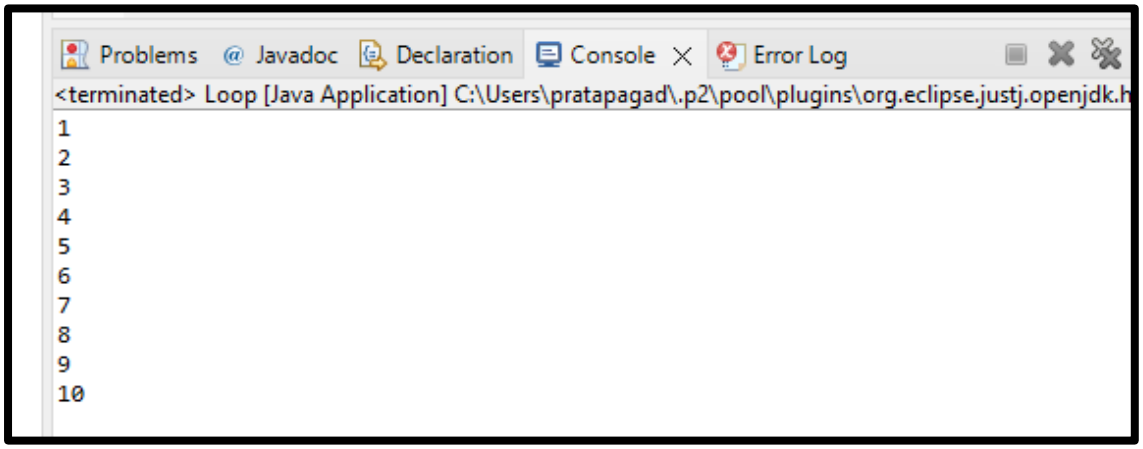
Q.4. Write a program that prints numbers from 1 to 10 using a loop.

Program:

```
package demo;

public class Loop {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int i=1;//decalring the varaible
		while(i<=10)//for(i=1;i<=10;i++)//It will rotate the loop 10 times
for printing the value of i
		{
			System.out.println(i);
			i++;
		}

	}

}
```

Output:



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Q.5. Write a program that takes an integer N as input and calculates the sum of entered numbers.

Program:

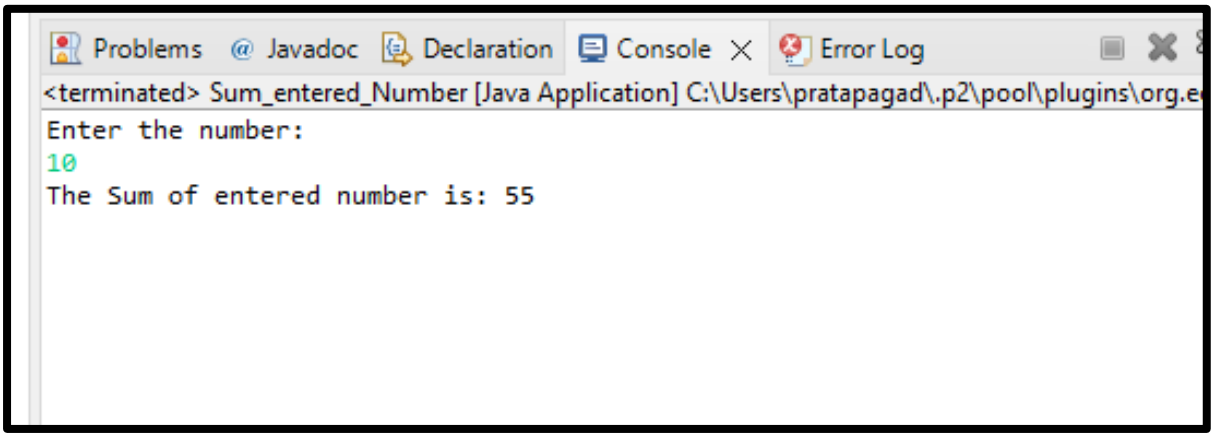
```
package demo;
import java.util.Scanner;
public class Sum_entered_Number {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner s=new Scanner(System.in);//declaring the Scanner Object
		int n,sum=0,i;//declaring the variables
		System.out.println("Enter the number: ");
		n=s.nextInt();//taking the no. as an input
		for(i=1;i<=n;i++)//it will rotate the loop for 10 times to change
the value of i
		{
			sum+=i;//it will calculate the total of value of n
		}
		System.out.print("The Sum of entered number is: "+sum);

	}

}
```

Output:



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Q.6. Write a program that takes an integer as input and prints its multiplication table up to 10.

Program:

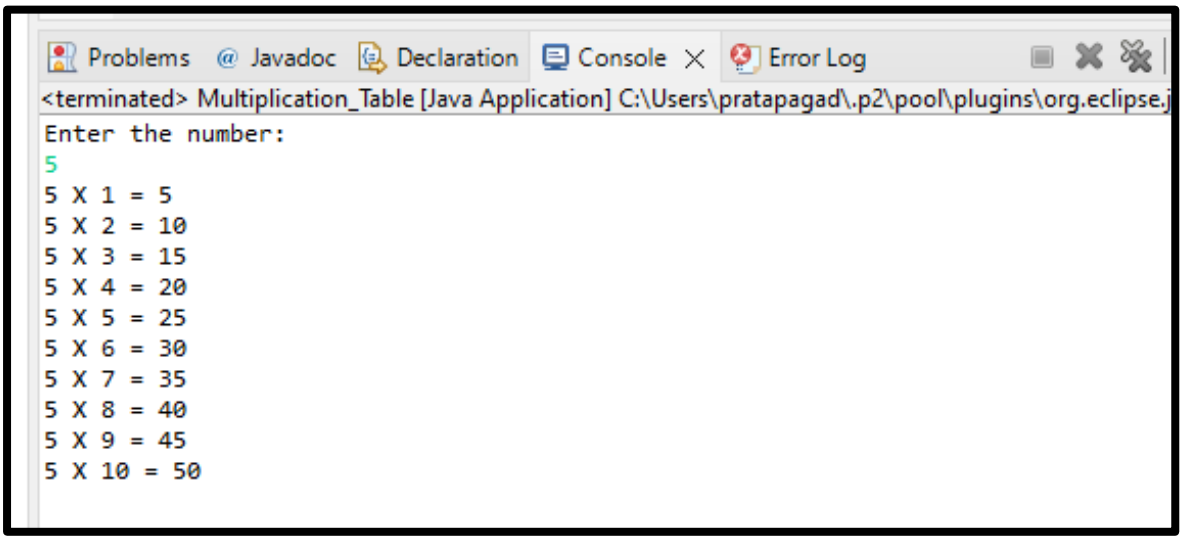
```
package demo;
import java.util.Scanner;
public class Multiplication_Table {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner s=new Scanner(System.in);//declaring the Scanner Object
		int n,i=1,ans;//declaring the variables
		System.out.println("Enter the number: ");
		n=s.nextInt();//taking the no. as an input
		while(i<=10)//It will rotate the loop for 10 times
		{
			ans=n*i;//product of n and i
			System.out.println(n+" X "+i+" = "+ans);//printing the output
			i++;//updation!!! it will increase the value of i by 1
		}

	}

}
```

Output:



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Q.7. Write a program that takes a positive integer as input and prints its digits in reverse order.

Program:

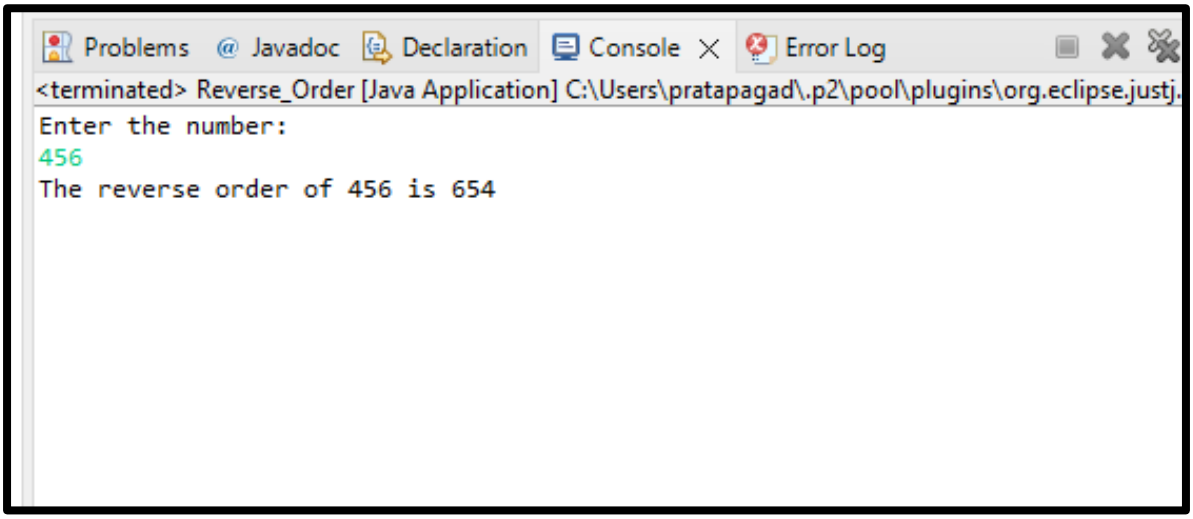
```
package demo;
import java.util.Scanner;
public class Reverse_Order {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner s=new Scanner(System.in);//declaring the Scanner Object
		int n,rev=0,remainder;//declaring the variables
		System.out.println("Enter the number: ");
		n=s.nextInt();//taking the no. as an input
		int m=n;//Assigning the value of n in m
		while(n>0)//It will rotate the loop for 10 times till the value of n
is 0
		{
			remainder=n%10; //calculates the remainder of n
			rev=rev*10+remainder;//calculates the reverse with the help of
remainder
			n=n/10;//it helps to pruning/cut down one digit from n
		}
		System.out.println("The reverse order of "+m+" is "+rev);//printing
the output


	}

}
```

Output:



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Q.8. Create a class Animal with a method makeSound() that prints "Some generic animal sound". Create another class Dog that extends Animal and overrides the makeSound() method to print "Bark". Write a main method to demonstrate calling the makeSound() method on an Animal reference holding a Dog object.

Program:

```
package demo;
class Animal //declaring the Animal class
{
	public void makeSound() //declaring the makeSound method
	{
		System.out.println("Hmmm");//printing some sound
	}
}

class Dog extends Animal //declaring the dog class which inherit to Animal class
{
	@Override
	public void makeSound() //declaring the makeSound method which overrides to
the method of parent class
	{
		System.out.println("Bark");//printing the sound of Dog
	}
}

public class Main
{
	public static void main(String[] args)
	{
		// Creating an Animal reference holding a Dog object
		Animal animal = new Dog();

		// Calling the makeSound() method
		animal.makeSound();
	}
}
```

Output: