LAB2---JAVA

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

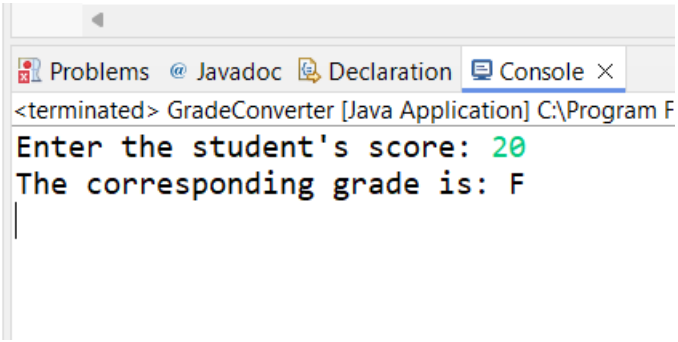
F: 0-59

CODE:

```
package LAB2;
import java.util.Scanner;
public class GradeConverter {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter the student's score: ");
		int score = scanner.nextInt();

		// Determine the grade based on the score
		char grade;
		if (score >= 90 && score <= 100) {
			grade = 'A';
		} else if (score >= 80 && score <= 89) {
			grade = 'B';
		} else if (score >= 70 && score <= 79) {
			grade = 'C';
		} else if (score >= 60 && score <= 69) {
			grade = 'D';
		} else if (score >= 0 && score < 60) {
			grade = 'F';
		} else {
			System.out.println("Invalid score. Score must be
between 0 and 100.");
			return;
		}
```

```
            // Output the grade
            System.out.println("The corresponding grade is: " +
grade);
            scanner.close();}}
```

OUTPUT:



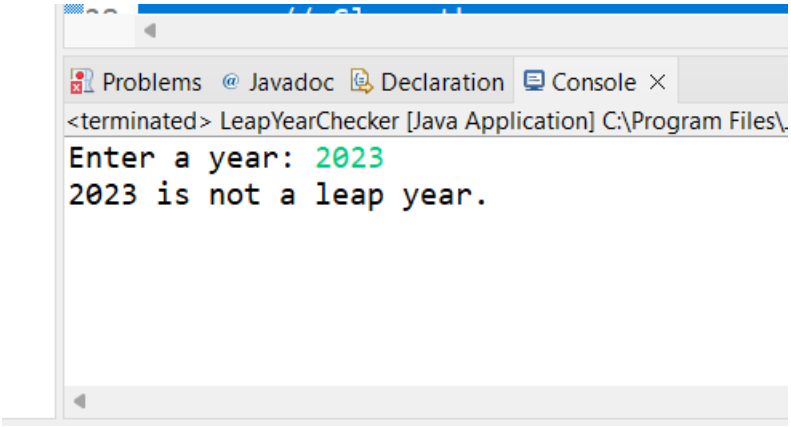
2.Write a program to check if a given year is a leap year. (A year is a leap year if it is divisible by 4 but not by 100, or it is divisible by 400.)

CODE:

```
package LAB2;

import java.util.Scanner;

public class LeapYearChecker {

      public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter a year: ");
            int year = scanner.nextInt();

            // Check if the year is a leap year
            boolean isLeapYear = false;

            if ((year % 4 == 0 && year % 100 != 0) || (year % 400 ==
0)) {
                  isLeapYear = true;
            }

            // Output the result
            if (isLeapYear) {
                  System.out.println(year + " is a leap year.");
```

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

            // Close the scanner
            scanner.close();
      }
}
```

OUTPUT:



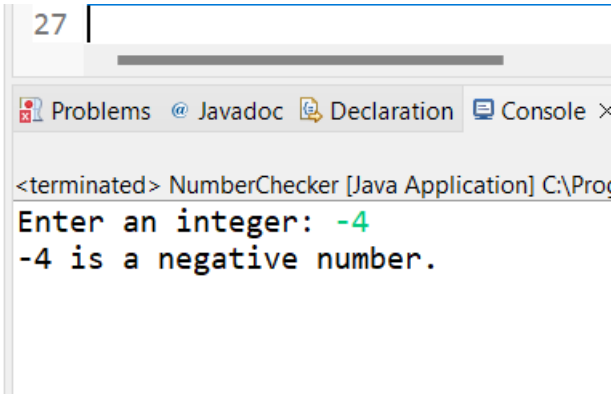
3. Write a program that takes an integer as input and checks if it is positive, negative, or zero.

CODE:

```
package LAB2;

import java.util.Scanner;

public class NumberChecker {

      public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter an integer: ");
            int number = scanner.nextInt();

            // Check if the number is positive, negative, or zero
            if (number > 0) {
                  System.out.println(number + " is a positive
number.");
            } else if (number < 0) {
```

```
                System.out.println(number + " is a negative
number.");
            } else {
                System.out.println("The number is zero.");
            }

            // Close the scanner
            scanner.close();
      }
}
```

OUTPUT:

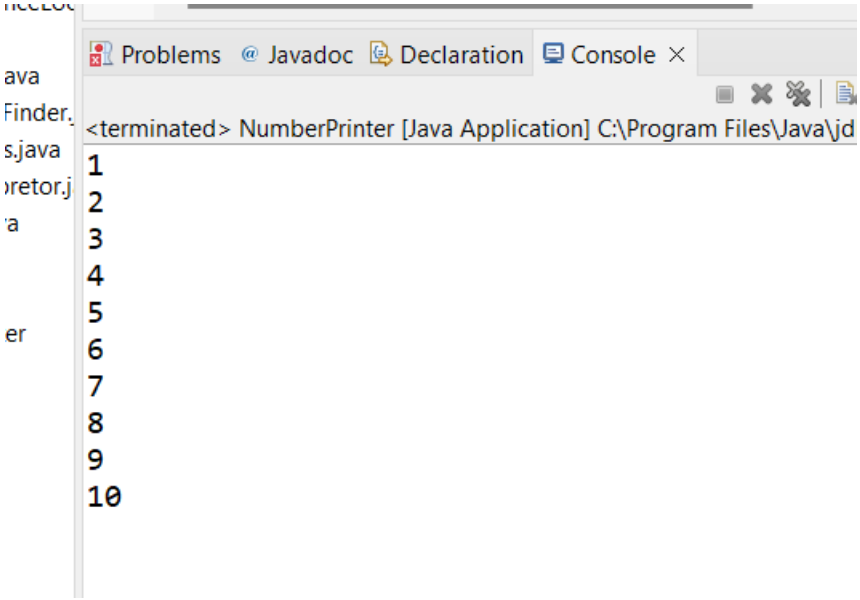


4. Write a program that prints numbers from 1 to 10 using a loop.

CODE:

```
package LAB2;

public class NumberPrinter {

      public static void main(String[] args) {
            // Loop to print numbers from 1 to 10
            for (int i = 1; i <= 10; i++) {
                System.out.println(i);
            }
      }
}
```

OUTPUT:



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

CODE:

```
package LAB2;
import java.util.Scanner;
public class SumCalculator {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter the value of N: ");
		int N = scanner.nextInt();
		int sum = 0;
		// Loop to input N numbers and calculate their sum
		for (int i = 1; i <= N; i++) {
			System.out.print("Enter number " + i + ": ");
			int number = scanner.nextInt();
			sum += number;
		}
		// Output the sum
		System.out.println("Sum of the entered numbers is: " +
sum);
		scanner.close();
	}
}
```

OUTPUT:

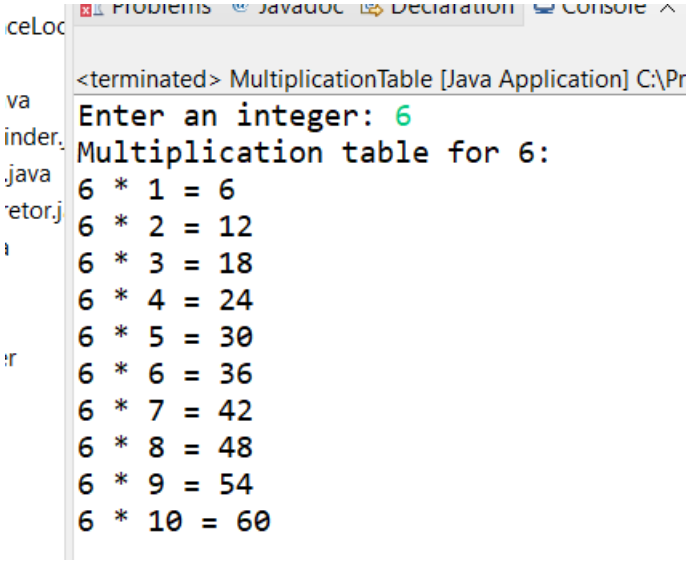
```
<terminated> SumCalculator [Java Application] C:\Program Files\
Enter the value of N: 4
Enter number 1: 4
Enter number 2: 6
Enter number 3: 2
Enter number 4: 5
Sum of the entered numbers is: 17
```

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

CODE:

```
package LAB2;
import java.util.Scanner;
public class MultiplicationTable {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter an integer: ");
		int number = scanner.nextInt();
		System.out.println("Multiplication table for " + number +
":");
		// Loop to print the multiplication table up to 10
		for (int i = 1; i <= 10; i++) {
			System.out.println(number + " * " + i + " = " +
(number * i));}
		scanner.close();
	}
}
```

OUTPUT:

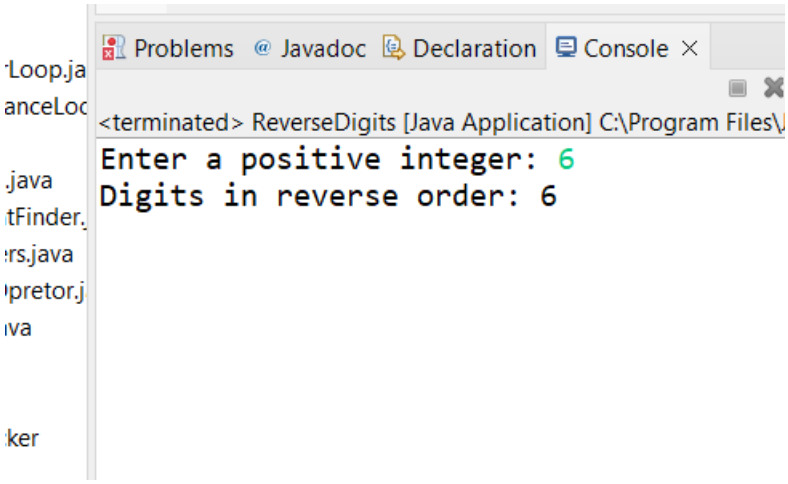


7.Write a program that takes a positive integer as input and prints its digits in reverse order.

CODE:

```
package LAB2;
import java.util.Scanner;
public class ReverseDigits {
	public static void main(String[] args) {
		Scanner scanner = new Scanner(System.in);
		System.out.print("Enter a positive integer: ");
		int number = scanner.nextInt();

		// Validate if the number is positive
		if (number <= 0) {
			System.out.println("Invalid input. Please enter a
positive integer.");
			return;
		}
		System.out.print("Digits in reverse order: ");
		while (number > 0) {
			int digit = number % 10; // Extract the last digit
			System.out.print(digit); // Print the last digit
			number = number / 10; // Remove the last digit from
the number
		}
		scanner.close();
		System.out.println();
	}
}
```

OUTPUT:



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.

CODE:

```
package LAB2;
class Animal {
	public void makeSound() {
		System.out.println("Some generic animal sound");
	}
}
class Dog extends Animal {
	@Override
	public void makeSound() {
		System.out.println("Bark");
	}
}
//Main class to demonstrate calling makeSound()
public class AnimalDemo {
	public static void main(String[] args) {

		Animal myDog = new Dog();

		// Calling makeSound() method
		myDog.makeSound(); }}
```

OUTPUT: