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 MyPackage;
import java.util.Scanner;
public class Grade
{
  Public static void main (String[] args)
  { // Creating a scanner object
    Scanner sc=new Scanner(System.in);
    // Taking ascore of user as input
    System.out.print(“Enter your score: “);
    Int score=sc.nextInt();

    Char grade;
    // checking the score and assigning the 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{
      Grade=’F’;
    }// Printing the grade of user according to it’s score
    System.out.println(“The grade for score “ + score + “ is: “ + grade);
  }
}
```

Output:-

```
Enter your score: 85
The grade for score 85 is: B
```

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 MyPackage;
import java.util.Scanner;
public class LeapYear
{
  Public static void main (String[] args)
  { // Creating a scanner object
    Scanner sc=new Scanner(System.in);
    // Taking a number as input from user
    System.out.print(“Enter a year: “);
    Int year=sc.nextInt();
    // Checking that the year is leap year or not
    If (year % 4 == 0 || year % 400 == 0) {
      System.out.println(year + “ is a leap year.”);
    } else {
      System.out.println(year + “ is not a leap year.”);
    }
  }
}
```

Output:-

```
Enter a year: 2024
2024 is a leap year.
```

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

Code:-

```
package MyPackage;
import java.util.Scanner;
public class NumberCheck
{
  Public static void main (String[] args)
  { // Creating a scanner object
    Scanner sc=new Scanner(System.in);
    // Taking a number as input from user
    System.out.print(“Enter an integer: “);
    Int num=sc.nextInt();
    // Checking that the number is positive, negative or zero
    If (num > 0) {
      System.out.println(num + “ is a positive number.”);
    } else if (num < 0)  {
      System.out.println(num + “ is a negative number.”);
    } else {
      System.out.println(“The given number is a zero.”);
```

```
    }
  }
}
```

Output:-

```
Enter an integer: 10
10 is a positive number.
```

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

Code:-

```
package MyPackage;
public class PrintNumbers {
  public static void main (String[] args)
  { // Printing numbers from 1 to 10 using for loop
    For (int i=1; i<=10; i++)
    {
      System.out.println(i);
    }
  }
}
```

Output:-

```
1
2
3
4
5
6
7
8
9
10
```

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

Code:-

```
package MyPackage;
import java.util.Scanner;
public class SumOfNNumbers
{
  public static void main (String[] args)
  {  // Creating a scanner object
    Scanner sc=new Scanner(System.in);
    // Taking a number as input from user
    System.out.print(“Enter the number of integer: “);
    int n=sc.nextInt();

    int sum=0;
    // Taking numbers from user and storing sum in sum variable
    System.out.println(“Enter the integers:”);
    For (int i = 1; i <= n; i++) {
      int number = sc.nextInt();
      sum += number;
    }
    // Printing the sum of entered numbers
    System.out.println(“The sum of the entered numbers is: “ + sum);
  }
}
```

Output:-

```
Enter the number of integer: 2
Enter the integers:
10
10
The sum of the entered numbers is: 20
```

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

Code:-

```
package MyPackage;
import java.util.Scanner;
public class Table
{
  public static void main (String[] args)
  { // Creating a scanner object
    Scanner sc=new Scanner(System.in);
    // Taking a number as input from user
    System.out.print(“Enter an integer: “);
    Int n=sc.nextInt();
    Sc.close();
    // Printing the table of number entered by user, using for loop
    For (int i=1; i<=10; i++) {
      System.out.println(n+”*”+i+” = “+(n*i));
    }
  }
}
```

Output:-

```
Enter an integer: 5
5*1 = 5
5*2 = 10
5*3 = 15
5*4 = 20
5*5 = 25
5*6 = 30
5*7 = 35
5*8 = 40
5*9 = 45
5*10 = 50
```

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

Code:-

```
package MyPackage;
import java.util.Scanner;
public class ReverseNumber
{
  Public static void main(String[] args)
  { // Creating a scanner object
    Scanner sc=new Scanner(System.in);
    // Taking a number as input from user
    System.out.print("Enter a positive integer: ");
    Int number = sc.nextInt();
    // Converting number into string
    String numStr = Integer.toString(number);
    String reversedNum = "";
    // Looping on string and storing character in reversedNum variable at
ith position of string
    For (int reversedNum i = numStr.length() – 1; i >= 0; i--) {
      += numStr.charAt(i);
    }
    // Printing the number in reverse order
    System.out.println(number + " in reverse order: " + reversedNum);
  }
}
```

Output:-

```
Enter a positive integer: 25
25 in reverse order: 52
```

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 MyPackage;
class Animal {
  public void makeSound() {
    System.out.println("Some generic animal sound.");
  }
}

class Dog extends Animal {
  Public void makeSound() {
    System.out.println("Bark");
  }
}
```

```
Public class DogBark
{
  Public static void main (String[] args)
  {
    // Creating a Dog object
    Dog dog = new Dog();

    // Creating an Animal reference holding a Dog object
    Animal animal = dog;

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

Output:-

```
Bark
```