

- 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

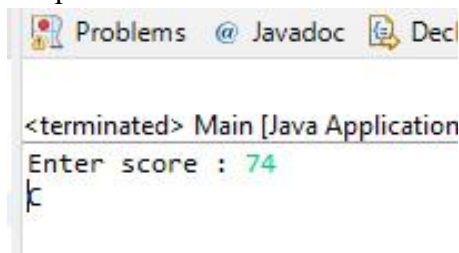
D: 60-69

F: 0-59

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package
public class Main {
    public static void main(String []args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter score : ");
        int score = sc.nextInt();
        System.out.println(func(score));          //calling the method6
    }
    static char func(int score) {
        char grade = '\0';
        if (score >= 90) {
            grade = 'A';
        } else if (score >= 80) {
            grade = 'B';
        } else if (score >= 70) {
            grade = 'C';
        } else if (score >= 60) {
            grade = 'D';
        } else {
            grade = 'F';
        }
        return grade;          // returning the grade
    }
}
```

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.)

Program :-

```
package package_demo; // package
public class Main {
    public static void main(String []args) {
        int year = 2002;
        System.out.println(year + " : " + func(year)); //calling the method
    }
    static boolean func(int year) { //the method contains logic for leap year
        if ( (year%4 == 0 && year%100 != 0) || year%400 == 0 ) {
            return true;
        } else {
            return false;
        }
    }
}
```

```

    }
}

```

Output :-



```

<terminated> Main [Java Application] C:\Use
2000 : true

```

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

Program :-

```

package package_demo; // package
import java.util.*; //importing java.util package
public class Main {
    public static void main(String []args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number : ");
        int num = sc.nextInt();
        System.out.println(num + " : " + func(num)); //method calling
    }
    static String func(int num) {
        String ans;
        if (num < 0) {
            ans = "Negative";
        } else if (num == 0) {
            ans = "Zero";
        } else {
            ans = "positive";
        }
        return ans;
    }
}

```

Output :-



```

<terminated> Main [Java Application] C:\U
Enter a number : 0
0 : Zero

```

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

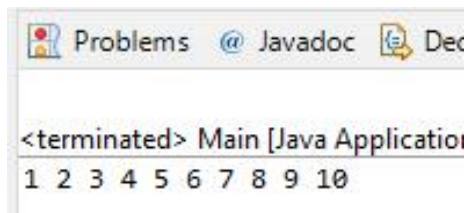
Program :

```

package package_demo; // package
public class Main {
    public static void main(String []args) {
        for (int i = 1; i <= 10; i++) {
            System.out.print(i + " ");
        }
    }
}

```

Output :-



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

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package
public class Main {
    public static void main(String []args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number : ");
        int x = sc.nextInt();
        sc.close();
        System.out.println(func(x));    //method calling
    }
    static int func(int x) {
        int sum = 0;
        while (x != 0) {                //logic
            sum = sum + (x % 10);
            x = x / 10;
        }
        return sum;
    }
}
```

Output :-

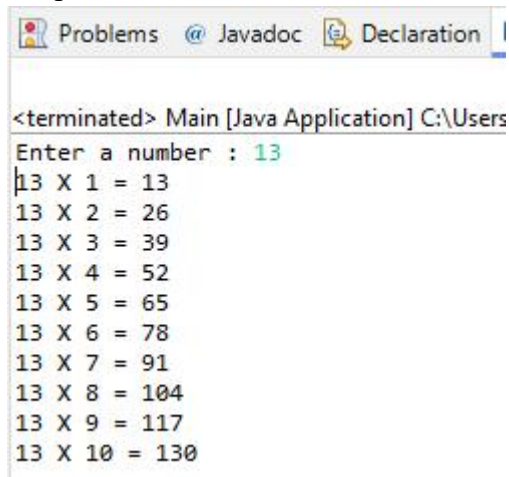


- 6) Write a program that takes an integer as input and prints its multiplication table up to 10.

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package
public class Main {
    public static void main(String []args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number : ");
        int x = sc.nextInt();
        sc.close();
        for (int i = 1; i <= 10; i++) {
            System.out.println(x + " X " + i + " = " + (x*i));
        }
    }
}
```

Output :-



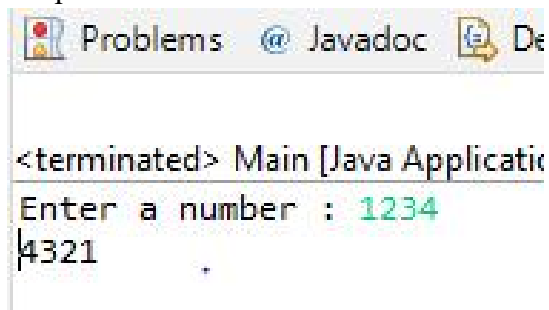
```
<terminated> Main [Java Application] C:\Users
Enter a number : 13
13 X 1 = 13
13 X 2 = 26
13 X 3 = 39
13 X 4 = 52
13 X 5 = 65
13 X 6 = 78
13 X 7 = 91
13 X 8 = 104
13 X 9 = 117
13 X 10 = 130
```

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

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package
public class Main {
    public static void main(String []args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number : ");
        int x = sc.nextInt();
        sc.close();
        System.out.println(func(x));    //method calling
    }
    static int func(int x) {
        int res = 0;
        while (x != 0) {                //logic
            res = (res * 10) + (x % 10);
            x = x / 10;
        }
        return res;
    }
}
```

Output :-



```
<terminated> Main [Java Application]
Enter a number : 1234
4321
```

- 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 package_demo; // package
import java.util.*; //importing java.util package

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

class Dog extends Animal { //child class
    @Override
    void makeSound() {           //overriding here
        System.out.println("Bark");
    }
}

public class MainDemo {
    public static void main(String []args) {
        Animal obj = new Dog();
        obj.makeSound();         //calling method
    }
}
```

Output :-

