



**UNIVERSIDAD NACIONAL AUTÓNOMA DE
MÉXICO**

FACULTAD DE ESTUDIOS SUPERIORES ARAGÓN

INGENIERÍA EN COMPUTACIÓN

Estructura de datos

Tarea 11

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Grupo: 1360

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```
7 | 1---|
6 | 1---|
5 | 1---|
26| 1---|
3 | 1---|
2 | 1---|
1 | 1---|
26|-----
7 | 1---|
6 | 1---|
5 | 1---|
3 | 1---|
2 | 1---|
1 | 1---|
```

```
public T obtenerMedio() { 1 usage
    if (isEmpty()) {
        throw new RuntimeException("Stack is empty");
    }
    return obtenerMedioRecursivo(length(), tamañoActual: 0);
}

private T obtenerMedioRecursivo(int tamañoOriginal, int tamañoActual) { 2 usages
    T elemento = pop();

    int posicionMedia = (tamañoOriginal - 1) / 2;
    if (tamañoActual == posicionMedia) {
        return elemento;
    } else {
        T medio = obtenerMedioRecursivo(tamañoOriginal, tamañoActual: tamañoActual + 1);
        push(elemento);
        return medio;
    }
}
```

```
1
2 public class Main {
3     public static void main(String[] args) {
4         Stack<Integer> stack = new Stack<>();
5         stack.push(1);
6         stack.push(2);
7         stack.push(3);
8         stack.push(26);
9         stack.push(5);
10        stack.push(6);
11        stack.push(7);
12        System.out.println(stack);
13        System.out.println(stack.obtenerMedio());
14        System.out.println(stack);
15
16
17    }
18 }
19
```

The screenshot displays the IntelliJ IDEA IDE interface. On the left, the Project Explorer shows the project structure for 'recursividad', including folders like 'idea', 'out', and 'src', and files like 'Main', 'Stack', 'SumaDeNumeros', and '.gitignore'. The main editor window shows the code for 'SumaDeNumeros.java'. The code defines a recursive function 'sumaNumeros' that calculates the sum of digits of a number. The 'main' method calls this function with the value 10232 and prints the result. The bottom panel shows the output of the program, which is '8 Es es la suma de: 10232', indicating that the sum of the digits of 10232 is 8.

```
1 public class SumaDeNumeros {
2     public int sumaNumeros(int numeros) { 2 usages
3         if (numeros == 0) {
4             return 0;
5         }
6         return (numeros % 10) + sumaNumeros(numeros / 10);
7     }
8     public static void main(String[] args) {
9
10        System.out.println(new SumaDeNumeros().sumaNumeros(10232) + " Es es la suma de: 10232");
11
12    }
13
14 }
15
```

SumaDeNumeros x

C:\Users\rodri\.jdk\openjdk-22.0.2\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.2.1\lib\idea_rt.jar=52249:C:\Program Files\JetBrains\IntelliJ IDEA 2024.2.1\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath C:\Users\rodri\IdeaProjects\recursividad\out\production\recursividad SumaDeNumeros

8 Es es la suma de: 10232

Process finished with exit code 0