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Aragón

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Materia: Estructura de Datos

Grupo: 1360

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mergeSort

```
class Main {

    public static void mergeSort(int[] array, int left, int right) {
        if (left < right) {
            int middle = (left + right) / 2;

            mergeSort(array, left, middle);
            mergeSort(array, middle + 1, right);

            merge(array, left, middle, right);
        }
    }

    public static void merge(int[] array, int left, int middle, int
right) {
        int n1 = middle - left + 1;
        int n2 = right - middle;

        int[] leftArray = new int[n1];
        int[] rightArray = new int[n2];

        System.arraycopy(array, left, leftArray, 0, n1);
        System.arraycopy(array, middle + 1, rightArray, 0, n2);

        int i = 0, j = 0;
        int k = left;

        while (i < n1 && j < n2) {
            if (leftArray[i] <= rightArray[j]) {
                array[k] = leftArray[i];
                i++;
            } else {
                array[k] = rightArray[j];
                j++;
            }
            k++;
        }

        while (i < n1) {
            array[k] = leftArray[i];
            i++;
            k++;
        }

        while (j < n2) {
            array[k] = rightArray[j];
            j++;
            k++;
        }
    }

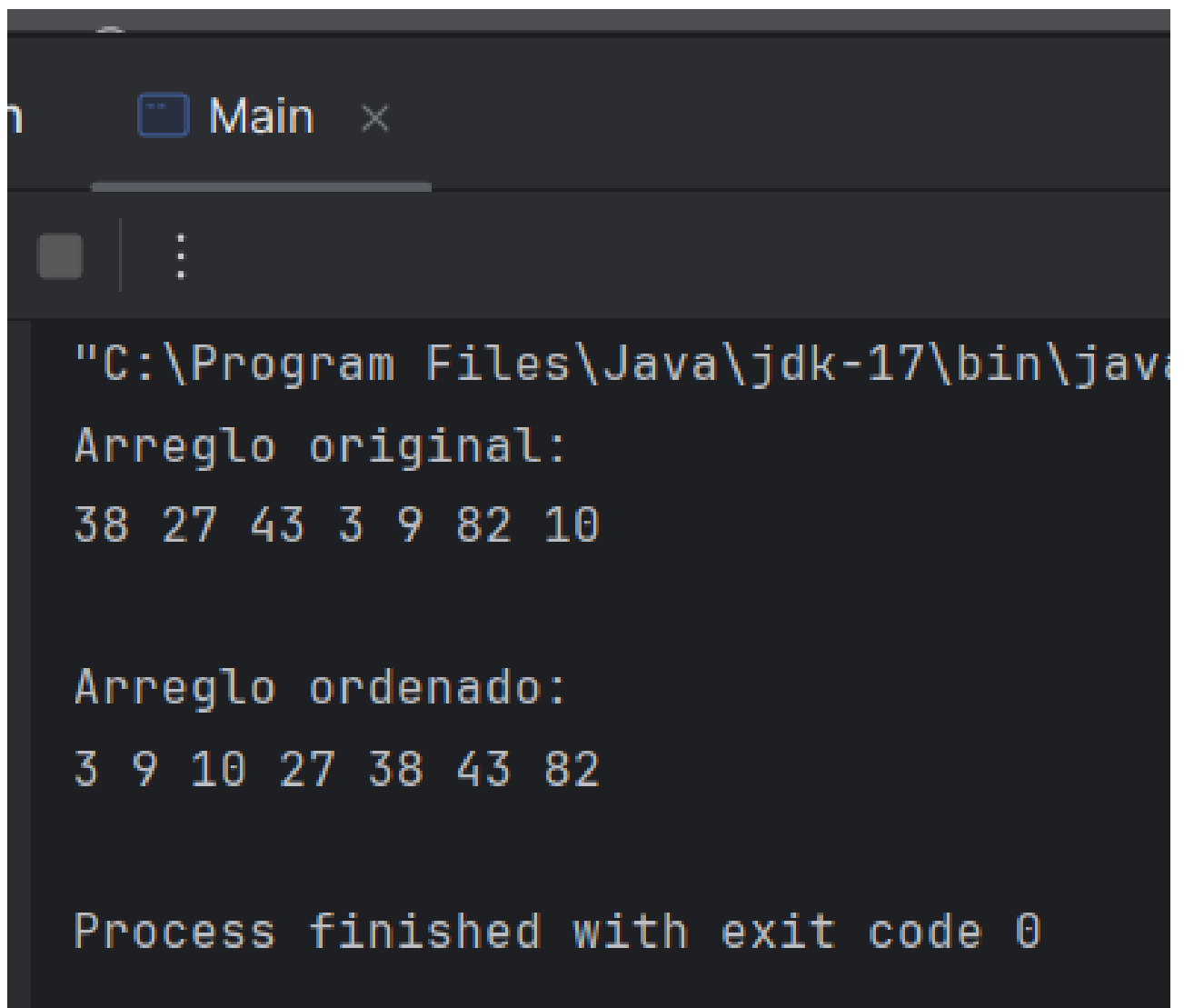
    public static void main(String[] args) {
        int[] array = {38, 27, 43, 3, 9, 82, 10};

        System.out.println("Arreglo original:");
        printArray(array);
    }
}
```

```
mergeSort(array, 0, array.length - 1);

System.out.println("\nArreglo ordenado:");
printArray(array);
}

public static void printArray(int[] array) {
    for (int j : array) {
        System.out.print(j + " ");
    }
    System.out.println();
}
}
```



```
"C:\Program Files\Java\jdk-17\bin\java
Arreglo original:
38 27 43 3 9 82 10

Arreglo ordenado:
3 9 10 27 38 43 82

Process finished with exit code 0
```