

1. Statement of the problem

There is a BlueJ project with some classes and interfaces similar to the ones from the practice sessions. In particular, there is an interface called **Pila** (stack in Spanish) where the typical operations to access a stack are declared. In order to complete the project, you have to:

1. Implement the **PilaAL** class so that it implements all the methods from the **Pila** interface. You have to use an instance of the **ArrayList** class to store the elements of the stack. Moreover, the **PilaAL** class must implement a **toString** method suitable for showing the output in the test.

Remember that **ArrayList** class offer the following methods:

- **add(T)**: add an element,
- **remove(int)**: remove an element. The index position is given as argument and the method returns the removed object,
- **get(int)**: return the element from a given index/position,
- **size()**: obtain the number of elements,
- **isEmpty()**: check if the array is empty.

As a reminder of the linear data structure Pila (stack), the code of the **PilaIntArray** class is provided. This class implements a stack containing integers and using arrays.

2. Test

When the project is successfully completed, the execution of the **main** method from the **AppPilaAL** class shows the following output on the console (*cima* means “top”):

Pila(enteros)= cima: 10 / 9 / 8 / 7 / 6 / 5 / 4 / 3 / 2 / 1

Pila(desapilados 5 elementos)= cima: 5 / 4 / 3 / 2 / 1

Pila(apilados 3 elementos)= cima: 3 / 2 / 1 / 5 / 4 / 3 / 2 / 1

Pila(caracteres)= cima: f / e / d / c / b / a

Pila(desapilados 3 elementos)= cima: c / b / a

Pila(apilados 4 elementos)= cima: n / m / l / k / c / b / a

3. Available time to solve the problem

The student has 45 minutes to solve the problem.