Assignment 1

Create the **ArrayOfInts** class. This class should have:
- An attribute that represents an array of int values.
- Attribute *counter* that represents the current number of elements in the array. Its initial value is 0.
- A constructor that has one input parameter representing the maximum number of elements of the array (i.e., its capacity). The array should be created within the constructor and its capacity should be set to the value of the constructor's input parameter.
- A method for displaying (printing on the console) the first element of the array.
- A method for displaying the capacity of the array (i.e., the maximum number of elements).
- A method for adding a new element (i.e., a number) to the array; the number to be added to the array is passed to the method as its input parameter. Before adding the new element, it should be checked if there is space for new elements. If the array is already full, an error message should be printed on the console.
- A method for displaying (on the console) all the elements of the array.
- A method for checking if the given number is in the array; the number to be checked is passed to the method as its input parameter; if this number is in the array the method returns true, otherwise it returns false.
- A method for computing the sum of the numbers in the array; the method returns the computed sum as its return value.
- A method for identifying the biggest number in the array; the method returns the identified number as its return value.

Create the **TestArrayOfInts** class. Within its *main* method, create an object of the *ArrayOfInts* class and set the capacity of the array to 4. Add numbers 5 and 19 to the array and display (on the console) all the elements of the array.

Assignment 2

Create the **ArrayOfDecimals** class. This class should have:
- An attribute that represents an array of decimal numbers.
- Attribute *counter* that represents the current number of elements in the array. Its initial value is 0.
- A constructor with one input parameter representing the maximum number of elements (i.e., the capacity) of the array. The array should be created within the constructor and its capacity should be set to the value of the constructor's input parameter.
- A method for adding a new element (i.e., a number) to the array; the number to be added to the array is passed to the method as its input parameter. Before adding the new element, one should check if there is still space for new elements in the array. If the array is already full, an error message should be printed on the console.
- A method for computing the product of the numbers in the array; the method returns the computed product as its return value.
- A method for identifying the smallest number in the array; the method returns the identified number as its return value.

Create the **TestArrayOfDecimals** class. Create an object of the class *ArrayOfDecimals* in the *main* method, and set the capacity of the array to any number you choose. Add a couple of elements (i.e., decimal numbers) to the array and display (on the console) the smallest element of the array.