

TD1

Object Oriented Programming

1-

1.1 Implement a class **OperationArray** that contains:

- A static method to fill an array of integers
- A static method to sort by ascending order the array of integers
- A static method to display the array of integers
- A method **Main** that creates an array of 10 integers, fills it, sorts it and displays it.

1.2

- a) Add a static method **countEven** to the class **OperationArray** that counts and returns the number of even numbers in the array of integers.
- b) Test the method **countEven** in the method **Main**.

1.3

- c) Add a static method **countPrime** to the class **OperationArray** that counts and returns the number of prime numbers in the array of integers.
- d) Test the method **countPrime** in the method **Main**.
- e) Add a static method called **copyFromArrayToArray** that copies the elements of the array from the index I to J into another array and in same indexes.

2-

Write a method **display(int dimension)** that displays a matrix as follow:

Example : dimension=4

```
****
****
****
****
```

3-

Write a method **display(int base, int height)** that displays the following:

```
1
11
111
1111
11111
111111  —————> base
      ↑
      height
```

4-

Write in C# a static method *copyFromAToB* (*int [] A, int [] B*) which:

- Fills the array **B** as follow:
Each element of **B** is equal to the sum of two successive elements of **A**.
Only the first element of **B** corresponds to the first element of **A**.

Example

Array **A**

6	2	4	8	0	5	3	9
---	---	---	---	---	---	---	---

Array **B**

6	8	6	12	8	5	8	12
↓	↓	↓	↓	↓	↓	↓	↓
= 6	= 6 + 2	= 2 + 4	= 4 + 8	= 8 + 0	= 0 + 5	= 5 + 3	= 3 + 9