********** ATTENTION: Attendance in lab is mandatory for all students. NO EXCEPTION!!!! **********

Lebanese University
Faculty of Science
Section I

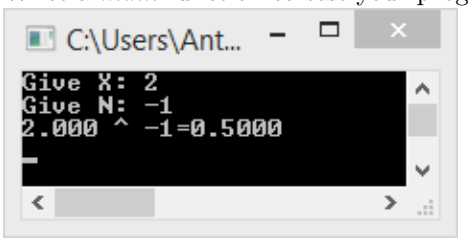
BS - Computer Science
2018-2019

I2206 - INFO 205
Data Structures
LS 2 : Recursive functions

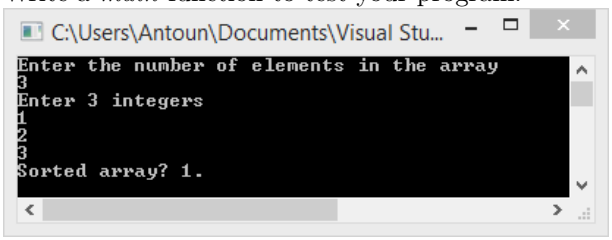
ATTENTION !

You should upload your solution at the latest by Saturday, February 23, 2019 11 p.m. via the web page of the course on www.antoun.me.

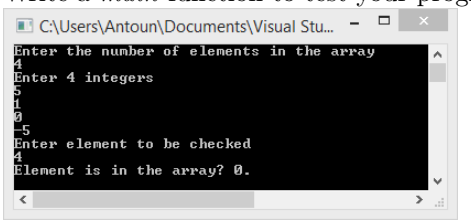
Exercise 1 Write a recursive function that calculates X^N where X is a float and N is an integer.
Prototype : `float power(float X, int N)`
Write a *main* function to test your program.



Exercise 2 Write a recursive function that checks whether an array is sorted.
Prototype : `int is_sorted(int tab[], int N)`
Write a *main* function to test your program.



Exercise 3 Write a recursive function testing whether a specific element is in an array.
Prototype : `int in_array(int tab[], int N, int element)`
Write a *main* function to test your program.



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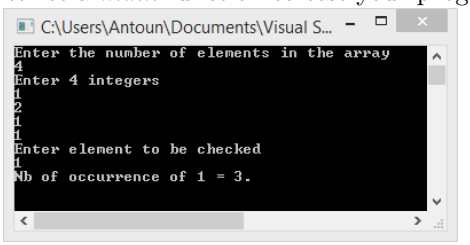
Exercise 4 Write a recursive function that returns the number of occurrences of an element in an array.

Prototype : `int nb_occurrence(int tab[], int N, int value)`

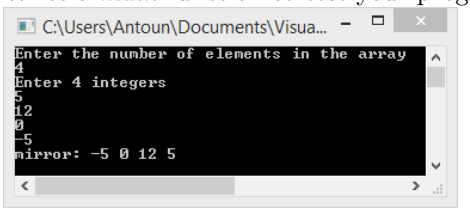
Write a *main* function to test your program.



Exercise 5 Write a recursive function that mirrors the elements in an array.

Prototype : `void mirror(int tab[], int start, int end)`

Write a *main* function to test your program.



Exercise 6 Write a recursive function that, given an integer X, determines the position of the closest value of X in an array.

Prototype : `int closest(int tab[], int N, int X, int position)`

Write a *main* function to test your program.