CSE 110
Online on Array
Subsection: B1

Time : 50 minutes **Full Marks : 20**

Problem #1
(10 marks)

Write a program that inserts and integer in a sorted array of integers such that the array remains sorted even after insertion. First, the number of integers `n` will be given as input such that `(1<=n<=30)`. Then take `n` integers as input (It is assumed that these `n` integers will be in ascending order). Finally, take as input an integer `ins` which needs to be inserted in the sorted array. You need to print the array with the inserted element. **Note: you must modify the array; just printing the values is not sufficient.**

Sample Input	Sample Output
5 1 2 3 4 6 5	1 2 3 4 5 6

Problem #2
(10 marks)

Write a program that rescales an array of numbers between 0 to 1. First, take the number of elements in the array `n`, as input. Then read `n` numbers. Then, rescale each element of the array **in place** using the following equation,

$$x_i' = \frac{x_i - x_{min}}{x_{max} - x_{min}}$$

Here, x_i' is the rescaled value of x_i where x_{min} and x_{max} correspond to the maximum and minimum value of x_i `(1<=i<=n)`. Finally, print the rescaled array of numbers. **Note: you must modify the array; just printing the values is not sufficient.**

Sample Input	Sample Output
5 0 2 3 4 5	0.0 0.4 0.6 0.8 1
5 11 1 2 5 3	1.0 0.0 0.1 0.4 0.2