Full name: **ID**

Lab 9:

Give the following an array of integers in MIPS:

1. Suppose that the array *Array* is zero-terminated. Write an assembly procedure len(Array) using stack that returns the length of the array (20points). Run it step by step and highlight the address, value of stack.

.data
Array: .float 43.01, 34.06, XY.09, 78.9, 64.98, 2126.1, 643.2, 451.4 ,423.4, 45.5, 566, 0
Where XY is the whole digit of your ID, e.g. ITITIU22016 → XY is 22016

2. Write sort(Array) procedure that prints out the ordered array using Quick sort (40points)
   Hint: https://www.programiz.com/dsa/bubble-sort

intArray: .word 43, 6543, 34, 54, 4232, 64, 526, 643, 6435 ,423, 4236, 566, **XY,** 0
where XY is the last of two digits of your ID

Please compare this sort with Bubble-sort
Run it step by step and highlight the address, value of calling Sort.

3. Write a secondMax(Array) that _nds second highest value in the array. This procedure should call the sort(Array) procedure in Exercise 2. Hint: you can use any sort to find this value (15points)

intArray: .word 43, 6543, 34, 54, 4232, 64, 526, 643, 6435 ,423, 4236, 566, **XY,** 0
where XY is the last of two digits of your ID

4. Write an assembly procedure normalized(Array) to normalize array and print it out (before and after normalize) (25points). Hint: divide the whole array with the maximum Array.

intArray: .word 43, 6543, 34, 54, 4232, 64, 526, 643, 6435 ,423, 4236, 566, **XY,** 0
where XY is the last of two digits of your ID