

Assignment - 02

1. Leader Finder

You are given an array of integers. An element in the array is considered a **leader** if it is greater than all the elements to its right side. The rightmost element is always considered a leader. For example: the array {16, 17, 4, 3, 5, 2}, leaders are 17, 5 and 2.

Write a C program that takes an array of integers as input and prints the leader elements in the array. Your program should first take the size of the array as input. Then you should take the elements as input from the user. Then print the leaders as output.

Sample Input	Sample Output
Array: [16, 17, 4, 3, 5, 2]	Leaders: 17 5 2
Array: [8, 9, 12, 6, 2]	Leaders: 12, 6, 2
Array: [1, 2, 3, 4, 5]	Leaders: 5

2. Sorting

First of all, take the number of elements n ($n < 100$) and then take the elements as input. After that, take two numbers x and y where $0 \leq x \leq y \leq n-1$. Your task is to sort the elements from 0 to x in ascending order, the elements from y to $(n-1)$ in descending order and keep the elements between x and y as they are. **You CANNOT use any library function except for input-output purpose. You CANNOT use any extra character array.**

Sample Input	Sample Output
<pre> 10 1 2 6 1 5 -2 6 0 9 7 3 6 </pre>	<pre> 1 1 2 6 5 -2 9 7 6 0 </pre>
<pre> 3 1 -5 7 0 1 </pre>	<pre> 1 7 -5 </pre>

Each problem contains **7.5 marks**. The mark distribution is as follows:

Mark Distribution:

7.5

1. Properly taking inputs and saving them. (2)
2. Solving logic and proper implementation. (4.5)
3. Properly showing outputs. (1)

Submission guideline:

Solve each problem in a single C file. Create a folder with your student ID. Put the 2 source files (only .c files) into the folder. Zip the folder and submit it in **LMS**. If your ID is 12345, the zip file should be 12345.zip.

Deadline: 21-10-2023 (11:00 AM) Please remember this is a strict deadline. Under no circumstances, this deadline will change. **Failure to submit during the deadline will result in zero grades.**

DO NOT COPY from the internet, seniors, batchmates, or any other sources. You are always welcome to discuss and find the solutions together, but you must write your own code. If found out, there will be -100% marks reduction.

DO NOT PUT the question in chatGPT and ask it to write the answer. You may use the tool to learn more about the concepts or take additional help (such as how to use certain methods or how to do certain concepts) but do not directly use it to write code for the problem. If found out, there will be -100% marks reduction.