

CSE220: Data Structures (Lab)

Fall 2024
Lab Quiz - 06
Duration: 30 Minutes

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Name: ID: Section:

## Question 1 [15 Points]

You are given an **array of integers** and values of  $\dot{x}$  and  $\dot{y}$ . You need to create a new heap consisting of the numbers between  $\dot{x}$ <sup>th</sup> highest position and  $\dot{y}$ <sup>th</sup> highest position from the array.

## Note:

- 1. You need to figure out which heap to use.
- 2. You are not allowed to use any direct sorting, searching on the array.
- 3. You are not allowed to use any built-in functions except len()
- 4. You can assume insert() and swim() functions are already implemented. You have to implement whatever else is needed.

Sample Input:	Sample Output:			
array = [11, 15, 8, 2, 31, 23]	result = [23, 15, 11, 8]			
x = 2				
y = 5				
Explanation:				
When the array is sorted [31, 23, 15, 11, 8, 2]	Here,			
the values are in highest to lowest order	x = 2, 2-nd highest: 23			
For each position of n we can say, If:-	y = 5, 5-th highest: 8			
n = 1 (Position-1), 1-st highest: 31	Numbers between 2nd and 5th highest in			
n = 2 (Position-2), 2-nd highest: 23	the given array are: 23, 15, 11, 8			
	So the new heap will have these values.			
n = 5 (Position-5), 5-th highest: 8				
n = 6 (Position-6), 6-th highest: 2				