Programming assignment 3.

Due date: Friday, March 13, 2020 at 11:59pm

Part A.

Implement a function called *Quick_select* to find the **k^{th} least element** on a given array. (The average running time of your algorithm should be O(n)) (***Hint***: Use partitioning algorithm)

1. Request the user to enter a positive integer, and call it ***n***.
2. Generate ***n*** random integers between *-100* to *100* and save them in array **a**.
3. Print the generated array.
4. Request the user to enter a number between *1* to *n* (k least element).
5. Call your *Quick_select* function to find and print the k^{th} least element.

Part B.

Modify your algorithm to return the ***max* k numbers** from an *unsorted* array. (The average running time of your algorithm should be *O(n)*)

(***Example:*** a = [4 2 0 10 1 6], k = 3 ➔ Output = [4 10 6])