Problems for Today [23-08-2024]

1. Implement the Quicksort algorithm and test the same with the test cases given. Also, implement the verification algorithm to check whether your implementation is correct. Test case are attached.

2. Design and implement a randomized algorithm to find the kth smallest element in a given array of n elements. The algorithm should run in O(n) time on average. Test case is attached.

   Ist test case: 5th-smallest element is 5469.

   2nd test case : 50th smallest element is 4715.

INSTRUCTIONS:

- All the programs should be stored in a folder by the name " YOUR ROLL NUMBER_DATE" (All letters in the roll number should be in caps). The Folder should be zipped before uploading.
- It should be uploaded through Moodle.
- The test cases (if any) are provided along with the problems.