National Institute of Technology Calicut
Department of Computer Science and Engineering
Third Semester B. Tech.(CSE)
CS2092D Programming Laboratory
Assignment 4 Modification

Naming Conventions for Submission

The source codes must be named as:

ASSG<NUMBER>_<ROLLNO>_<FIRST-NAME>_MOD.c

(For example: $ASSG1\_BxxyyyyCS\_LAXMAN\_1.c$). If you do not conform to the above naming conventions, your submission might not be recognized by our automated tools, and hence will lead to a score of 0 marks for the submission. So, make sure that you follow the naming conventions.

Standard of Conduct

- Violation of academic integrity will be severely penalized. Each student is expected to adhere to high standards of ethical conduct, especially those related to cheating and plagiarism. Any submitted work MUST BE an individual effort. Any academic dishonesty will result in zero marks in the corresponding exam or evaluation and will be reported to the department council for record keeping and for permission to assign F grade in the course. The department policy on academic integrity can be found at: http://cse.nitc.ac.in/sites/default/files/Academic-Integrity_new.pdf.

QUESTION

1. In a library, the books are arranged on the rack according to their RFID number. The RFID number of a book is in the range [102 104]. The books are arranged on the rack according to the ascending order of their RFID number. A bundle of new books has arrived and the library staff needs to arrange them in racks. Can you help the library staff to sort the books according to the RFID number? You plan to apply Quick Sort in sorting the books according to their RFID number. Write a C program, using Quick Sort, that can sort the books according to their RFID number. Note: The pivot element selected for partitioning the array always needs to be the median of the elements in the array. The median of the elements in an array is that element that is there at the middle of the array if you consider the sorted order of the elements in the array. It is important that you do not use sorting to find the median.

   Input Format:

   - The first line of the input contains an integer n ϵ [0, 103], the number of new books arrived.
   - The second line lists the RFID numbers of each newly arrived book, separated by a single space. RFID numbers are in the range [10^2, 10^4].

   Output Format:

   - A single line of the output contains the RFIDs of newly arrived books in sorted order, separated by a single space. .

   Sample Input 1:
   5
   105 501 206 106 320
   Sample Output 1:
   105 106 206 320 501

   Sample Input 2:
   4
   2026 2048 2032 2030
   Sample Output 2:
   2026 2030 2032 2048