

PDS Lab Section 4

Assignment 07

27th September 2024

Time: 1 Hours, Marks: 75

Write a C program that does the following. **Do not use Global variables.**

- a) Read an integer n ($n < 20$) and an array A of n integers. Print n and A .
- b) Write a function `maxMin(A[])` that takes an array A as input and returns the following four values: the largest element, the distinct second largest element, the smallest element, and the distinct second smallest element from the array. You may assume that these distinct elements exist, even in the presence of duplicates. Use appropriate function arguments so that all four values are returned to the `main()` function after calling using call by reference through pointer-based arguments / parameter passing. In the `main()` function, call the `maxMin(A[])` function appropriately, and then print the largest, second largest, smallest, and second smallest values.
- c) Write a function `swapMaxMin(A[])` that takes an array as input and swaps the largest and smallest elements of the array. In the `main()`, print the original array before the call and the modified array with the swapped values after the call.
- d) Write another function `shiftArray(A[], k)` that takes an array A and an integer k representing the number of positions to shift the array elements circularly to the right. The array should be modified through the call. In the `main()` function, after reading k , print k , call the function to shift A , and print the array before the call and the modified array A after the call.

Write the C Program above. Save the file as `A07_<Roll Number>.c` (example `A07_24IM10002.c`). Build, Run and test it for different test inputs. Then upload the .c file for the Assignment (Remember to check your C program for readability, add comments explaining the code).