

Introduction to Programming and Data Structures Assignment 01

Maximum Marks: 100

Submission Deadline: **2022-Aug-24**

Write C programs for the following problems.

AP0101: find first duplicate number in a given array.

- `int first_duplicate_number(int * Arr, int size)`
- Takes address of an Array and its size and Outputs the first duplicate number.

AP0102: find second highest number in an integer array.

- `int second_highest_number(int * Arr, int size)`
- Takes address of an Array and its size and Outputs the second highest number.

AP0103: perform right rotation in array by k positions.

- `void right_rotate(int * Arr, int size, int no_of_rotation)`
- Takes address of an Array, its size and number of number of rotation and Outputs Nothing. The changed array should be printed in main function.

AP0104: merge two arrays.

- `void merge_two_arrays(int * A, int m, int * B, int n, int *C, int k)`
- Takes addresses and size of the arrays and outputs nothing. The array C should be the new merged array where $k = m + n$. C should be allocated and printed in main function.

AP0105: sort an integer array in ascending order.

- `void sort_array(int * A, int size)`
- Takes addresses and size of the array and outputs nothing. The array A should be allocated and printed in main function before and after sorting..

For all problems, use functions and call them from main.

[20+20+20+20+20=100]