

# SDM COLLEGE OF ENGINEERING & TECHNOLOGY, DHARWAD

## Department of Computer Science and Engineering

### Laboratory Assessment

Course. Title & Code : **Advance C Programming (22PLC25E)**

Semester : II

Date : 14-08-2023

1. Write a function `maxmin ()` which returns maximum and minimum element of a given list of 'n' elements. Use this function to compute highest and lowest marks of 'n' students in a particular course. Process the array elements using pointers.
2. Write a modular C program to print the sum of primary diagonal elements using pointer notations.
3. Define a structure named `census` with the following 3 members.
  - i. A character array `city[]` to store names.
  - ii. A long integer to store population of the city.
  - iii. A float member to store the literacy level.

Write a modular C program to do the following.

- i. To read details of 'n' cities randomly.
  - ii. To sort the list based on population and display the sorted list.
4. Define a structure called **`student_info`** that will contain USN, Name of the student, marks in 3 IAs and CTA as its members. Using **`student_info`**, write a modular C program to read the information about 50 students into an array **`Students`**. Compute and print CIE (sum of best 2 IAs+CTA) marks of each student in the following format:  
USN Name IA1 IA2 IA3 CTA CIE.
  5. Write a C program that uses list of integers whose size will be specified interactively at runtime and print the count of odd and even numbers in the list.
  6. Write a C program to store a character string in a block of memory space created by `malloc ()` and then modify the same to store a largest string.
  7. Write a C program to open a file named **INVENTORY** and store in it the following data.:

Item name	Number	Price	Quantity
AAA-1	111	17.5	115
BBB-2	125	36	75
CCC-3	247	31.75	104

Extend the program

- i. To read the data from the file **INVENTORY** and display the inventory table with the values of each item.
8. Write a C program to open a file named **EMPLOYEE-Details** and store in it the following data.:

<b>Employee name</b>	<b>Age</b>	<b>Basic-Salary</b>
AAA	38	20000
BBB	42	19300
CCC	50	15000

Extend the program to read the data from the file and compute the total tax deductions  
If the basic salary is ---

10000<=Basic-Salary<15000 10% of the basic salary

15000<=Basic-Salary<25000 10% of the basic salary

9. Write a modular C program to sort the given marks of 'n' students in the course of C-programming using insertion sort technique.
10. Write a modular c program to search an element from the array of 'n' elements using Binary search algorithm. If element is found return its index value otherwise return -1.

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<b>Question #</b>	1	2	3	4	5	6	7	8	9	10
<b>COs</b>	1	1	1	1	2,5	2,5	3	3	4	4

### **Faculty Members**

- 1.
- 2.
- 3.