

CS1580 - Section "G" | Lab 9: Array of Structures and Arrays

Maria Anjelin J. Bosco

Objective

This lab is to make you familiar with concept of arrays and arrays of structures. You also have to use Multiple Files including the header file.

Assignment: Creating a Student Database

In this program, a structure, student need to be created. This structure has 2 members: `roll (integer)` and `marks (integer)`. You have to create a **structure array** of size 7 to store information of 7 students. Using for loop, the program takes the information of 10 students from the user.

Then you have to store all the marks in an array and

- Find the maximum mark using function, `maxMark`
- Find the minimum mark using function, `minMark`
- Find the average mark using function, `avgMark`

Finally use **Templated** function "`print`", to display the maximum, minimum and average mark.

Sample Output

Welcome to the student database

ID of the student: 1

Marks for Student 1: 95

ID of the student: 2

Marks for Student 2: 92

ID of the student: 3

Marks for Student 3: 85

ID of the student: 4

Marks for Student 4: 87

ID of the student: 5

Marks for Student 5: 96

ID of the student: 6

Marks for Student 6: 90

ID of the student: 7

Marks for Student 7: 82

Maximum mark: 96

Minimum mark: 82

Average mark: 89.57

How to declare structure array

```
struct student
{
    int roll;
    int marks;
} s[7];
```

```
s[2].roll = 3;           // store id for 3rd student
s[2].marks = 90;        // store marks for 3rd student
```

Of course you have to use loop to store information for 7 students.

Steps

- Make a new directory named Lab8 under cs1580 folder and go into that directory
 - `cd SDRIVE/cs1580/`
 - `mkdir lab9`
 - `cd lab9`
- Open three new files:
 - `(jpico main.cpp)`
 - `(jpico "functions_file_name".cpp)`
 - `(jpico "header_name".h)`
- Write and Compile your code (**USE: `fg++ *.cpp -o out1`**)
- Run your program: `(./out1)`

Things to consider to earn full grade

Your program will be graded on:

- **Use of structures, arrays and template function.**
- Use of meaningful variable names/ indentations/ commenting / Header Comments
- Use of pass-by-value and pass-by-reference appropriately.
- **Use of multiple files**

- Use return even in void functions.
- Readability and Correctness of the program

Submit your work

1. Once you are sure you have the program running correctly, to submit a copy of your work, do the following: **cssubmit 1580 g 9**