

# CS 112B-Assignment-1

Due Date: 12 February 2023  
Group Size Maximum 2 students

## Statement

Implementation of a structure-based Academic Information System.

## Implementation Details

You are required to implement the following 4 interrelated structures.

- A. A struct **Course** with
  - a. **Members:** int **ID**, string/char\* **CourseName**, string/char\* **teacher**, int **fee**, int **creditHours**.
  - b. **PrintAll** function which cout's the details of the course.
- B. A structure **CourseList** with
  - a. members: **Course** courses (This should be an array of 5 elements)
  - b. **PrintAll** function which cout's the details of the entire list of courses in the entire array.
  - c. A **function** to add new Course to the array at any index.
  - d. A **sort** function, that should be able to sort the entire array of courses in ascending or descending order of their ID's.
  - e. **DeleteAll** function to remove all courses in the array.
- C. A structure **Student** with
  - a. members: int **ID**, string/char\* **StdName**, int **RollNo**,.
  - b. **PrintAll** function which cout's the details of all the student.
- D. A structure **StudentList** with
  - a. members: StudentList std (This should be an array of 5 elements).
  - b. **PrintAll** function which cout's the details of all the students in the list.
  - c. **Add** and **Delete** functions to add and remove students from the array on the basis of studentID.

## Program Flow:

1. The entire program has to be menu driven. (Keep the menu simple but beautiful)
2. When program starts, the user should be able to view the Main Menu.
3. The details of the working of these menus is described below. [Fig. 1]
4. Be sure to demonstrate the exceptions too and handle them properly. By handling, I mean that you should *cout* the message.

## Submission Guidelines:

- Name of the file should be A1\_<yourRollNumber1\_ yourRollNumber2>, two points will be deducted for not following file naming convention.
- **-50%** credit for plagiarism (cheating) and an **F** in the course. *We will not tolerate* any cheating.

<b>Main Menu</b> <ol style="list-style-type: none"><li>1. Add New Student.</li><li>2. Delete Existing Student.</li><li>3. Show all Students.</li><li>4. Add New Course.</li><li>5. Delete Existing Course.</li><li>6. Show particular Course.</li></ol>	<ol style="list-style-type: none"><li>7. Show all Courses.</li><li>8. Sort Courses in Ascending order.</li><li>9. Sort Courses in Descending order.</li><li>10. Exit</li></ol>
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Fig. 1: Program Flow