

## CS 161 - Gayathri Iyer

### Assignment #8 – Structs

```
struct mystruct
{
    char  a;
    int   b;
    float c;
};

struct mystruct myvar;

myvar.b = 99;
```

#### Assignment:

Write a program that reads students' names followed by their test scores (5 scores) from the given input file, students.txt. The program should output to a file, output.txt, each student's first name, last name, followed by the test scores and the relevant grade. All data should be separated by a single space.

Student data should be stored in a struct variable of type StudentType, which has four components: studentFName and studentLName of type string, an array of testScores of type int and grade of type char. Suppose that the class has 20 students. Use an array of 20 components of type StudentType. Your program must contain at least the following functions:

1. A function to read the students' data into an array.
2. A function to assign the relevant grade to each student.

Moreover, other than declaring the variables and opening the input and output files, the function main should only be a collection of function calls. Use constants where needed. You **MUST** use structs, an array of the struct, and an array inside the struct for the scores.

#### Design Considerations:

1. Follow the above-mentioned specifications very carefully to receive all points.
2. No global variables. All variables must be inside main().
3. **Points will be awarded for the following attributes of your solution:**
  - a. If your program does not compile, you get only 3 points irrespective of what the error is.
  - b. If it compiles, I check and deduct points for the following:
  - c. Your file name must be a08.cpp

- d. **Your header section must have “Sources:” line to include any sources you may have used.**
- e. **The quality of your source code (Form). In particular, pay attention to your indentation, capitalization, and so forth. Be sure to read the class [C++ style guide](#) before working on this problem. However, if you follow the style used in the book you will be fine!**
- f. **The design considerations mentioned above must be followed.**
- g. **Program works as specified, and does not have the above-mentioned deficits, full points will be awarded.**

## **Deliverables:**

- 1) Please name your file a08.cpp.
- 2) Upload into the Dropbox section of D2L your program source file (the one with an extension of .cpp) only. Please be sure this file includes your name and that of your partner, if any as the authors, assignment description and number, and date, as a program comment!
- 3) Be sure your program header includes a //Sources: comment line where you indicate any sources of help you may have received, such as from a friend, from the Internet, and so on. If you acknowledge your sources, you run much less risk of running into problems with plagiarism. If you had no outside sources of help, the comment should read //Sources: None.
- 4) If you work as a pair, with a partner, it is essential that you each upload the solution into the drop box, even though it should be the same as your partner’s submission. D2L makes it hard to give a grade to someone who has not submitted anything for grading. Please be sure your program comments contain both your name, and your partner’s name.
- 5) Be certain to check that you completed the upload successfully. After you click the Upload File button, you must also click the SUBMIT ASSIGNMENT button. This is very easy to forget. You have been warned.
- 6) You may upload as many versions as you wish prior to the due date. I will only see and grade the last one. After the due date, assignments are accepted in the drop box for 1 week, until the end date. There will be a 10% penalty for this. After that, the drop box will be closed.