CECS 121: Final Exam (Fall 2012)

Due: Dec 7th at 10:30 am

Total: 100 points

1. Create a structure to store student records. Assign it ***4 members*** of your choice. Make sure to use the ***typedef*** property. Perform the following operations on it. **(40 points)**

    a. Create a structure array to store ***5 student records***.
    b. Create ***3 separate functions (fun1, fun2 & fun3)***. Details are below.

        i. Pass the array (***i.e. all 5 records together***) to a function ***fun1*** to initialize all the respective data members.
        ii. Demonstrate a ***pass by value*** example using ***fun2*** to modify ***only the 3rd record*** of the structure array. ***Print this modified record in main().***
        iii. Demonstrate a ***pass by reference*** example using ***fun3*** to modify ***only the 2nd record*** of the structure array. ***Print this modified record in main().***

2. For the student structure (in Problem 1) , create student records dynamically as mentioned below: **(30 points)**

    i. Allocate memory to accommodate 'n' student records ***('n' depends on your choice)*** using ***malloc and calloc.***
    ii. ***Expand the number of records by 'n' using realloc ('n' depends on your choice)***. Free up the allocated memory segments in i and ii respectively.

3. For the student structure (in Problem 1), create a file named ***"student_records.txt"*** and perform the following operations. **(30 points)**

    a. Write the ***first 3*** student records to it.
    b. Read the contents of the file and display it on the screen.
    c. Append the ***next 2*** student records to it.
    d. Read the contents of the file and display it on the screen.