CSC 215
Procedural Programming with C
Lab #8

Tutorial Section

- In the main method, do the following:
  - Define a struct called date with the following data members:
    - day: an integer.
    - month: an integer.
    - year: an integer.
  - Declare 3 struct dates d1, d2, and d3.
  - Initialize d1 with a date.
  - Write `d2 = d1;`. Will this copy the data or the address?
  - Print all the struct dates.
  - Change d2 values.
  - Print d1 and d2. Did that change d1's values?
  - Declare a struct date pointer d4 and make it point to d1.
  - Print d4. Did I access d4's struct values using the same method as d1?
  - Write the functions increment that takes a struct date and increment2 that takes a pointer struct date. Both functions increase the day by one. Which one worked?
  - Declare a struct date array. Copy d1 to its first index. Change some values. Then print it along with d1.

```
Declarations: d1 = {10,5,2000} ... d2 = d1 ... d3
d1 = 10/5/2000
d2 = 10/5/2000
d3 = -2/1981157730/1981504452
========================================
After changing d2's day, month, and year
d1 = 10/5/2000
d2 = 30/40/2005
========================================
Using struct pointer d4: (*d4).day,d4->month,d4->year
d4 = 10/5/2000
========================================
Calling increment function. It takes a struct and increase its day by 1
d1 = 10/5/2000
========================================
Calling increment2 function. It takes a pointer to struct and increase its day by 1
d1 = 11/5/2000
========================================
dates[0] = 2/3/2010
d1 = 11/5/2000
```

Lab Section

- Write a program that does the following:
  - Define a constant variable MAX and make it equal to 4.
  - Define a struct called Employee with the following data member:
    - Name: a string of maximum 40 characters.
    - Salary: a floating point number.
  - Declare an array of MAX Employees.
  - Read the names and salaries of all MAX employees.
  - Use MaxSalary to print the name and salary of the employee with the maximum salary.
  - Use Raise to give the first employee a 10% raise in his/her salary.
  - When you print a floating point number, print only 2 digits after the floating point.

- Write the following functions:

  - Write the function ***MaxSalary*** that takes an array of struct employee. The functions should search the array for the maximum salary. Then prints that employee's name and salary.
    - `void MaxSalary(struct Employee AllEmps[])`
  - Write the function ***Raise*** that takes a pointer to a struct employee and a raise percentage. Then calculate the new salary after the raise.
    - `void Raise(struct employee *emp, float percent)`

- Show your program to the instructor. Then upload it to LMS under Lab8 Homework.

Example runs:

```
$ ./lab8
============================
Enter Employees1 name: Marwan
============================
Enter Marwan's salary: 10000
============================
Enter Employees2 name: Ahmad
============================
Enter Ahmad's salary: 9000
============================
Enter Employees3 name: Ali
============================
Enter Ali's salary: 3000
============================
Enter Employees4 name: Hassan
============================
Enter Hassan's salary: 15000
============================
The employee Hassan has the maximum salary 15000.00
============================
Employees Marwan's salary before the 10% raise: 10000.00
============================
Employees Marwan's salary after the 10% raise: 11000.00
============================
```

Hint: to print %. Write %%.

SUBMIT POLICY: -

- Name the .c file using the follow naming convention: ID_FirstName_LastName.c
  - **Example:** 123456789_Marwan_Almaymoni.c
- Use a comment to write your name and ID at the beginning of the code.
- The Deadline is: November 24, 2014 right before the Lab starts.
- Late submissions will not be accepted.
- Email submissions will not be accepted.
- **-1 Point** for not following the naming convention.
- **-1 Point** for not writing your name and ID in the code.
- **-8 Points** if the submitted program didn't work due to syntax errors.
- **-10 Points** for cheating and helping others cheat.