Lab 4

Due: Friday September 24, 2016

Part I: Warm up exercises

As usual we will first conduct a series of related warmup exercises. In these warmup exercises we will practice advanced output and input formatting with *printf* and *scanf*.

For this, you need to build a project called warmup4, and insert a new source code file called warmup4.c.

Part II: Lab 4 homework assignment –   to be turned in on Sept. 24 by midnight.

Your task is to write a C program that will read a file that contains information about 4 students in a course, then calculate and output their final course average grade based on this information.

The first line in the input file is an **empty** line.

The second line is exactly as follows:

****** Last, First   SSN#   DOB   263? Quiz-avg Lab-avg   Exam#1   Exam#2   Final Exam

The third line is empty.

The subsequent 4 lines all have the following format:

****** "LN, FN"   xxx-xx-xxxx x/x/xxxx   Y or N num_val num_val   num_val num_val num_val

Where num_val is any numeric value (can be integer or floating-point). Also, the name is written between quotes in the file.

Below is **just an example** of the contents of the input file:

```
*******   Last, First            SSN#          DOB        263?   Quiz-avg    Lab-avg    Exam#1    Exam#2    Final Exam
*******   "Jones, Christopher"    162-74-2381   9/12/1995   Y      51.67       72.5       77        68.5      61
*******   "Abrahamson, Sarah Lee" 127-49-0853   11/5/1993   N      87.1        79.33      64.25     84        72.5
*******   "Parker-Jones, Adreana" 230-38-1234   3/1/1996    Y      75.23       81.04      78.5      80        85.25
*******   "Ellis, Joshua"         186-27-1372   7/31/1988   Y      85.23       94.9       85        92        94.25
```

Your program will then calculate each student's course average using the following formula:

`quiz_avg*0.07 + lab_avg*0.24 + exam1*0.185 + exam2*0.185 + final_exam*0.32`

Finally your program should output the results for all students in **<u>exactly</u>** the following format:

```
  | SSN   |   Average   |  263? |
  -------------------------------
1 | xxxx  |   xx.xxx%   |   Y   |
2 | xxxx  |   xx.xxx%   |   N   |
3 | xxxx  |   xx.xxx%   |   Y   |
4 | xxxx  |   xx.xxx%   |   Y   |
```

<u>Important notes</u>:
- DOB values are right-aligned and there are **<u>exactly 4 spaces</u>** between the DOB and 263? values.
- You should output the last 4 digits of the SSN only.
- The average value should be output with exactly 3 digits of precision and with a percentage sign.
- All values should be **right**-justified (aligned on to the right), as shown above.
- All vertical bars should be aligned, as shown above.