CSCD 240
Lab 6

Basic Numeric Programming - Grade Calculator

Write a program that reads in Assignment scores, Lab scores, Exam scores, Quiz scores and final exam score from a file, named "scores.txt" via redirection and then produces a weighted average. The weighted average will be based on what percent each of the stated categories. When the percentages of each category are added, they total 100%. All scores will be given on a percentile (0-100) basis.

Presume the following about each category:

Assignments

- Total of 5
- 25% of the course grade

Labs

- Total of 9
- 20% of the course grade

Quizzes

- Total of 6
- 15% of the course grade

Exams

- Total of 3 – including final
- 40% of the course grade

Input File Format

The first line in the file will be the student name (first name space last name). On the next line the Assignments scores, white space separated. Next line the Labs scores white-space separated. Next line the Quiz scores white space separated. Last line the exam scores with the last score being the final exam.

Sample input file:

Stu Steiner
90 85 88 100 30
89 95 85 75 85 90 95 55 90
99 100 98 76 80 85
56 85 95

You may presume a correctly formed input file. Once the file has been read, report the percentage earned in each category followed by the weighted percentage. In addition, report the Grade Point for the course based on the following formula:

4.2 - ((100 - Avg. Percentile Score) / 12)

Sample Run

Student Name: Stu Steiner

Assignments Scores: 90 85 88 100 30
Assignments Average – 78.6%

Lab Scores: 89 95 85 75 85 90 95 55 90
Lab Average – 84.3%

Quiz Scores: 99 100 98 76 80 85
Quiz Average – 89.7%

Exam Scores 56 85 95
Exam Average - 78.7%

Your weighted percentage is: 81.5%

Your final grade is: 2.7

Specifics

- You must use a 3 file format
- Name your files gradeCalculator.h, gradeCalculator.c, gradeTester.c
    - gradeCalculator.h will contain function prototypes
    - gradeCalculator.c will contain the functions used to do the necessary calculations
    - gradeTester.c will contain main() which will call the functions needed to do the calculations.
- You must use static arrays
- You must use redirection – if you use a FILE * you will receive 0 points
- All input scores will be integer values
- Main will contain your array declarations, variable declarations and method calls. You will do no printing or processing in main only function calls.

To Turn In

A zip file containing:

- Containing all files necessary to compile and grade your code
- Include comments at the top of your source file that has your name, a description of the program, and a list of known but unsolved problems (if any).
- Your input files used to test
- A screen capture named cscd240lab6out.txt
- A Makefile with a target of lab6

Your zip will be named your last name first letter of your first name lab6.zip (Example: steinerslab6.zip)