CSCI 1310 Introduction to Programming
Instructor: Osborne and Graham
Assignment 5
Due Wednesday, March 18 by 23:59.

This assignment is simply a C++ version of the Passer Rating program you did in Python for Assignment 3. The logic and flow of the program is exactly the same. In this case, however, you need to write the program in C++.

You only need to submit a single file and submit it to the Moodle as *FirstName_LastName_Assignment5.cpp*. Please also include comments in your code to describe what your code is doing. Comments should also include your name, recitation TA, and the assignment number.

In this case, the output should simply look something like this:

The passer rating for this quarterback is 158.333. You need not worry much about formatting the output.

Using the following sample data will result in a passer rating of 158.333.
pass completions -- 20
pass attempts -- 25
total yardage -- 358
touchdowns -- 3
interceptions -- 0

1. In football, there is a statistic for quarterbacks called the *passer rating*. There are five input parameters to the calculation: pass completions, pass attempts, total passing yards, touchdowns, and interceptions.

   Write a program that prompts the user to enter the five values below for a particular quarterback:

   i. Pass completions
   ii. Pass attempts
   iii. Total passing yards
   iv. Touchdowns
   v. Interceptions

   Your five arguments should then be used in the passer rating calculation as follows:

   vi. C = (completions per attempt – 0.30) * 5
   vii. Y = (yards per attempt – 3) * 0.25
   viii. T = touchdowns per attempt * 20
   ix. I = 2.375 – (Intercepts per attempt * 25)
   x. PasserRating = (C+Y+T+I)/6*100

Very important: the way that the NFL calculates passer rating imposes a maximum and minimum value for each of the variables C, Y, T, and I. Each has a maximum value of 2.375 and a minimum value of 0. Thus, by way of example, if your calculation for C initially calculates a value of 2.5, your program should substitute 2.375 for that value.

As is always the case with programming, there is more than one way to do things. If you wish to implement the 2.375 max and 0 min, you need to include the following statement:

#include <algorithm>

This provides the max and min functions. Of course, you don't need to use these functions and can instead use if/then/else statements.

Once you have the passer rating calculation working, add C++ code that evaluates the passer rating. A rating is "poor" if it is 85 or below, "mediocre" if above 85, "good" if above 90, and "great" if above 95. So your final output for the program would look something like this:

The passer rating for this quarterback is 158.333.
This is great.

To test your program, look up actual data on www.nfl.com or use the following information from 2007:

Quarterback	Completions	Attempts	Yards	Touchdowns	Interceptions
D. McNabb	180	316	2647	18	6
T. Brady	319	516	3529	24	12
P. Manning	362	557	4397	31	9