CS150 Assignment 8
Soccer and Structs!

Date assigned: Monday, November 29, 2010
Design Docs Due: Tuesday, November 30, 2010 5pm (5 points)
Date Due: Tuesday, December 7, 2010, 11:59 pm (45 points)
Total points: 50

Problem

The file soccer.txt contains statistics from the Pacific Women's Soccer team from 2010. Each line of the file contains: player number, last name, first name, minutes, goals, shots, shots on goal, game winners, and fouls. There are at most 30 players listed in the file.

Previously, we would have used parallel arrays to track this player information. For this assignment, we want to define a struct that will contain all the information about one player (one line of data should be stored in one struct). Since there are many players, you may need an array of structs. **Your first task is to define the struct**

You need to output, to the **screen** and to a **file named soccerSummary.txt**, the list of players who had at least one game winner, the list of players that had at least one foul, all the players, and a histogram for all players that shows how many goals each player had (a player with zero goals must show up in the histogram). The screen and file output must look exactly the same.

►You are required to use at least **two meaningful functions** (not counting main()). Look for instances of repeated code in your project to turn into functions. A meaningful function is called from at least two locations in the source code.

To complete this assignment you must

1. Create a new C++ project in Visual Studio. Name your project **08Soccerxxxxxxxx**, where xxxxxxxx must be replaced by your PUNetID. As an example, my project would be called "08Soccerkhoj0332". It is vital that you name your project correctly!
2. Type the solution (**fully documented/commented**) to the problem into your project.
3. Remember to enter in your name as the author of the program.
4. Make sure that your program compiles and runs correctly. If you get any errors, double check that you typed everything correctly. Be aware that C++ is case-sensitive. Also, there must not be any warnings when compiling your program.
5. Once you are sure that the program works correctly, it is time to submit your program. You do this by logging on to Turing and placing your complete project folder in the **CS150-02 Drop** folder. Make sure that you copy your program folder and don't move the folder. If you move the folder, then you will not have your own copy!

Design Doc Questions

1. What is the struct you will need to define in your code?

2. List the function prototypes and function header comments for the functions you will write in your code.

Additional Notes

1. You must follow the coding standards. Refer to the lecture notes on how to comment a function.
2. You must use constants when possible.
3. Your program will be graded on **efficiency**. In other words, you will be marked down for repeating code statements unnecessarily.
4. Your output must look **exactly** like the sample given.
5. Write and debug this project one function at a time!
6. You can use the **debugger** to set breakpoints in functions.
7. Note that soccer allows two separate players to wear number **0** and **00**.

Remember, this is an individual assignment. Refer to the syllabus for assignment policies

Sample Input File, soccer.txt
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```
6  Novak Jenny  1525 6 24 12 1 1
19 Kanda Ashley  705 5 22 14 2 0
20 Homad Tianna  1180 3 26 12 0 2
```

Sample Output The row of numbers at the top of the output is only to guide you in spacing out the tables and should **not** be displayed.

```
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789
Game Winners
##        Name  Min  Goals Shots Shot% ShotOnGoal ShotOnGoal% GameWinners Fouls
 6       Novak 1525      6    24  0.25         12        0.50           1     1
19       Kanda  705      5    22  0.23         14        0.64           2     0

Fouls
##        Name  Min  Goals Shots Shot% ShotOnGoal ShotOnGoal% GameWinners Fouls
 6       Novak 1525      6    24  0.25         12        0.50           1     1
20       Homad 1180      3    26  0.12         12        0.46           0     2

All
##        Name  Min  Goals Shots Shot% ShotOnGoal ShotOnGoal% GameWinners Fouls
 6       Novak 1525      6    24  0.25         12        0.50           1     1
19       Kanda  705      5    22  0.23         14        0.64           2     0
20       Homad 1180      3    26  0.12         12        0.46           0     2

Goals
       Novak | ******
       Kanda | *****
       Homad | ***
```