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Homework #2

**Problem Statement:**

The goals of the programming assignment, homework #2, was to read in information about a team and three players (QB, RB, and WR) on that team. After reading in values, it would perform calculations and write to the screen the statistics about the three players and compare them. Normal inputs to the program are strings to fill the team and player name variables followed by integer values for each player. It creates output of float values and strings in prompts. It required simple error handling to correct irregular values in the quarterback’s numbers.

**Design:**

I used string data structures to store the team name and the player’s last names and I used multiple integer values to store the player’s statistics. I created float values to store the calculations of the read data. I also created three string structures to store the results of the comparison between the player’s statistics. A simple algorithm was used to solve the program and the thought process is visible in the comments of the program. There were no cons in the algorithm and it had an important pro because of its simplicity.

**Implementation:**

I started with homework #1’s code and made slight modifications but mostly just built upon it. I developed the code by simply writing in comments each step that was required and gradually filled in code, compiling and testing as I worked.

**Testing:**

I tested this program by using correct inputs that were used in the prompt and in the sample output through Turing. Special cases I tested included incorrect inputs, like characters or strings into expected integers which did as expected – terminated the program to completion and gave inf. and NaN results.

**Conclusions:**

The programming project was a success. I wouldn’t change anything in my coding process differently in the future. The project took less than an hour to code the entire thing including the algorithm process.

**Typescript:**

Script started on Mon 09 Feb 2015 06:55:48 PM CST

]0;csce\_user@cscuser-VirtualBox: ~csce\_user@cscuser-VirtualBox:~$ cd csce

]0;csce\_user@cscuser-VirtualBox: ~/cscecsce\_user@cscuser-VirtualBox:~/csce$ g++ -Wall 010688916.hw2.cpp -o hw2.exe

]0;csce\_user@cscuser-VirtualBox: ~/cscecsce\_user@cscuser-VirtualBox:~/csce$ ./hw2.exe

Welcome to the Football Statistics Calculator!

This is a program that can calculate and compare statistics about

a Quarterback, Running Back and a Wide Receiver.

Enter the team's name for which these players play: Broncos

Enter the Quarterback's last name: Manning

We will calculate the quarterback rating for Manning.

How many passes did the quarterback attempt? 500

How many of those passes did the quarterback complete? 450

How many yards did he throw for? 2200

How many touchdowns did he throw? 65

How many interceptions did he throw? 2

Your quarterback had a completion percentage rating of: 2.375

Your quarterback had a yards per attempt rating of: 0.35

Your quarterback had a touchdown percentage rating of: 2.375

Your quarterback had an interception rating of: 2.275

The QBR of your quarterback was: 122.917

Enter the Wide Receiver's last name: Sanders

We will calculate some Wide Receiver statistics for Sanders.

How many receptions did he have? 400

How many yards did he earn? 2000

How many TDs did he have? 50

How many fumbles did he have? 1

Sanders's average yards per catch is: 5

Enter the Running Back's last name: Anderson

We will calculate some Running Back statistics for Anderson.

How many rushing attempts did he have? 250

How many yards did he earn? 2500

How many TDs did he have? 49

How many fumbles did he have? 0

Anderson's average yards per rush is: 10

The player with the most turnovers is: Manning

The player with the highest yards per attempt is: Anderson

The player with the most TDs is: Manning

Go Broncos go!

]0;csce\_user@cscuser-VirtualBox: ~/cscecsce\_user@cscuser-VirtualBox:~/csce$ ./hw2.exe

Welcome to the Football Statistics Calculator!

This is a program that can calculate and compare statistics about

a Quarterback, Running Back and a Wide Receiver.

Enter the team's name for which these players play: error

Enter the Quarterback's last name: testing

We will calculate the quarterback rating for testing.

How many passes did the quarterback attempt? c

How many of those passes did the quarterback complete? How many yards did he throw for? How many touchdowns did he throw? How many interceptions did he throw?

Your quarterback had a completion percentage rating of: -nan

Your quarterback had a yards per attempt rating of: 0

Your quarterback had a touchdown percentage rating of: 2.375

Your quarterback had an interception rating of: 0

The QBR of your quarterback was: -nan

Enter the Wide Receiver's last name: We will calculate some Wide Receiver statistics for .

How many receptions did he have? How many yards did he earn? How many TDs did he have? How many fumbles did he have?

's average yards per catch is: -inf

Enter the Running Back's last name: We will calculate some Running Back statistics for .

How many rushing attempts did he have? How many yards did he earn? How many TDs did he have? How many fumbles did he have?

's average yards per rush is: inf

The player with the most turnovers is:

The player with the highest yards per attempt is:

The player with the most TDs is: testing

Go error go!

]0;csce\_user@cscuser-VirtualBox: ~/cscecsce\_user@cscuser-VirtualBox:~/csce$ ./hw2.exe

Welcome to the Football Statistics Calculator!

This is a program that can calculate and compare statistics about

a Quarterback, Running Back and a Wide Receiver.

Enter the team's name for which these players play: Chiefs

Enter the Quarterback's last name: Smith

We will calculate the quarterback rating for Smith.

How many passes did the quarterback attempt? 500

How many of those passes did the quarterback complete? 20

How many yards did he throw for? 150

How many touchdowns did he throw? 1

How many interceptions did he throw? 3

Your quarterback had a completion percentage rating of: 0

Your quarterback had a yards per attempt rating of: 0

Your quarterback had a touchdown percentage rating of: 0.04

Your quarterback had an interception rating of: 2.225

The QBR of your quarterback was: 37.75

Enter the Wide Receiver's last name: Smiths 2

We will calculate some Wide Receiver statistics for Smith2.

How many receptions did he have? 10

How many yards did he earn? 50

How many TDs did he have? 1

How many fumbles did he have? 2

Smith2's average yards per catch is: 5

Enter the Running Back's last name: Smith3

We will calculate some Running Back statistics for Smith3.

How many rushing attempts did he have? 15

How many yards did he earn? 12

How many TDs did he have? 0

How many fumbles did he have? 2

Smith3's average yards per rush is: 0.8

The player with the most turnovers is: Smith

The player with the highest yards per attempt is: Smith2

The player with the most TDs is: Smith

Go Chiefs go!

]0;csce\_user@cscuser-VirtualBox: ~/cscecsce\_user@cscuser-VirtualBox:~/csce$ exit

exit

Script done on Mon 09 Feb 2015 06:57:54 PM CST