

CS11 Programming Assignment # 9 due Wednesday 8 Dec. 1999

Sorting Football Players

In this assignment you will modify the football team program (player.h, player.cpp, team.cpp) we went over in class to sort the players based on their attributes. The purpose of this assignment is to gain experience using an array of class objects.

First, ask the user to enter the name of the input file. If the input file does not exist, inform the user, and ask for the file name again. The input file will contain information about all the players. The format of this file is the same as given in the comment at the end of team.cpp. Next, ask the user how the players should be sorted. There will be a menu with four options:

- (1) sort by number (low to high)
- (2) sort by height (tallest to shortest)
- (3) sort by weight (heaviest to lightest)
- (4) sort by age (oldest to youngest)

Ask the user to select a number in the range 1..4. If the user gives some other value, inform the user that the choice is invalid and then ask for the selection again.

The output from your program will go to the screen. Other than having been sorted, the list of players will look the same as the original team.cpp had printed. In other words, you do not need to change the implementation of the << operator in player.cpp. Once the program has printed the sorted list of players, it should halt.

In order to support sorting, you will need to write new member functions for the player class. For example, one such function can compare two players to see if one is younger than the other. Other functions can similarly compare based on number, height and weight.

The code that does the sorting should be in the main program team.cpp, and should make use of the appropriate comparison member functions. Your program should be written in a generalized fashion so that it will work for different input files. However, you may assume that the number of players (lines in the input file) will be between 1 and 50 inclusive.

Example I/O:

What is the name of the input file? **team.txt**

How do you wish to sort the players?

- (1) by number
- (2) by height
- (3) by weight
- (4) by age

Please enter the number of your choice: **4**

After sorting, here is the list:

```
# 38 Sean Denham          5' 10''  176 lbs.  born 29/ 4/1969
# 21 Dean Wallis         6'  3''  200 lbs.  born 27/ 8/1969
# 27 Steven Alessio     6'  8''  233 lbs.  born 11/ 8/1971
#  5 James Hird         6'  2''  202 lbs.  born  2/ 4/1973
#  6 Sean Wellman       6'  4''  196 lbs.  born 20/ 9/1974
# 31 Dustin Fletcher    6'  6''  202 lbs.  born  5/ 7/1975
# 32 Justin Blumfield   6'  2''  185 lbs.  born 24/11/1977
# 18 Matthew Lloyd      6'  3''  198 lbs.  born 16/ 4/1978
#  4 Daniel McAlister   6'  1''  191 lbs.  born 22/ 8/1978
# 23 Mark Bolton        6'  4''  189 lbs.  born  3/ 3/1979
# 42 Danny Jacobs       6'  2''  198 lbs.  born 25/ 6/1980
#  3 Aaron Henneman     6'  4''  191 lbs.  born 13/12/1980
```

Note – this output assumes that the text file team.txt looks like same input file used in the original football team program we discussed in class.