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Assignment 7

10/21/22

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Description: This program creates a struct of soccer players, and can display, sort, swap, and search different values for each soccer player.

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Status: Complete

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#include <iostream>

#include <fstream>

using namespace std;

struct SoccerPlayer {

char first[31];

char last[31];

int month, day, year;

};

void inputData(string filename, SoccerPlayer players[]);

void display(SoccerPlayer players[]);

void sort(SoccerPlayer players[]);

void swapping(SoccerPlayer&, SoccerPlayer&);

int playerSearch(SoccerPlayer players[]);

const int PLAYERS\_SIZE = 10;

int main() {

int option;

string filename;

SoccerPlayer players[PLAYERS\_SIZE];

SoccerPlayer copyPlayers[PLAYERS\_SIZE];

do {

cout << "1 — input data, 2 — display original data, 3 — sort data, 4 — display sorted data, 5 — search by last name, 6 — exit" << endl;

switch (option) {

case 1:

cout << "Enter filename: " << endl;

cin >> filename;

inputData(filename, players);

break;

case 2:

display(players);

break;

case 3:

cout << "Sorting data..." << endl;

sort(players);

cout << "Data sorted." << endl;

break;

case 4:

display(copyPlayers);

case 5:

int index = playerSearch(players);

}

} while (option != 6);

}

void inputData(string filename, SoccerPlayer players[]) {

ifstream ifs;

ifs.open(filename.data());

if (ifs) {

for (int i = 0; i < PLAYERS\_SIZE; i++) {

ifs >> players[i].last;

ifs >> players[i].first;

ifs >> players[i].month;

ifs >> players[i].day;

ifs >> players[i].year;

i++;

}

}

}

void display(SoccerPlayer players[]) {

for (int i = 0; i < PLAYERS\_SIZE; i++) {

cout << players[i].last << " ";

cout << players[i].first << " ";

cout << players[i].day << " ";

cout << players[i].month << " ";

cout << players[i].year << endl;

}

}

void sort(SoccerPlayer players[]) {

int \*index;

index = new int[PLAYERS\_SIZE];

int i, j, min;

for (int a = 0; a < PLAYERS\_SIZE; a++) {

index[a] = i;

}

for (i = 0; i < PLAYERS\_SIZE - 1; i++) {

for (j = i+1; j < PLAYERS\_SIZE; j++) {

if (strcmp(players[index[min]].last, players[index[j]].last) > 0) {

min = j;

}

}

if (min != i) {

int temp = index[min];

index[min] = index[i];

index[i] = temp;

}

}

display(players);

}

void swapping(SoccerPlayer &player1, SoccerPlayer &player2) {

char temp\_array[20];

strcpy(temp\_array, player1.first);

strcpy(player1.first, player2.first);

strcpy(player2.first, temp\_array);

strcpy(temp\_array, player1.last);

strcpy(player1.last, player2.last);

strcpy(player2.last, temp\_array);

int tempday = player1.day;

player1.day = player2.day;

player2.day = tempday;

int tempmonth = player1.month;

player1.month = player2.month;

player2.month = tempmonth;

int tempyear = player1.year;

player1.year = player2.year;

player2.year = tempyear;

}

int playerSearch(SoccerPlayer players[]) {

string last = "";

while (last != "exit") {

int found = 1;

int flag = 0;

char input[21];

cout << "Enter first few characters of player you want to find: " << endl;

cin >> input;

for (int i = 0; i < PLAYERS\_SIZE; i++) {

for (int j = 0; j < last.length(); j++) {

if (players[i].last[j] != last.at(j)) {

found = 0;

break;

}

}

if (found == 1) {

flag = 1;

display(players);

}

}

if (flag == 0) {

cout << "Not found." << endl;

}

}

}