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**CIS170C\_Lab05A**

**2/9/14**

**Lab # CIS CIS170C-A4**

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// Programming Assignment: LAB5A

// Developer: Renee Thomas

// Date Written: 2/9/14

// Purpose: Arrays - Average Score

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# include <iostream>

# include <iomanip>

# include <string>

# include <cctype>

using namespace std;

void inputData(string playerName[], int playerScore[], int &numPlayers); // initiate inputData

void displayPlayerData(string playerName[], int playerScore[],int &numPlayers); // initiate displayPlayerData

int CalculateAverageScore(int playerScore[],int &numPlayers, int &totalScores, double &average);// initiate CalculateAverageScore

void DisplayBelowAverage(string playerName[], int playerScore[],int &numPlayers, int totalScores, double &average); // initiate DisplayBelowAverage

// main function

int main()

{

// declare variables and arrays in main

string playerName[100];

int playerScore[100];

int numPlayers = 0;

int totalScores = 0;

double average = 0.0;

// call functions

inputData(playerName, playerScore, numPlayers);

displayPlayerData(playerName, playerScore, numPlayers);

CalculateAverageScore(playerScore, numPlayers, totalScores, average);

DisplayBelowAverage(playerName, playerScore, numPlayers, totalScores, average);

cin.ignore();

return 0;

}

// create inputData function

void inputData(string playerName[], int playerScore[], int &numPlayers)

{

for (int i = 0; i<100; i++)

{

// get player name

cout<<"Enter player Name (Press Q to quit): ";

getline(cin,playerName[i]);// store user input into playerName array

// check to see if user chose Q or added another player

if(playerName[i] == "Q" || playerName[i] == "q")

{

break; // if user clicked Q, break from loop to get final info

}else{

// get score for playerName

cout<<"Enter score for "<<playerName[i]<<": ";

cin>>playerScore[i];// store player score in array

numPlayers ++; // add 1 to numPlayers

cin.ignore(); // clear the que

}// end if statement

}// end for loop

}// end inputData function

// create displayPlayerData function

void displayPlayerData(string playerName[], int playerScore[],int &numPlayers)

{

// output player name and player score titles

cout<<setw(20)<<left<<"\nPlayer Name"<<setw(5)<<right<< "Player Score"<<endl;

// iterate through all of the players

for (int i = 0; i<numPlayers;i++)

{

// output all of the player names and scores in arrays

cout<<setw(20)<<left<<playerName[i]<<setw(5)<<right<< playerScore[i]<<endl;

}

}

// create CalculateAverageScore

int CalculateAverageScore(int playerScore[],int &numPlayers, int &totalScores, double &average)

{

// iterate through all the players

for(int i=0; i<numPlayers; i++)

{

totalScores += playerScore[i];// add all of the scores together

}

average = totalScores/numPlayers;// get average

return average;

}

// create DisplayBelowAverage function

void DisplayBelowAverage(string playerName[], int playerScore[],int &numPlayers, int totalScores, double &average)

{

cout<<"\nThere were "<<numPlayers<<" players with a total score of: "<<totalScores<<endl; // output the number of players and the total scores

cout<<fixed;

cout<<"The average total score was: "<<setprecision(2)<<average<<endl; // output the average score overall

cout<<"\nPlayers that scored below the average score:"<<endl;

cout<<setw(20)<<left<<"Player Name"<<setw(5)<<right<< "Player Score"<<endl;

// iterate through all of the players

for (int i = 0; i< numPlayers;i++)

{

if(playerScore[i] < average)// look for all of the players with a score below the average score

{

cout<<setw(20)<<left<<playerName[i]<<setw(5)<<right<< playerScore[i]<<endl; // output all players with below average scores

}

}

}

}

