#include <iostream>

#include <iomanip>

#include <fstream>

using namespace std;

int main(){

const int elementCounter = 20;

int scores[elementCounter];

int tallies[elementCounter];

int counter = 0;

int i = 0;

int j = 0;

int k = 0;

int reverse = 0;

int input[elementCounter];

ifstream inFile("input.txt");

cout << "Scores : ";

while(inFile >> scores[counter]){

cout << scores[counter] << " ";

counter ++;

}

cout << endl;

cout << endl;

inFile.close();

for(i = 0; i < counter; i++){

tallies[i] = scores[i];

}

for(j = 0; j < counter; j++){

for(k = 0; k < counter; k++){

if(tallies[k] < tallies[k+1]){

reverse = tallies[k];

tallies[k] = tallies[k+1];

tallies[k+1] = reverse;

}

}

}

cout << setw(7) << setfill(' ') << left << "Scores" << ": ";

for(i = 0; i < counter; i++){

cout << scores[i] << " ";

}

cout << endl;

cout << setw(7) << setfill(' ') << left << "Tallies" << ": ";

for(i = 0; i < counter; i++){

cout << tallies[i] << " ";

}

cout << endl;

cout << endl;

int high;

int low;

int highIndex;

int lowIndex;

int n = 0;

int m = 0;

for(n = 0; n < counter; n++)

if (scores[m] > scores[n]){

low = scores[n];

m = n;

}

else{

low = scores[m];

}

lowIndex = m;

for(n = 0; n < counter; n++)

if (scores[m] < scores[n]){

high = scores[n];

m = n;

}

else{

high = scores[m];

}

highIndex = m;

cout << setw(15) << setfill(' ') << left << "Scores low: "<< low << " at index " << lowIndex << endl;

cout << setw(15) << setfill(' ') << left << "Scores high: " << high << " at index " << highIndex << endl;

int total = 0;

double avg = 0;

cout << endl;

for(i = 0; i < counter; i++)

total += scores[i];

avg = total / counter;

cout << "Scores: " << avg << " average" << endl;

for(j = 0; j < counter; j++)

for(k = 0; k < counter; k++){

if(scores[k] < scores[k+1]){

reverse = scores[k];

scores[k] = scores[k+1];

scores[k+1] = reverse;

}

}

cout << endl;

cout << setw(7) << setfill(' ') << left << "Scores" << ": ";

for(i = 0; i < counter; i++)

cout << scores[i] << " ";

cout << endl;

cout << setw(7) << setfill(' ') << left << "Tallies" << ": ";

for(i = 0; i < counter; i++)

cout << tallies[i] << " ";

int number;

bool search = 0;

cout << endl;

cout << endl;

cout << "Please enter a number to search: " << endl;

cin >> number;

for(i = 0; i < counter; i++)

if(scores[i] == number){

cout << setw(10) << setfill(' ') << left << "Scores: " << number << " is in the array" << endl;

cout << endl;

search = 1;

break;

}

if(search == 0){

cout << setw(10) << setfill(' ') << left << "Scores: " << number << " is not in the array" << endl;

}

cout << endl;

cout << "Please enter some numbers to store in the array input (8 numbers are required): " << endl;

for(i = 0; i < counter; i++)

cin >> input[i];

for(j = 0; j < counter; j++)

for(k = 0; k < counter -1; k++){

if(input[k] > input[k+1]){

reverse = input[k];

input[k] = input[k+1];

input[k+1] = reverse;

}

}

for(i = 0; i < counter; i++)

cout << input[i] << " ";

return 0;

}



