**Лабораторная 6**

**Ломакина Юлия ББИ-23-3**

**1 уровень №4**

using System;

struct Sportsman

{

private string famile;

private double bestResult;

public Sportsman(string fam, double result)

{

famile = fam;

bestResult = result;

}

// Метод доступа к famile

public string GetFamile()

{

return famile;

}

// Метод доступа к bestResult

public double GetBestResult()

{

return bestResult;

}

public void SetBestResult(double result)

{

bestResult = result;

}

public void SetFamile(string fam)

{

famile = fam;

}

}

public class Program

{

public static void Main()

{

Sportsman[] sportsmen = new Sportsman[5];

sportsmen[0] = new Sportsman("Ivanov", Math.Max(100, 120));

sportsmen[1] = new Sportsman("Petrov", Math.Max(90, 75));

sportsmen[2] = new Sportsman("Sidorov", Math.Max(105, 107));

sportsmen[3] = new Sportsman("Bach", Math.Max(130, 110));

sportsmen[4] = new Sportsman("Corsar", Math.Max(150, 90));

BubbleSort(sportsmen);

Console.WriteLine("Results of the competition:");

for (int i = 0; i < sportsmen.Length; i++)

{

Console.WriteLine("{0}. {1} - Best result: {2}", i + 1, sportsmen[i].GetFamile(), sportsmen[i].GetBestResult());

}

}

static void BubbleSort(Sportsman[] arr)

{

int n = arr.Length;

for (int i = 0; i < n - 1; i++)

{

for (int j = 0; j < n - i - 1; j++)

{

if (arr[j].GetBestResult() < arr[j + 1].GetBestResult())

{

double temp = arr[j].GetBestResult();

arr[j].SetBestResult(arr[j + 1].GetBestResult());

arr[j + 1].SetBestResult(temp);

string tempName = arr[j].GetFamile();

arr[j ].SetFamile(arr[j+1].GetFamile());

arr[j+1].SetFamile(tempName);

arr[j] = new Sportsman(arr[j].GetFamile(), arr[j].GetBestResult());

}

}

}

}

}

**2 уровень №9**

using System;

using System.Linq;

namespace Structures

{

public struct Participant

{

private string Name;

private double[] Scores;

private int SumOfPlaces;

public Participant(string name, double[] scores, int sum)

{

Name = name;

Scores = scores;

SumOfPlaces = sum;

}

public string GetName() { return Name; }

public double [] GetScores() { return Scores; }

public int GetSumOfPlaces() { return SumOfPlaces; }

public int SetSumOfPlaces(int sum) { return SumOfPlaces = sum; }

}

public class Program

{

static void Main(string[] args)

{

Participant[] participants = new Participant[5]

{

new Participant("Bob", new double[] { 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7 },0),

new Participant("John", new double[] { 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7 }, 0),

new Participant("Leo", new double[] { 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 }, 0),

new Participant("Mark", new double[] { 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 },0),

new Participant("Kiril", new double[] { 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7 }, 0)

};

for (int i = 0; i < participants.Length; i++)

{

for (int j = 0; j < participants[i].GetScores().Length; j++)

{

int place = 1;

for (int k = 0; k < participants.Length; k++)

{

if (k != i && participants[i].GetScores()[j] < participants[k].GetScores()[j])

{

place++;

}

}

int b = participants[i].GetSumOfPlaces();

b += place;

participants[i].SetSumOfPlaces(b);

}

}

var orderedParticipants = participants.OrderBy(p => p.GetSumOfPlaces());

foreach (var participant in orderedParticipants)

{

Console.WriteLine($"Имя: {participant.GetName()}, Сумма: {participant.GetSumOfPlaces()}");

}

}

}

}

**3 уровень №3**

using System;

public struct Team

{

private int[] results;

public Team(int[] results)

{

this.results = results;

}

public int CalculatePoints()

{

int points = 0;

for (int i = 0; i < results.Length; i++)

{

if (results[i] == 1)

{

points += 5;

}

else if (results[i] == 2)

{

points += 4;

}

else if (results[i] == 3)

{

points += 3;

}

else if (results[i] == 4)

{

points += 2;

}

else if (results[i] == 5)

{

points += 1;

}

else

{

points += 0;

}

}

return points;

}

}

class Program

{

static void Main()

{

int[] resultsTeamA = { 1, 4, 7, 10, 13, 16 };

int[] resultsTeamB = { 2, 5, 8, 11, 14, 17 };

int[] resultsTeamC = { 3, 6, 9, 12, 15, 18 };

Team teamA = new Team(resultsTeamA);

Team teamB = new Team(resultsTeamB);

Team teamC = new Team(resultsTeamC);

int pointsTeamA = teamA.CalculatePoints();

int pointsTeamB = teamB.CalculatePoints();

int pointsTeamC = teamC.CalculatePoints();

if (pointsTeamA > pointsTeamB && pointsTeamA > pointsTeamC)

{

Console.WriteLine("Команда A победила с " + pointsTeamA + " баллами");

}

else if (pointsTeamB > pointsTeamA && pointsTeamB > pointsTeamC)

{

Console.WriteLine("Команда B победила с " + pointsTeamB + " баллами");

}

else if (pointsTeamC > pointsTeamA && pointsTeamC > pointsTeamB)

{

Console.WriteLine("Команда C победила с " + pointsTeamB + " баллами");

}

else if (pointsTeamA == pointsTeamB || pointsTeamA == pointsTeamC || pointsTeamB == pointsTeamC)

{

int firstPlaceTeamA = resultsTeamA[0];

int firstPlaceTeamB = resultsTeamB[0];

int firstPlaceTeamC = resultsTeamC[0];

if (firstPlaceTeamA == 1)

{

Console.WriteLine("Команда A победила с " + pointsTeamA + " баллами");

}

else if (firstPlaceTeamB == 1)

{

Console.WriteLine("Команда B победила с " + pointsTeamB + " баллами");

}

else if (firstPlaceTeamC == 1)

{

Console.WriteLine("Команда C победила с " + pointsTeamC + " баллами");

}

}

}

}