Уровень1

using System;

abstract class Student

{

protected string name;

protected int grade;

protected int missedClasses;

public string Name => name;

public int Grade => grade;

public int MissedClasses => missedClasses;

public Student(string name, int grade, int missedClasses)

{

this.name = name;

this.grade = grade;

this.missedClasses = missedClasses;

}

public abstract void Print();

}

class InformaticsStudent : Student

{

public InformaticsStudent(string name, int grade, int missedClasses) : base(name, grade, missedClasses)

{

}

public override void Print()

{

Console.WriteLine("Фамилия {0} \t {1} балл \t кол-во пропусков {2}", name, grade, missedClasses);

}

}

class MathStudent : Student

{

public MathStudent(string name, int grade, int missedClasses) : base(name, grade, missedClasses)

{

}

public override void Print()

{

Console.WriteLine("Фамилия {0} \t {1} балл \t кол-во пропусков {2}", name, grade, missedClasses);

}

}

class Program

{

static void Main(string[] args)

{

InformaticsStudent[] informaticsStudents = new InformaticsStudent[7];

informaticsStudents[0] = new InformaticsStudent("Kate", 6, 3);

informaticsStudents[1] = new InformaticsStudent("Anna", 4, 1);

informaticsStudents[2] = new InformaticsStudent("Kirill", 2, 6);

informaticsStudents[3] = new InformaticsStudent("Lev", 3, 1);

informaticsStudents[4] = new InformaticsStudent("Maria", 2, 4);

informaticsStudents[5] = new InformaticsStudent("Mira", 5, 2);

informaticsStudents[6] = new InformaticsStudent("Aleksey", 6, 4);

MathStudent[] mathStudents = new MathStudent[7];

mathStudents[0] = new MathStudent("Luka", 4, 2);

mathStudents[1] = new MathStudent("Artem", 5, 4);

mathStudents[2] = new MathStudent("Vanya", 2, 3);

mathStudents[3] = new MathStudent("Kris", 6, 1);

mathStudents[4] = new MathStudent("Nord", 3, 7);

mathStudents[5] = new MathStudent("Max", 5, 3);

mathStudents[6] = new MathStudent("Karl", 2, 5);

Console.WriteLine("Студенты по информатике:");

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

{

informaticsStudents[i].Print();

}

Console.WriteLine("\nСтуденты по математике:");

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

{

mathStudents[i].Print();

}

Console.ReadKey();

}

}

Уровень2

using System;

class Human

{

protected string \_name;

protected int \_wincount;

protected double \_drawcount;

protected int \_loosecount;

protected double \_finalscore;

public Human(string name, int wins, double draws, int looses)

{

\_name = name;

\_wincount = wins;

\_drawcount = draws;

\_loosecount = looses;

\_finalscore = wins \* 1 + draws / 2;

}

public double Finalscore => \_finalscore;

public virtual void Print()

{

// name не больше 5 символов иначе вывод ломаесться

Console.WriteLine("{0,-5} | {1,-3} | {2,-3} | {3,-7} | {4,-3}", \_name, \_wincount, \_drawcount, \_loosecount, \_finalscore);

}

}

class Athlete : Human

{

static int \_id = 0;

private int ID;

public Athlete(string name, int wins, double draws, int looses) : base(name, wins, draws, looses)

{

\_id++;

ID = \_id;

}

public override void Print()

{

Console.WriteLine("{5,-3} | {0,-5} | {1,-3} | {2,-3} | {3,-7} | {4,-3}", \_name, \_wincount, \_drawcount, \_loosecount, \_finalscore, ID);

}

}

internal class Program

{

static void Sort(Human[] participants)

{

int i = 1;

int j = i + 1;

while (i < participants.Length)

{

if (participants[i].Finalscore < participants[i - 1].Finalscore)

{

i = j;

j++;

}

else

{

Human temp = participants[i];

participants[i] = participants[i - 1];

participants[i - 1] = temp;

i--;

if (i == 0)

{

i = j;

j++;

}

}

}

}

static void Main(string[] args)

{

Athlete[] participants = new Athlete[7]

{

new Athlete("Vlad", 1,2,7),

new Athlete("Pavel", 4,3,2),

new Athlete("Lera", 0,2,9),

new Athlete("Diana", 2,8,1),

new Athlete("Vera", 3,3,7),

new Athlete("Denis", 3,6,3),

new Athlete("Anton", 4,6,3)

};

Console.WriteLine("Список участников");

Console.WriteLine("Имя Победы Ничьи Поражения Результат");

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

{

participants[i].Print();

}

Sort(participants);

Console.WriteLine("Сортировка");

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

{

participants[i].Print();

}

Console.ReadKey();

}

}

Уровень3

using System;

public class Student

{

private string \_firstName; private string \_lastName;

private int[] \_exams; protected double \_averageScore;

public Student(string firstName, string lastName, int[] exams)

{

\_firstName = firstName;

\_lastName = lastName; \_exams = exams;

\_averageScore = CalculateAverageScore();

}

public double CalculateAverageScore()

{

int sum = 0;

foreach (int exam in \_exams)

{

sum += exam;

}

return (double)sum / \_exams.Length;

}

public void Print()

{

Console.WriteLine($"{\_lastName} {\_firstName} {\_averageScore}");

}

}

public class Group

{

protected Student[] \_students;

protected double \_avarageScore;

public Group(Student[] students)

{

\_students = students;

\_avarageScore = CalculateAverageScore();

}

public virtual double CalculateAverageScore()

{

double totalScore = 0;

foreach (Student student in \_students)

{

totalScore += student.CalculateAverageScore();

}

return totalScore / \_students.Length;

}

public virtual void Print()

{

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

{

\_students[i].Print();

}

Console.Write(" " + \_avarageScore);

Console.WriteLine();

}

}

public class GroupA : Group

{

public GroupA(Student[] students) : base(students) { }

public override void Print()

{

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

{

\_students[i].Print();

}

Console.Write("A " + \_avarageScore);

Console.WriteLine();

}

}

public class GroupB : Group

{

public GroupB(Student[] students) : base(students) { }

public override void Print()

{

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

{

\_students[i].Print();

}

Console.Write("B " + \_avarageScore);

Console.WriteLine();

}

}

public class GroupC : Group

{

public GroupC(Student[] students) : base(students) { }

public override void Print()

{

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

{

\_students[i].Print();

}

Console.Write("C " + \_avarageScore);

Console.WriteLine();

}

}

internal class Program

{

static void Main(string[] args)

{

Student[] studentsA = new Student[]

{

new Student("Mari", "Ivanova", new int[] { 87, 77, 65, 98 }),

new Student("Misha", "Smirnov", new int[] { 89, 88, 76, 66 }),

};

Student[] studentsB = new Student[]

{

new Student("Anton", "Volkov", new int[] { 67, 65, 87, 93 }),

new Student("Dasha", "Mishina", new int[] { 68, 59, 67, 88 }),

};

Student[] studentsC = new Student[]

{

new Student("Kate", "Savina", new int[] { 80, 79, 62, 59 }),

new Student("Alex", "Lobov", new int[] { 65, 73, 84, 95 }),

};

Group gr = new Group(studentsC);

GroupA groupA = new GroupA(studentsA);

GroupB groupB = new GroupB(studentsB);

GroupC groupC = new GroupC(studentsC);

Group[] groups = new Group[] { groupA, groupB, groupC };

Console.WriteLine("Группа\tСредний балл за сессию");

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

{

groups[i].Print();

}

Console.ReadKey();

}

}