Programming 2 Mid Term Exam

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Driver Class:

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace AryanPatel\_MidExam

{

class Program

{

static void Main(string[] args)

{

string file = "students.txt";

//Load list of students from specified json file

Console.WriteLine($"\n\nLoading list of students from file {file}");

GradeManager.LoadStudents(file);

Console.WriteLine("\n----------------------\n");

//Showing all the students

Console.WriteLine($"\n\nAll Students:");

GradeManager.Show();

Console.WriteLine("\n----------------------\n");

//Showing the Students with total greater than selected mark

int selectedMark = 50;

Console.WriteLine($"\nStudents with total mark above { selectedMark }:");

GradeManager.Above(selectedMark);

Console.WriteLine("\n----------------------\n");

//Showing the average score

Console.WriteLine($"\n\n Class average");

GradeManager.Average();

Console.WriteLine("\n----------------------\n");

//Showing all the Students available on Tuesday @ 11:15

Console.WriteLine($"\n\n The Highest score Obtained by:");

GradeManager.Top();

}

}

}

Person class:

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace AryanPatel\_MidExam

{

class Person

{

public string Name { get; set; } // Property

public string Cell { get; set; } // Property

public Person() // constructor

{}

public Person(string name, string cell) //constructor

{

this.Name = name;

this.Cell = cell;

}

public override string ToString() //method

{

return base.ToString();

}

}

}

Student class:

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace AryanPatel\_MidExam

{

class Student : Person

{

public string CourseName { get; set; } // Property

public double Quizzers { get; set; } // Property

public double Assignment { get; set; } // Property

public double Exams { get; set; } // Property

public double Total { get

{

return this.Quizzers + this.Assignment + this.Exams;

}

} // Property

// constructor

public Student() : base()

{ }

// constructor

public Student(string name, string cell, string courseName, double quizzes, double assignments, double exams): base(name, cell)

{

this.CourseName = courseName;

this.Quizzers = quizzes;

this.Assignment = assignments;

this.Exams = exams;

}

// toString() Method

public override string ToString()

{

return $"\nName: {this.Name} Cell:{this.Cell} CourseName: {this.CourseName} Quizzer: {this.Quizzers} Assignments: {this.Assignment} Exams: {this.Exams}\nTotal: {this.Total}\n";

}

}

}

GradeManager class:

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.IO;

namespace AryanPatel\_MidExam

{

// Static Grade manager class

static class GradeManager

{

// private static field

private static List<Student> students = new List<Student>();

// load students from file into list

public static void LoadStudents(string file)

{

string[] lines = File.ReadAllLines(file);

foreach (string sl in lines)

{

string[] words = sl.Split(' ');

students.Add(new Student(words[0], words[1], words[2], Double.Parse(words[3]), Double.Parse(words[4]), Double.Parse(words[5])));

}

}

// additonal method to load static list

private static List<Student> CreateStudents()

{

List<Student> result = new List<Student>(){

new Student("Sahasan","123-4567","COMP123", 8, 17, 60),

new Student ("Kassie", "234-5678", "COMP123", 10, 20, 65),

new Student ("Maiara", "345-6789","COMP123", 7, 18, 58),

new Student ("Laura", "456-7890", "COMP123", 9, 19, 40),

new Student ("Aaron", "678-9012", "COMP123", 7, 17, 50),

new Student ("Diego", "789-0123", "COMP123", 9, 19, 60),

new Student ("Jancyben", "890-1234", "COMP123", 9, 19, 45),

new Student ("Laila", "901-2345","COMP123", 9, 15, 55),

new Student ("Enas", "123-9012", "COMP123", 7, 17, 57),

new Student ("Mel", "234-0123","COMP123", 9, 16, 47),

new Student ("Deep", "345-1234","COMP123", 9, 19, 63),

new Student ("Palk", "456-8901", "COMP123", 8, 8, 25)

};

return result;

}

// All static methods

public static void Show()

{

foreach (Student s in students)

{

Console.WriteLine(s.ToString());

}

}

public static void Above(double selectedMark)

{

foreach (Student s in students)

{

if(s.Total > selectedMark)

Console.WriteLine(s.ToString());

}

}

public static double Average()

{

double sum = 0;

foreach (Student s in students)

{

sum += s.Total;

}

Console.WriteLine(sum / students.Count());

return sum / students.Count();

}

public static void Top()

{

double max = 0;

Student topper = new Student();

foreach (Student s in students)

{

if (s.Total > max)

{

topper = s;

max = s.Total;

}

}

Console.WriteLine($"Name: { topper.Name }, Marks: {topper.Total}");

}

}

}

