CSc 340 Homework   **Jozo Dujmović**
Topic: Classes

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1. Create the class **student** that includes the following information about student: name, age and gpa.

   Write the following members functions:
   (a) Constructor that creates objects of the **student** class.
   (b) **read** that prompts the user to enter from the keyboard student name, age and gpa. To terminate reading the user should enter the EOF (ctrl-D in Unix and Ctrl-Z in DOS).
   (c) **show** that displays on the screen student name, age and gpa.
   (d) **writefile** that writes a record (name, age, gpa) into the file **student.dat.**
   (e) **getgpa** that returns gpa of the student.
   (f) **readfile** that reads the student record from the file **student.dat** .

   Write a **main** program that demonstrates the work with this class. Declare all necessary objects and variables. Using **read** and **writefile** create the **student.dat**. After closing the file student.dat reopen it for reading. Read and display all students from the file and compute and display the average gpa for all of them.

2. Create the class **triangle** that includes three sides of a triangle.

   Write the following members functions:
   (a) **triangle –** constructor that creates objects of that class.
   (b) **readfile** that reads 3 sides from the file **triangle.dat**. Read until the EOF is detected.
   (c) **show** that displays on the screen 3 sides of triangle, perimeter and area.
   (d) **isequilateral** that checks whether the triangle is equilateral (it must be a triangle and all sides must be equal.)

   Create the input file **triangle.dat** using an editor and insert values needed for testing of all functions. Write a **main** program that demonstrates the work with this class. Declare all objects and variables. Display only equilateral triangles from the input file.

Use the following formulas:
Perimeter = a+b+c
Area = sqrt(s*(s-a)*(s-b)*(s-c)), where s=(a+b+c)/2 is the semi-perimeter.