

CSI 32 LECTURE NOTES (Ojakian)

Topic 5: Using Multiple Objects Together

OUTLINE

(References: ch. 7)

1. Using objects together.
 2. UML (Unified Modeling Language) - a beginning ...
 3. Top-down object oriented design
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1. Using objects together

PROBLEM 1. Create a class *Triangle*. The *Triangle* class should take 3 number pairs for the initialization (e.g. (2,3), (4,5), (1,2)), and have the following features:

- (a) It should use a “Point Class” to make life easier.
- (b) You can get its perimeter with method `perimeter`.
- (c) You can get its area (google for formula!), with method `area`.
- (d) You can translate a triangle by some *x* and *y* amount, with method `move`.
- (e) You can ask if it is a “pathological” triangle (what could go wrong with the 3 inputted points?), with method `isPathological`.

2. UML

PROBLEM 2. Make a UML diagram of the classes from problem 1; first on the board, then using software.

Note: Last problem actually done backwards! Now to do properly ...

3. Bigger Object-Oriented Program

PROBLEM 3. Consider the dice poker game (see Zelle 12.3).

- (a) Create a **design specification** for the dice poker game.
- (b) Create a **top-down design**, along with a **UML diagram** of how the program is going to work.
- (c) Write the program for dice poker following the above design, “using prototyping”: i.e. start with basic functionality and increase functionality.