

# **CSE 115/503**

February 8-12, 2010

## **Announcements**

- Lab 3 (part 1) in recitation this week
- Exam 2 is Friday, February 19<sup>th</sup> – review in class on Wednesday, February 17<sup>th</sup>
- Review sheet posted this week

## Exam 1 Statistics

	Scores
Min	34 (2) [9 F's total]
Median	87
Average	81.62
Max	100 (6) [49 A's total]
Std Dev	14.62

Inside the constructor for MyBugCollection we declared variables for the Terrarium, an Ant, & a Caterpillar.

These variables are called local variables.

Local refers to the scope of the variable.

Scope (of any variable): the part of the program where the variable is in effect/accessible.

Local variable scope is from the point of declaration until the end of the method body.

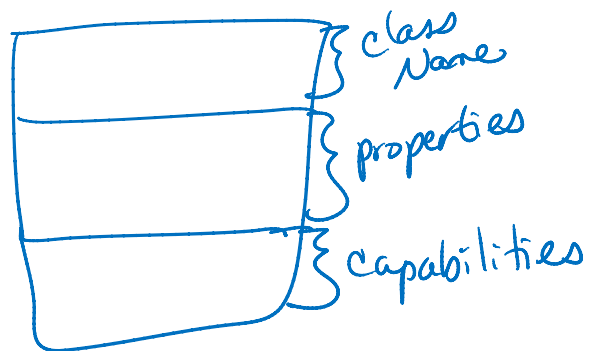
### Relationships between objects

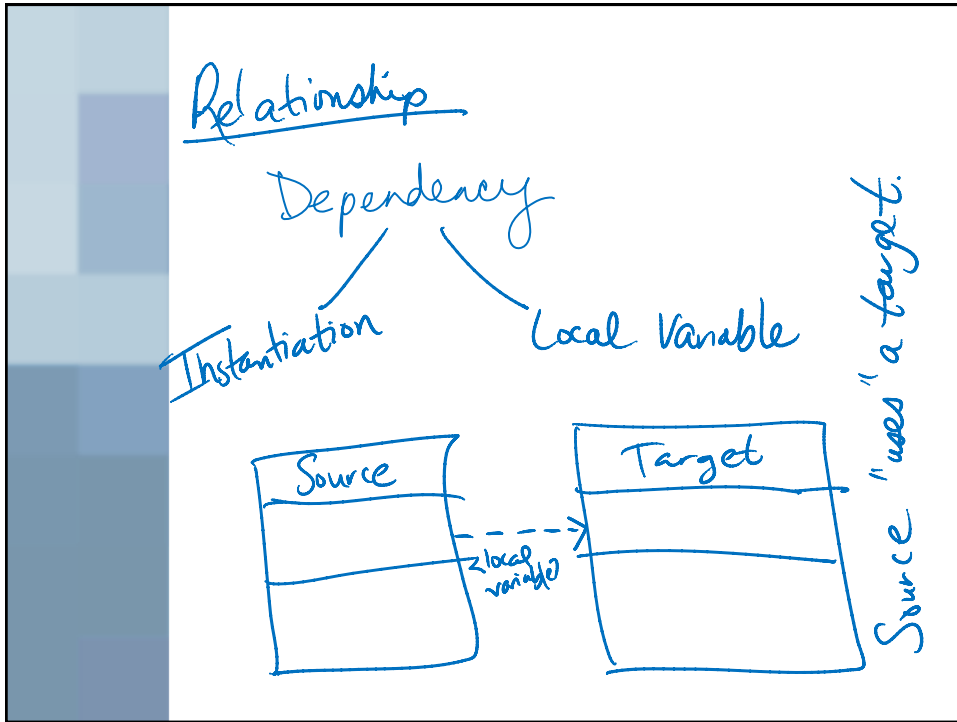
- Formal name
- Informal name
- Representation in source code
- Representation in UML

UML → Unified Modeling Language  
"Graphical Language"

↳ Class Diagrams

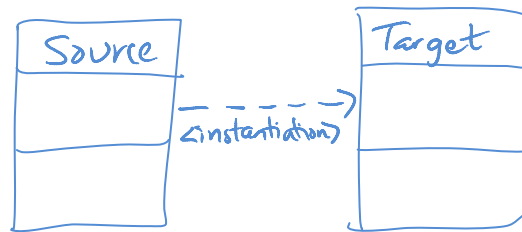
Class Box





## Relationship Recap

- Formal name: Instantiation Dependency
- Informal name: "uses"
- UML



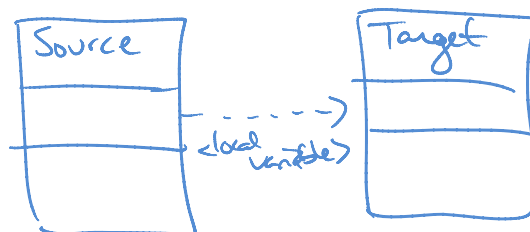
## Relationship Recap

- In source code:

```
public class Source {  
    public Source() {  
        new Target();  
    }  
}
```

## Relationship Recap

- Formal Name: Local Variable Dependency
- Informal Name: “uses”
- UML:



## Relationship Recap

- In source code:

```
public class Source {  
    public Source() {  
        Target target = new Target();  
    }  
}
```

## Graphical Programming

- Creating your own graphics from scratch
- Every program needs a `javax.swing.JFrame`.

## JFrames

- Can have their title set by passing in a string into the constructor
- Should be packed (so they can size themselves according to what graphics are inside them).

## JFrames

- Need their default close operation set if you want your program to end when the window is closed
- Need to have their visibility set to “un-hidden”



## In Source Code

```
javax.swing.JFrame frame = new javax.swing.JFrame("title here");  
  
frame.setDefaultCloseOperation  
    (javax.swing.JFrame.EXIT_ON_CLOSE);  
  
frame.pack();  
  
frame.setVisible(true);
```

## Adding something to the Frame

- We can add one (and only one) graphical container to the JFrame's content pane.
- We can add all our other graphics to that container.

- Syntax:

```
frame.getContentPane().add(/*graphical container here*/);
```

## **DrawingCanvas**

- Can be used to draw upon.
- When created, we should set its Dimension (size) and can optionally pick a background color.

## **graphics elements**

- Elements that live in the graphics package that can be put on DrawingCanvases.
- For graphical elements, we need to set their dimension, location, and color to meet our needs.

## All Graphical Objects

- Will need to be created
- Will need various properties set to our liking
- Will need to be added to a graphical container
  - Which will be added to another container ... until that container is the one added to the content pane on the JFrame