

# CSE 113 A

January 18 – 22, 2010

## Announcements

- ⚙ If you have not picked up a syllabus, please do so
- ⚙ Assignment #1 – sign and return form on last page of syllabus – must be turned in by end of class Monday, January 25<sup>th</sup> to receive full credit.
- ⚙ Make sure to sign up for account



Q In Greenfoot, we see a class diagram panel. (right)

Inside are boxes with words

called class boxes & each one represents a class

Class [programming term]



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Class -

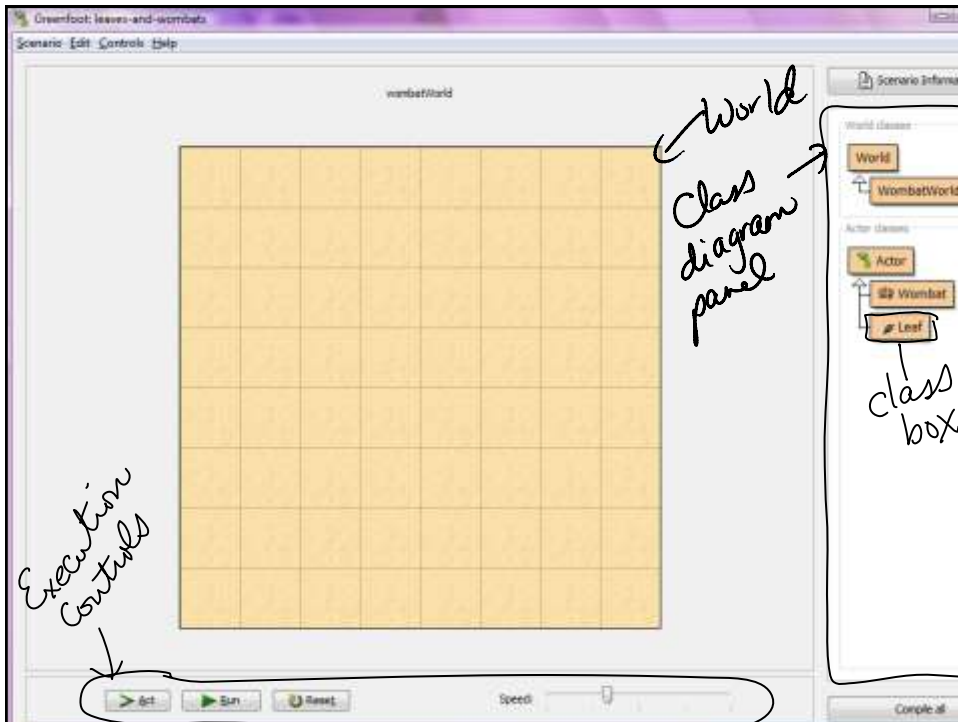
- definition } of something

- description

- how a particular "thing" will function



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## Objects

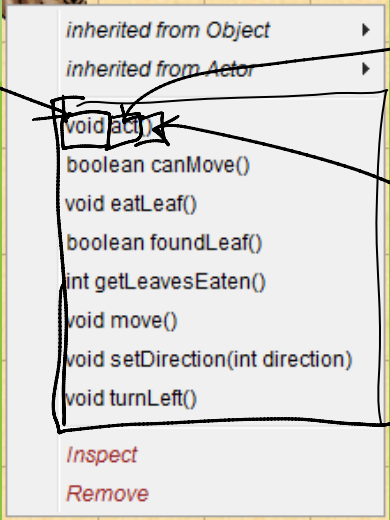
The actual "things" that will perform the actions of our program

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Methods [programming term]

↳ what an object can do






A screenshot of a Java IDE showing a list of methods. The list includes:

- inherited from Object
- inherited from Actor
- void act()** (highlighted with a box and an arrow pointing to the word "void")
- boolean canMove()
- void eatLeaf()
- boolean foundLeaf()
- int getLeavesEaten()
- void move()
- void setDirection(int direction)
- void turnLeft()


At the bottom of the list are the options "Inspect" and "Remove".

Handwritten annotations:

- "return type" with an arrow pointing to the "void" in the **void act()** method.
- "method name" with an arrow pointing to the "act()" part of the **void act()** method.
- "parameter list" with an arrow pointing to the empty space between the parentheses in the **void act()** method.

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Selecting an ~~obj~~ option from the list of methods "calls" or "invokes" the method. The action of the method is then performed.

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Method:

$\overbrace{\hspace{2cm}}$        $\overbrace{\hspace{2cm}}$        $( \overbrace{\hspace{2cm}} )$   
 return      method      parameter  
 type      name      list

Return type: the type of information that gets returned after the method has executed

\* void - indicates that nothing is returned



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\* int - whole number returned

\* boolean - true/false value returned

Method names

- Chosen by programmer
- Should reflect the actions of the method



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## Restrictions:

- \* first character of the name must be a letter
  - \* can not contain special characters (characters other than letters or digits)
    - exception is underscore
- a\_b

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Parameter list - always enclosed by ()

- can ~~be~~ be empty
- if not empty, they contain parameters

↳ Parameters are extra pieces of information needed to perform a task (method)

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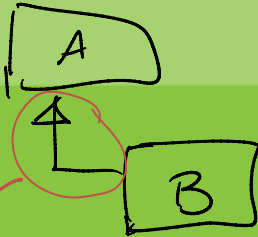
# Methods Recap

- ⊗ Three parts:
  - ⊗ Return type – type of information that is returned from a method call; void if nothing returned
  - ⊗ Name – the name given to the method by the programmer
  - ⊗ Parameters – information that is needed to perform the actions of the method; empty () if none needed
- ⊗ Methods can have a return type, but no parameters; can have parameters, but no return type; can have no return type and no parameters; can have a return type and parameters



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## Class Diagram Panel:



indicates a relationship between A & B. The relationship is called inheritance

"B inherits from A"  
 "B is a subclass of A"  
 "A is the superclass of B"



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If B inherits from A, then B inherits all the methods from A. Therefore, B can do at least all of the things A can do. Typically, B can also do more things that A can not do.

