Adding Behaviors (methods)

Chapter 3
A Java Language Program

• Is a Class
• A Class has data declarations and methods
• A Method has statements or instructions to perform the function of the method
• Statements can be:
  – Sequence statement; Ex: assignment statement
  – Selection statement; Ex: if statement
  – Repetition statement... we will learn it later
• It is similar to a writing an essay in any language:
  – Chapters, paragraphs, sentences, etc.
Sequence Statement

• Assignment statement;

• **Syntax:** (structure, format)
  
  LHS = RHS;
  
  Data = value;

• Example:
  
  gunReloadTime = 5;

• **Semantics:** (meaning)
  
  Assign gunReloadTime the value of 5
Selection Statement

• Implementing choices in the design

• Syntax:

if (condition)
{
    // do something
}

else
{
    // do something else
}
Condition

• How to express / write in Java language the condition for the selection statement?
• Using relational operators:

<
>
<=
>=
==
!=
Implementing Random Behavior

• Using random numbers generated by the Greenfoot environment.
• How to get a random number from the Greenfoot environment?
• Greenfoot itself is a class. Invoke a class method getRandomNumber (range)
• Example:
  percent = Greenfoot.getRandomNumber(100);
  percent will be assigned a random number between 0-99.
Adding new methods

• Lets add methods:
  • turnAtEdge()
  • randomTurn()
  • lookForWorm()
  • Lets add also eatWorm()
  • Lets look at the methods that Greenfoot offers
  • Lets add sound ....
  • Lets stop the Greenfoot when a certain condition is met
10 Concepts

1. Sequence statement
2. Selection statement
3. Method call
4. Method definition
5. Parameter passing
6. Greenfoot methods (ex: getRandomNumber(range))
7. Adding sound (playSound("xyz.wav");)
8. Stopping the Run
9. Other methods in World Class and Actor class
10. Adding comments // as well as /*... */