Prof. Susan Rodger
Announcements

• Assignment 3 storyboards due today!
• Assignment 3 worlds due Thursday
  – Turn worlds in on Blackboard
  – Name textfile “README” or README.txt
  – Upload all three files individually
  – OR Put all three files in a folder and submit a zipped folder
• Check classwork grades on Blackboard as they are put up, late penalty for late classwork
What we will do today

• Chapter 4 Sec 2 – Parameters
• Classwork
• Read for Next time Chap 4, Sec 3
Overview

• The need for more flexible methods
• Creating methods with parameters
• Passing arguments to methods
• Demo
  – Using Alice – methods with parameters
A Beetle Band

- Create an animation for a bug band as an ad for their next concert
- Each band member will perform a short solo
Storyboards

• Each bug member will perform a solo

Do together
   Do in order
   georgeBeetle move up
   georgeBeetle move down
   play sound

Do together
   Do in order
   ringoBeetle move up
   ringoBeetle move down
   play sound

Do together
   Do in order
   paulBeetle move up
   paulBeetle move down
   play sound

Do together
   Do in order
   lennonBeetle move up
   lennonBeetle move down
   play sound

• Note: instruments are already vehicled to the band member playing them.
Code for georgeBeetle

- We will need four versions of the code, one for each band member
- This code will only work for georgeBeetle
A Better Solution

• Four versions of similar code is tedious.
• The things that change are
  – The beetle
  – The music the beetle plays

• Better Solution: write a more flexible method
Parameters

• Built-in methods provide **flexibility** by providing parameters such as distance and duration

• Parameters allow you to pass in values
  – The values are **arguments**

• Example:

```
georgeBeetle move up 0.5 meters duration = 0.5 seconds more...
```

What are the parameters?
What are the arguments?
How many of each?
Types of Parameters

- Alice provides several types of parameters that can be used in your methods.
The Storyboard

• Write one method and use parameters for
  – Which bandmember to perform
  – Which music to play

Solo:
Parameters: bandMember, music
Do together
  Do in order
    bandMember move up
    bandMember move down
  play music
Creating a Method Named Solo

• Can be used for any band member
• Will need
  – An Object parameter – which band member is to play a solo
  – A Sound parameter – which music should be played
World.solo with parameters
Calling the solo method

- Note that in each call, arguments must be given for both parameters
A Number Parameter

- Add a number parameter for **height** the **bandMember** jumps up and down

Must add this argument to each call.

Demo

```
| World.solo | bandMember = georgeBeetle  | music = World.bassGuitar | height = 2 |
| World.solo | bandMember = lennonBeetle  | music = World.guitarSolo  | height = 1 |
| World.solo | bandMember = ringoBeetle   | music = World.DRUM       | height = 0.5 |
| World.solo | bandMember = paulBeetle    | music = World.saxophone  | height = 4 |
```
Classwork Today

• Create worlds
  – Beetle band duet
  – Frog Escape