Announcements

- Assignment 3 storyboards due today!
- Assignment 3 worlds due Thursday
  - Turn worlds in via web page submit on course assignment page
  - Name textfile “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, Clwk3 and Clwk4

What we will do today

- Chapter 4 Sec 2 – Parameters
- Classwork
- Read for Next time Chap 4, Sec 3
- Reading quiz

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:
gorgeBeetle move up
gorgeBeetle move down
play sound

  Do together:
  Do in order:
ingoBeetle 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:**
  
<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>George Beetle</td>
<td>Move up 0.5 meters</td>
</tr>
<tr>
<td>duration = 0.5 seconds</td>
<td></td>
</tr>
</tbody>
</table>

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
- **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

A Number Parameter

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

 Classwork Today

- What is the difference between a parameter and an argument?
- Create worlds
  - Beetle band duet
  - Escape from Snake