Note: Thanks to Wanda Dann and Steve Cooper for slide ideas
Announcements

• Assignment 3 due today!
• Assignment 4 out
What we will do today

• Chapter 4 Sec 2 – Parameters
• Classwork
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

1. **George Beetle**
   - Move up
   - Move down
   - Play sound

2. **Ringo Beetle**
   - Move up
   - Move down
   - Play sound

3. **Paul Beetle**
   - Move up
   - Move down
   - Play sound

4. **Lennon Beetle**
   - Move up
   - Move down
   - Play sound
• 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:**

  Parameters: distance, duration
  Arguments: 0.5 meters, 0.5 seconds
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

- World.my first method
- World.solo

**World.solo**
- Obj bandMember
- music

No variables

**Do together**
- Do in order
- `bandMember` move up 0.5 meters duration = 0.5 seconds more...
- `bandMember` move down 0.5 meters duration = 0.5 seconds more...

- World play sound music more...
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

Demo
Classwork Today

• Create worlds
  – Beetle band duet
  – Magic Act