CompSci 4
Chap 4 Sec 2
Sept 20, 2011

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Announcements

• Assignment 3 storyboards due today!

• Assignment 3 worlds due Thursday
  – Turn worlds in via web page submit on assignment page
  – 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, Clwk3 and Clwk4, penalty for late classwork
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
    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
  - Escape from Snake