Announcements

- Skip Chapter 3
- Read Chapter 4, Section 1
- Assignment 3 out
  - Storyboard due Tues
  - World due Thurs
    - Blackboard
    - Put on web page

What we will do today

- Lecture on Chap 2, Sec 2
- Classwork
  - Create several animations
    - Snowman
    - Monkey and ball
    - Chicken and horse
    - Boat pointing to island
    - others
  - Following along in text, some additions
  - Exercises
  - Get checked off

Last Time

- Began the animation process
  - Storyboards
- We will continue using the snowman example from last time
- Show snowman animation
Step 2: Implementation

- Implementing an animation requires
  - Setting up the initial scene in Alice
  - Writing the Program (script)

Create the Initial Scene

Techniques and Tools

- Mouse used to
  - Setup the initial scene
  - Approximately position objects in the scene
  - Resize objects

- Camera Navigation is used to
  - Set the camera point of view

- Scene Editor’s Quad View
  - Position one object relative to another object

Writing a Program

- “Writing” a program (script)
  - A list of instructions to have the objects perform certain actions in the animation

- Our planned storyboard (todo list) is
  - Snowman turns to face snowwoman
  - Snowman makes eyes and calls out to snowwoman
  - Snowwoman turns around

- Now translate design steps to program instructions
Translating the Design

• Some steps in the storyboard can be written as a single instruction
  – snowman turns to face snowwoman
• Other steps are composite actions that require more than one instruction
  – Snowman tries to catch the snowwoman’s attention
    • Snowman says “ahem”
    • Snowman raises and lowers eyes

Actions

• Sequential
  – Some actions occur one after the other
    • First: snowman turns to face snowwoman
    • Second: snowman tries to get snowwoman’s attention
• Simultaneous
  – Some actions occur at the same time
    • Snowman says “Ahem” and blinks at the same time

Coding the snowman program

• Things to note:
  – Nesting of DoTogether and DoInOrder blocks
  – Arguments for the move instruction
    • direction
    • distance
Testing

- Important step in creating a program – run it be sure it does what you expect it to do
- Recommend you use **incremental development**
  - Write a few lines of code and then run it
  - Write a few more lines and run it
  - Write a few more lines and run it
- This process allows you to find any problems and fix them as you go

Comments

- While Alice instructions are easy to understand, it is often desirable to be able to explain (in words) what is going on in a program
- Use comments to explain to the human reader what a particular section of code does

Comments use //

- Comments appear in **green**
- Alice ignores comments
- Comments make the program easier to read

Comments (cont)

- Comments can describe a large block of program code
- Comments can describe a small subsection of program code

- Show monkey, chicken and boat animations