Note: Thanks to Wanda Dann and Steve Cooper for slide ideas.
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 same time
Action blocks in Alice
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