CompSci 4
Review for Exam 2
Nov 8, 2007

Prof. Susan Rodger
Announcements

• Start Java next time
  – We will use Eclipse with Java

• Assignment 6 due tonight
Topics for the Exam

• No HTML
• Alice Chapters 1-2,4-7,9-10
  – Focus on Chap 5-7, 9-10
• Topics
  – Random numbers
  – Looping structures
  – Variables
  – If/else
  – Lists/Arrays
Random Numbers

• Assume they work
  – Can use `==` to compare integers
  – Use “integer only” if you want an integer
  – Use “random number” to generate random numbers
    • Maximum is “up to but not including”
    • Default values
Looping Structures

• Loop
  – Simple and complicated

• While

• When to use “while” vs. “if”
Conditionals – If/Else

• Format
  if (condition)
    do if true
  else
    do if false

• Nested if
• 3 Logical and 6 relational operators
• When do you use an “if” vs “while”
Variables

• Types
  – Local variable
  – Parameter
  – World variable
  – Class variable

• What do you do with a variable?
  – It stores a value
    • Initialize it
    • Use its value
    • Update it
Lists

• Create a list
• Process a list
  – For all in order
  – For all together
  – Item-in-list
• List search
Array

• Create an Array
• Process an array
  – Loop – complicated version
  – Use value from array
  – Set value in array
• Search for item in an array
How to Study for the Exam

• Write methods from old classworks
• Lecture notes
• Reading quizzes – will make available
• Reading in book
• Understand the topics
Problem

- Objects are a Bunny and a bunch of frogs. They are all facing the same direction. The Bunny is behind the frogs.
- The frogs are all in a list called “frogs”
- The Bunny and frogs will be moving each time an event occurs. The bunny will move 0.5 meters and the frogs 0.15 meters each time.
- When the Bunny is at least the “Bunny’s depth” in front of all the frogs, it should turn around and say “Stop”
Animation

• Start

• Finish
Write function IsBunnyInFront

• Returns true if Bunny is at least Bunny’s depth in front of all the frogs in the list frogs
• Else returns false
Write method moveAndCheck

- Moves all the frogs in the list frog 0.15m
- Moves the bunny 0.5m
- If the bunny is in front of all the frogs, turns around and says Stop.