CompSci 4
Review for Exam 2
Nov 9, 2006

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 ifs
- 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.