

CompSci 4

Review for Exam 2

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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.