CompSci 4
Review for Exam 2
November 16, 2010

Announcements

- Start Alice 3 next time
  - Go to [www.alice.org](http://www.alice.org) and download the most recent version of Alice 3
- Assignment 7 storyboard due today with partner name!
- Assignment 7 due in one week

Prof. Susan Rodger

Topics for the Exam

- No HTML
- Alice Chapters 1-2, 4-7, 8.1, 9-10
  - Focus on Chap 5-7, 8.1, 9-10
- Topics
  - Random numbers
  - Looping structures
  - Variables
  - If/else
  - Lists
  - Arrays – ArrayVisualization and non-visual
  - Recursion

Random Numbers

- Random Numbers
  - Use a variable if need the number more than once
  - 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”
• BDE

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
  – Do something to a part of an object
• 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
- ArrayVisualization and nonvisual

Recursion

- Function or method call a “clone” of itself
- Must get closer to ending with each step
- Must be a way out
- Recursion is a loop, but you don’t use “loop” command
- You will need to know recursion at “reading level”

How to Study for the Exam

- Write methods from old classworks
- Lecture notes
- Reading quizzes – will make available
- Reading in book
- Understand the topics
- Work problems from old tests