CompSci 94
Introduction to Programming
Animation and Virtual Worlds
August 28, 2018

Prof. Susan Rodger

Class Today
• Go over syllabus, web page
• Introduce computer science and Alice
• Demo of Alice
  – Simple world/sample Alice worlds
• Classwork - A simple Alice world

www.cs.duke.edu/courses/fall18/compsci094

About Prof. Rodger

What is Computer Science?
• Computer science is no more about computers than astronomy is about telescopes. - Edsger Dijkstra

• Computer science is not as old as physics; it lags by a couple hundred years. However this does not mean that there is significantly less on the computer scientist’s plate than on the physicist’s: younger it may be, but it has had a far more intense upbringing! - Richard Feynman
Computer Science is a young discipline
- First computer science department formed in 1962

What is Computer Science?
- Artificial Intelligence
  - Roomba
  - Spirit, Mars Rover
  - Self-driving car

What is Computer Science?
- Medicine, Genomics

What is Computer Science?
- Animation
What is Computer Science?

• The Organization of Data, Sharing, and Searching

Computer Science and Programming

• Computer Science is more than programming
  – Called Informatics in many countries
  – Elements of both science and engineering
  – Elements of math, physics, cognitive science, music, art, and many other fields

• To some programming is an art, to others a science, to others an engineering discipline.

Google Searching …

What Will We Do in CompSci 94?

• Alice 3 for one week
• Web pages/html (one week)
• More Alice 3 programming
• Logistics – bring to class
  – laptop
  – textbook.
How CompSci 94 Will Work

• In Class
  – Lecture/demos - short
  – Classwork (in assigned pairs)
  – REQUIRED ATTENDANCE
• Outside of class
  – Complete work not finished in class
  – Reading/Videos
  – Assignments
  – Reading Quizzes

What Is Alice?

• A modern programming tool
  – 3-D graphics
  – 3-D models of objects
• Animation
  – Objects can be made to move around virtual world (a simulation or video game)

What does Alice run on?

• Alice is written in Java – should run on many systems
  – supports Mac and PC
• Which version of Alice are we using?
  – Alice 3.4
  – Alice.org, see the CompSci 94 resources page
  – Note: Alice 3 is quite a bit different from Alice version 2

Example from Alice 2
Example from Alice 2

The Power of Alice

- Automatically keeps track of 3-D objects
  - What objects are in the virtual world
  - Types of objects
  - Positions of objects in the world

An Alice 3 example

- Panda Pattern

Download Alice 3 from alice.org, NOT Alice 2!
For Thursday!

• Finish classwork from today
• Download Alice 3 from www.alice.org
• Assignment 1 out – Due September 4
  – Not Alice

Demo

Code

```
declare procedure myFirstMethod

do in order
  if this abysphinxCat then
    turnToFace this cow and add detail
  end if
  if this cow then
    turnToFace this abysphinxCat and add detail
  end if
  if this abysphinxCat then
    say "Watch what I can do" and add detail
  end if
  if this abysphinxCat then
    move left 2.5 and add detail
  end if
  do together
    if this abysphinxCat then
      move forward 5.0 and add detail
    end if
    if this cow then
      say "Whoa!" and add detail
    end if
  end do together
  do together
    if this abysphinxCat then
      move down 2.0 and add detail
    end if
    if this cow then
      move forward 3.0 and add detail
    end if
  end do together
  do together
    if this cow then
      turn left 30.5 and add detail
    end if
    if this abysphinxCat then
      turn right 30.5 and add detail
    end if
  end do together
```