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

How do you keep your sanity?

CompSci 94 Fall 2018
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

Samuel D. Conte
Professor emeritus of computer science and mathematics was the founding department head of the nation's first computer science program. October 1962.
What is Computer Science?

• Artificial Intelligence

Spirit, Mars Rover

Self-driving car

Roomba

Personal Robot
What is Computer Science?

• Medicine, Genomics
What is Computer Science?

• Animation
What is Computer Science?

• The Organization of Data, Sharing, and Searching

Facebook

Snapchat

Ebay

YouTube

Amazon

Google
Google Searching …

Did you mean: computer science
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.
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!

Alice 3 is the newest installment of the Alice programming language. It has all of the features that have made Alice an exciting and creative first programming experience with an added emphasis on object-oriented concepts. Alice 3 has a new rich gallery of models that includes everything you need to spark your creativity including a full Sims ™ character builder. The new gallery has been built upon a shared class joint structure allowing you to share animations between different characters of the same type. In addition it supports a number of great features to assist in a full transition to the Java programming language including viewing the generated Java code in a side by side window and even exporting your world into NetBeans to be able to extend the functionality by coding Alice worlds directly in Java.

Features

Comp Sci 94 Fall 2019
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
   this.abyssinianCat turnToFace this.cow add detail
   this.cow turnToFace this.abyssinianCat add detail
   this.abyssinianCat say 'Watch what I can do' add detail
   this.abyssinianCat move UP 2.0 add detail

do together
   this.abyssinianCat move FORWARD 5.0 add detail
   this.cow say 'Whoa' add detail

do together
   this.abyssinianCat move DOWN 2.0 add detail
   this.cow move FORWARD 1.0 add detail

do together
   this.cow turn LEFT 0.5 add detail
   this.abyssinianCat turn RIGHT 0.5 add detail
```