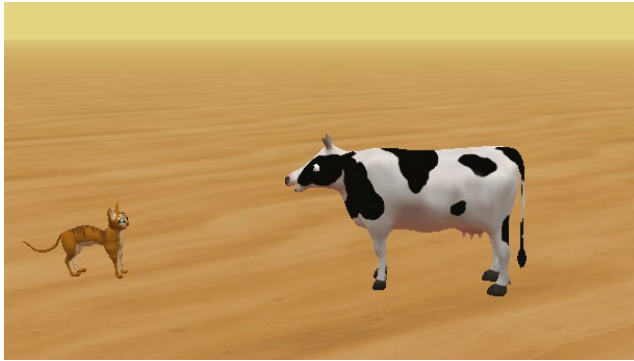


CompSci 94

Introduction to Programming Animation and Virtual Worlds

August 18, 2020



Prof. Susan Rodger

Class Today

- Go over syllabus, web page
- Introduce computer science and Alice
- Demo of Alice
 - Simple world/sample Alice worlds
- Classwork – Get to know each other

www.cs.duke.edu/courses/fall20/compsci094

About Prof. Rodger



How do you keep
your sanity?



TA/UTA introductions

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

PURDUE
UNIVERSITY

1962

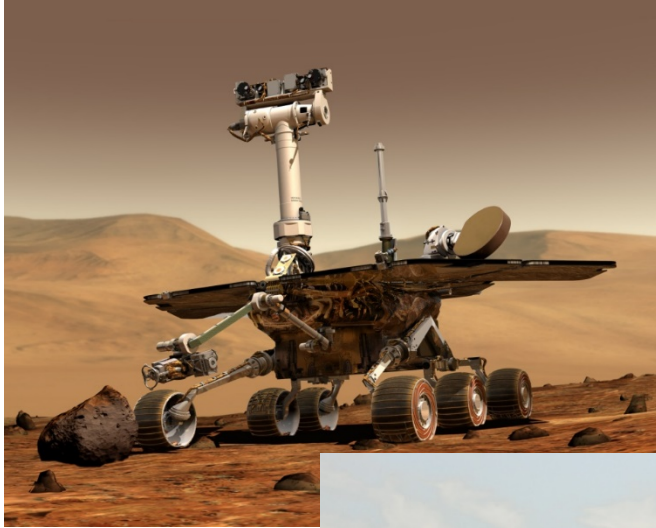


Samuel D. Conte

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

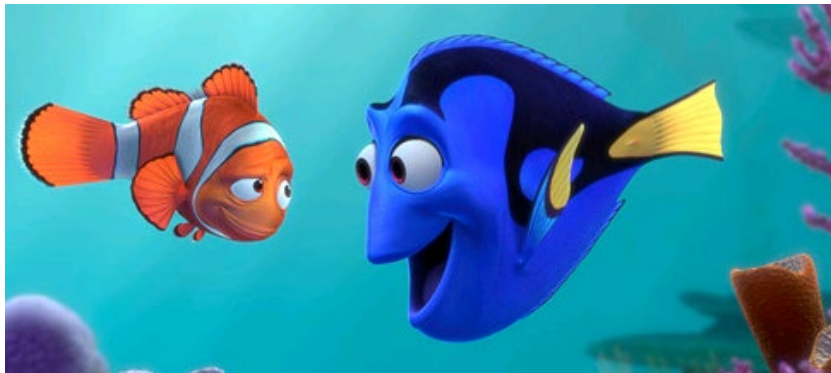
What is Computer Science?

- Medicine, Genomics



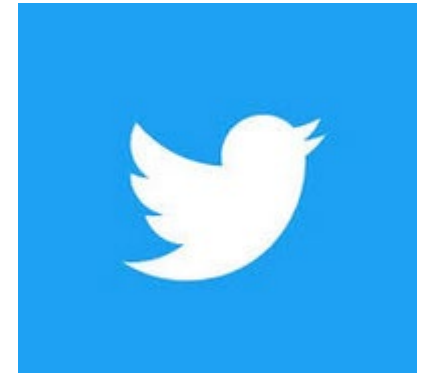
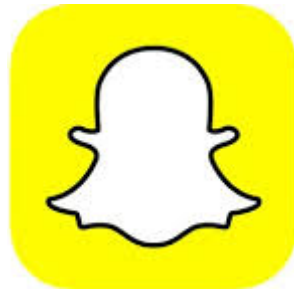
What is Computer Science?

- Animation



What is Computer Science?

- The Organization of Data, Sharing, and Searching

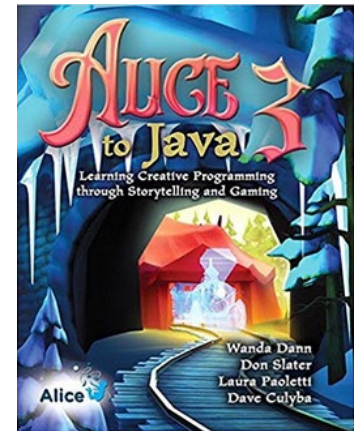


Computer Science and Programming

- 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?

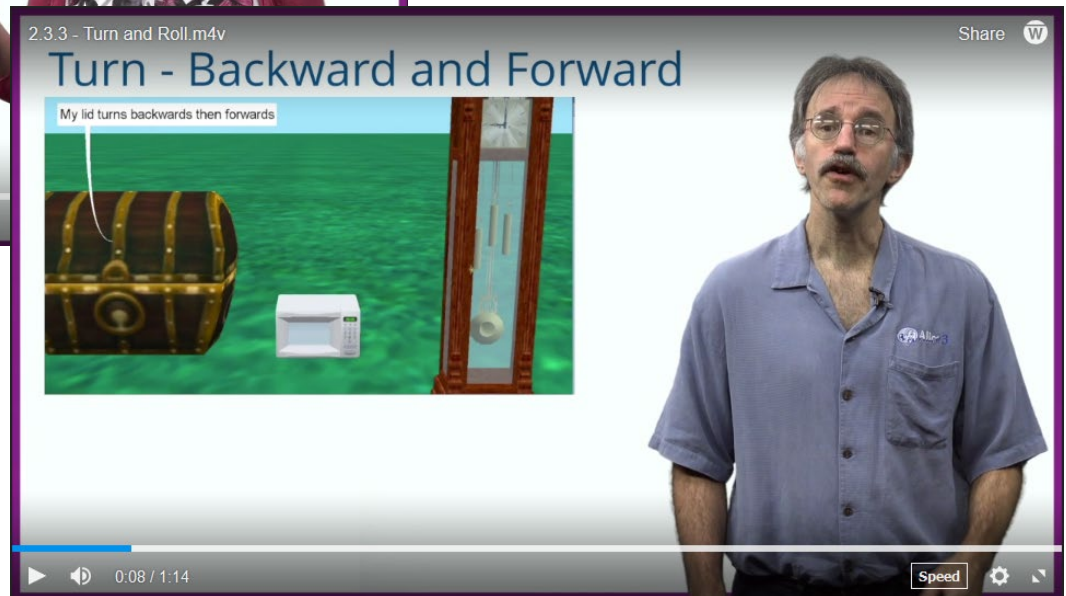
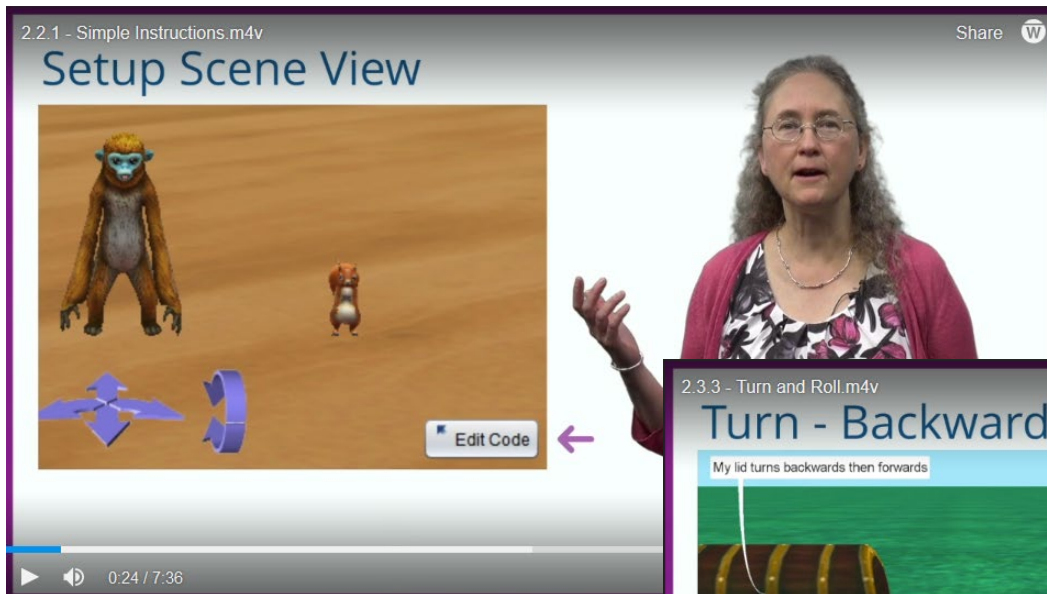
- Alice 3 programming
- Logistics – bring to online lecture
 - laptop/computer
 - **optional** Textbook
 - Instead: Free videos



Optional

Videos – Watch and take online quiz (on Sakai) before class

Prof. Susan Rodger/Prof. Steve Cooper



How CompSci 94 Will Work

- In Class
 - Lecture/demos - short
 - Classwork
 - REQUIRED ATTENDANCE
 - Checkoff Classwork
- Outside of class
 - Complete work not finished in class
 - Watch/Do Videos – before class
 - Online Quizzes – before class
 - Assignments

Don't Send email, use Piazza to ask questions!

The screenshot shows the Piazza web interface for the course "CompSci 94 Fall 2020". The browser address bar shows the URL <https://piazza.com/class/kdug8xyvcvpci?cid=6>. The interface includes a top navigation bar with tabs for "LIVE Q&A", "Drafts", "logistics", "other", "lecture", "classwork", "assignments", "consultinghours", "exams", and "alice_3". The main content area displays a "note @6" titled "Welcome to CompSci 94" by Susan Rodger, updated 11 hours ago. The note text reads: "You can ask questions in Piazza. This is much better than emailing the staff. You can post your questions anonymously to students if you want (not anonymous to staff). Encourage you to try to answer others questions". Below the note is a section for "followup discussions" with a text input field for "Compose a new followup discussion". The left sidebar shows a list of posts, including "Zoom links", "Search for Teammates!", "Welcome to CompSci 94", "Introduce Piazza to your stud...", "Get familiar with Piazza", "Tips & Tricks for a successf...", and "Welcome to Piazza!". The bottom status bar shows "Average Response Time: N/A", "Special Mentions: There are no special mentions at this time.", and "Online Now: 2 | This Week: 17".

What Is Alice?

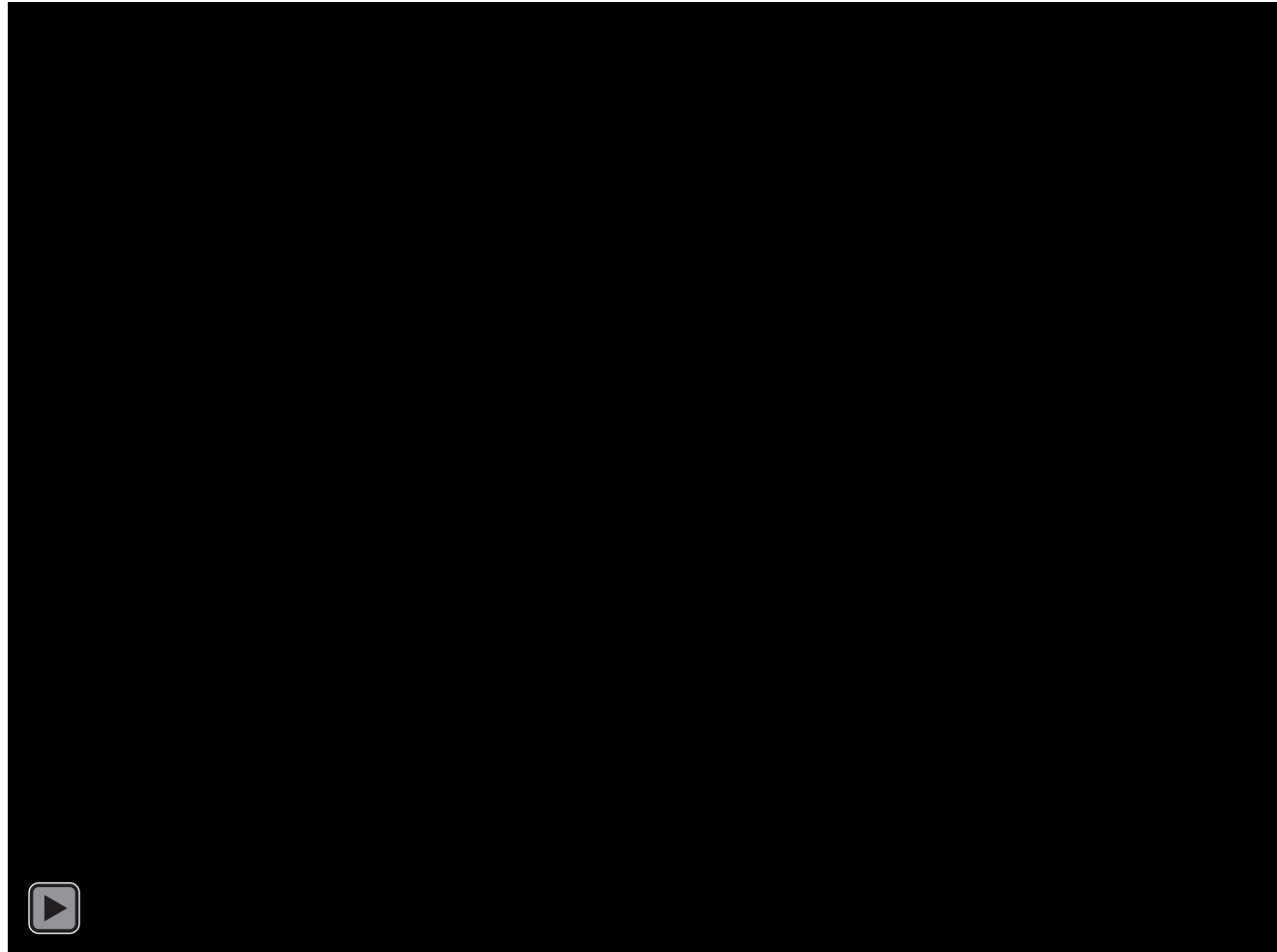


- A modern programming tool
 - 3-D graphics
 - 3-D models of objects
- Animation
 - Objects can be made to move around virtual world (a simulation or video game)

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 (NOT netbeans version, NOT beta)
 - Alice.org, see the CompSci 94 resources page
 - Note: Alice 3 is quite a bit different from Alice version 2

Example from Alice 2



Some Alice 3 examples

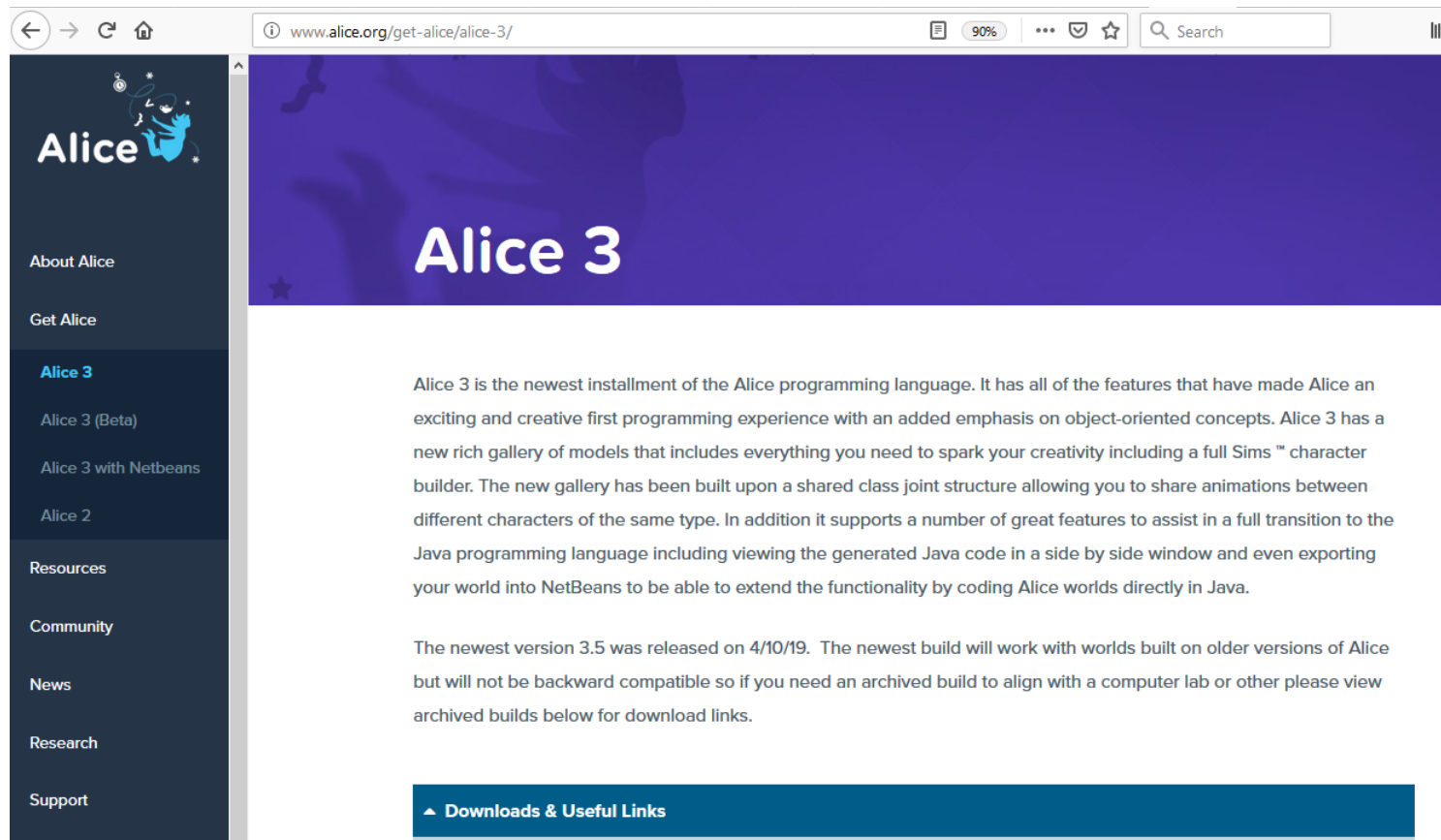
Who are you?

<https://bit.ly/cps94f20-0818-1>

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

Download Alice 3 from alice.org, NOT Alice 2! NOT netbeans, NOT Beta!

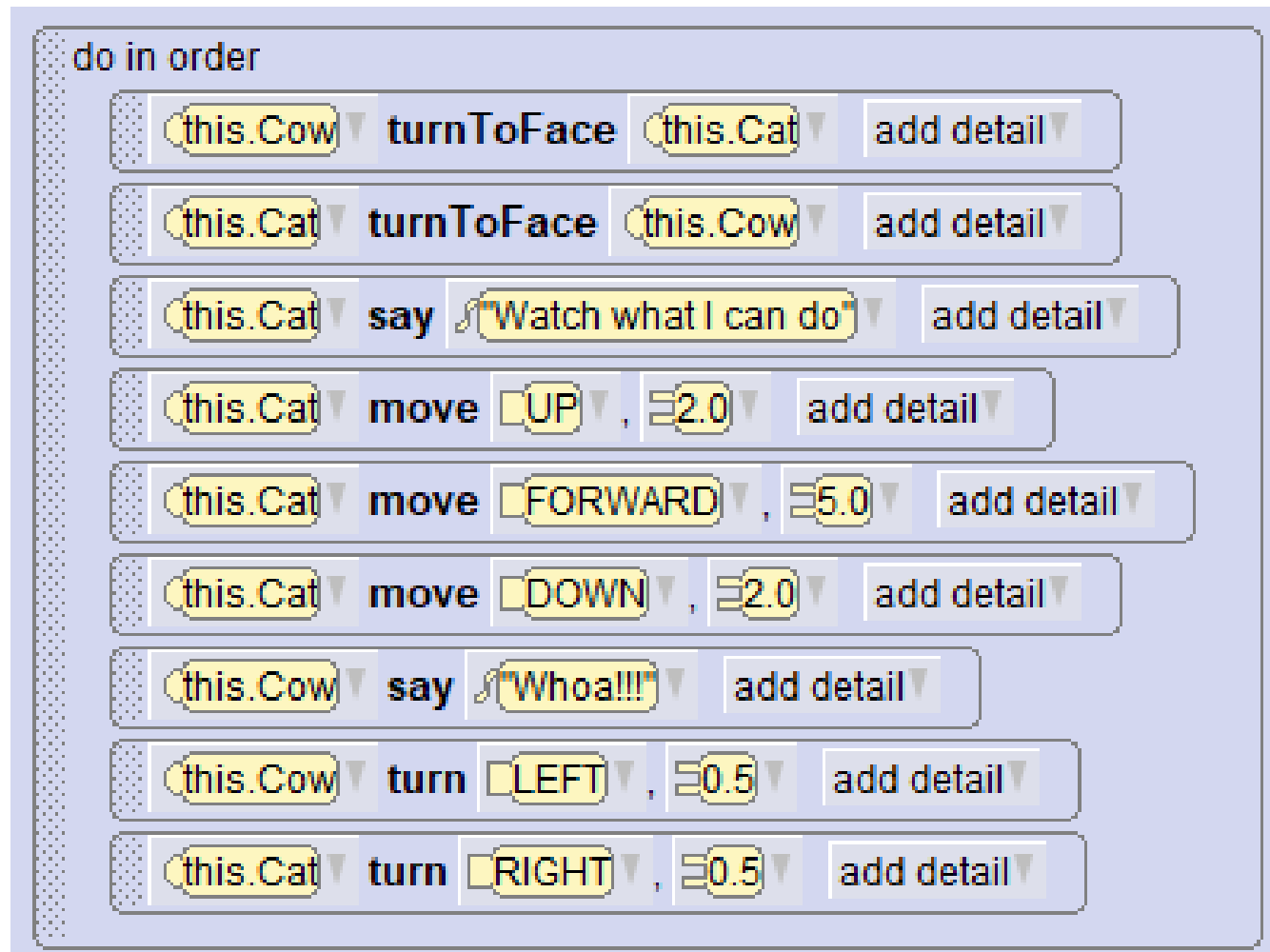


Alice Demo



Code

do in order



```
do in order
  this.Cow turnToFace this.Cat add detail
  this.Cat turnToFace this.Cow add detail
  this.Cat say "Watch what I can do" add detail
  this.Cat move UP 2.0 add detail
  this.Cat move FORWARD 5.0 add detail
  this.Cat move DOWN 2.0 add detail
  this.Cow say "Whoa!!!" add detail
  this.Cow turn LEFT 0.5 add detail
  this.Cat turn RIGHT 0.5 add detail
```


For Thursday!

- No Alice classwork today but usually you would finish it
- Download Alice 3 if you haven't yet
- Assignment 1 out – Due Aug 27
 - This assignment does not use Alice
- Watch videos and answer questions for online quiz BEFORE coming to class.