Introduction to Alice

Alice is named in honor of Lewis Carroll’s *Alice in Wonderland*
How This Module Will Work

General plan
- lecture/demonstrations
- lab exercises … in lab
- lab exercises … on your own

Out-of-class:
- assigned readings from AliceBook
- complete any work not finished in lab
- assigned Alice exercises
Overview

Why Alice?

Getting Started with Alice Programming

- Where to find software and 3D models
- Demo

Major goal:
- to have you set up and run Alice so you can work with examples and lab exercises
Why Alice?

- A modern programming tool
  - object-oriented ... without coding (4GL)
  - 3-D models of objects and graphics
  - Event-driven interactions

- Animation
  - objects can be made to move around the virtual world (a video game or simulation implemented in 3-D)
Fast Start Up

Can quickly learn to create
- a simple animation in a matter of minutes
- a non-trivial animation in a few lab sessions

Can learn to use the Alice interface in one lab session
Demo

- Starting Alice
- Running A World
- How to Exit
- Why Alice might crash
- What to do if Alice crashes
What does Alice run on?

Alice is written in Java -- this helps the software run on many popular systems.

Right now, the software team is working only in the PC version.

Mac and Linux versions are soon to be released.

Check the Alice web site for updates.
ALICE at CMU

Download over the web from CMU

www.alice.org

Note: downloading may take more than an hour over a phone/modem connection

The file is almost 70 MB!

It is Java based but it will install the Java it needs.

It is a self-extracting exe file
We maintain a local copy of the latest version of Alice on “turing”

- map a network drive
  - `\\turing.cs.plymouth.edu\addon`
  - there may be multiple versions … current one is … AliceInstall2.0b.exe

- ftp to turing.cs.plymouth.edu
  - in directory `/fileserv/addon/ AliceInstall2.0b.exe`
A Word to the Wise

Alice automatically manages memory

But, writing and testing an animation is an intense load on the computing system – a crash can occur.

This is “beta” software

Best solution:

💡 save your world every 15 minutes
   (Or at least every half hour)
💡 also save to a backup system
   (for example, your M: drive)
Objects in Alice
Object Position

Objects

- are positioned in 3-D space
- Have six degrees of orientation/freedom
The Power of Alice

- Automatically keeps track of 3-D objects
  - what objects are in the virtual world... their behaviors and characteristics
  - positions of objects in the world
  - handles interactions between objects
Galleries of 3D Objects

Sources of 3D objects
- the local gallery shipped with the software
- Alice web gallery
Objects

What is an object?
- anything that can be identified as unique from other things

How is an object identified as unique?
- has a name
- has properties:
  - width, height, color, location, age, ss#, id#
- has a purpose:
  - associated actions it can perform
  - tasks it can carry out
Class

Objects are categorized into classes

- Peter
- Paul
- Mary

Each object is an instance of the class.

- Spike
- Scottie
- Fluffy

All objects in a class have similar properties and generally can perform the same tasks.
Objects in a Virtual World

In Alice, each 3-D model is a class of objects
- each object of the class has a unique name
  - Mummy, Mummy1, Mummy2
- has color(s)
  - Pink, White, Grey, Black, Blue, ....
- has 3 dimensions
  - height, width, depth
Object Parts

Objects are frequently composed of Parts
Animations, Events and Interactions in Alice
Kinds of Animations

Let’s watch two demos ... to see two kinds of animations

Movie (FirstWorld.a2w)
- user just watches the animation on screen
- "machine-centric"

Interactive (DancingBee.a2w)
- user clicks on mouse, types a key on keyboard
- "user-centric"
Event driven Interactivity

Chap1-InteractiveDemo … do it now!

- what are the events?
- what response does the skater make to each event?
Animations that are interactive depend on the user's actions:
- mouse click
- key press
- others (Head Mounted Device, etc.)

These actions are called events.

Interactive programs are event-driven.
Your assignment is to read

- Chapter 1
- AB pp 15-18
- PDF pp 16-19

The reading assignment is to be completed **before this week’s lab!**