Adventures in Alice Programming
Two-Week Workshop
Motivation and Background

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Introductions - Faculty Presenters

<table>
<thead>
<tr>
<th>Susan Rodger</th>
<th>Wanda Dann</th>
<th>Steve Cooper</th>
<th>Richard Lucic</th>
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Introductions - Students/Staff

<table>
<thead>
<tr>
<th>Elizabeth</th>
<th>Daniel</th>
<th>Bella</th>
<th>Teddy</th>
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<tr>
<td>Kathy Menchaca</td>
<td>Brook</td>
<td>Pam</td>
<td>Camelia</td>
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Agenda for Workshop

• Week One - Motivation and Introduction to Alice
  – Overview and Past Work
  – Research Study
  – Getting Started Tutorials and Special Topic Tutorials
  – Presentation on Alice 2/Alice 3 and other Alice Demos
    – Steve Cooper and Wanda Dann
    – Presentation on VCL – Richard Lucic
• Week Two - Usage of Alice in Middle Schools and High Schools
  – Lesson Plans with Alice – develop three lesson plans
  – A few more tutorials
  – Visit the Dive
Motivation and Introduction to Alice

How do we Introduce and Teach Science?

- Physics – experiments
- Chemistry - experiments
- Biology - experiments

We don’t introduce Computer Science in K-12!

- Not taught in middle schools and many high schools
- Students don’t know what computer science is!
- What they think it is:
  - “keyboarding, spread sheets, word processing....”
- Those are skills and tools, not computer science!
- Programming can be more creative and exciting!

If taught, how do we introduce CS?

```java
public class Simple {
    public static void main(String[] args) {
        System.out.println("Hello World!");
    }
}
```

- Write a calculator
- Write a banking program
- In the beginning, mostly textual input/output...
Why Can’t the Introduction of Computer Science be exciting?

• Programming – it’s always been
  – Hands-on
  – Interactive
  – Can be Frustrating!
• What’s missing?
  – Not Getting Exciting Results
    • Easily, right away
  – Too textual-based, including errors
  – Not appealing to today’s kids in which media and technology are a part of their life!

Bring on Alice Virtual Worlds!

• Alice is
  – Hands-on!
  – Interactive!
  – Visual!
  – Less Error prone
  – Exciting Results right away!
• Alice has the potential to excite kids about computer science in the same way that experiments excite kids about chemistry, physics and biology!

Alice Programming Language

• Create interactive stories or games
• Learn programming in an easy way, drag-and-drop your code
• Problem solving with visual feedback
  – Logical thinking, Computational thinking
• Along the way, learn computer science concepts:
  – Loops, classes, methods, functions, arrays

Alice Developed by Randy Pausch

• Carnegie Mellon University
• Virtual Reality Researcher
• Wrote the Last Lecture
• Died of Pancreatic Cancer in 2008
The Alice Team – Alice is free!  
www.alice.org

Alice Demo: Kitty Story – children’s book on handicapped child

By Betty Stone  
Animated by Deborah Nelson

KITTY STORY

Let’s visit Little Kitty the kitty. She lives with her Daddy, her Mommy, and her sister, Moon Song.

Let's look at your x-ray Kitty.

Sometimes Her mom takes her to the Doctor so that she can check out her knee. Sometimes that hurts a bit and sometimes it doesn’t.
At night, her mom or dad puts leg splints on her knees. Kitty does not like this one little bit! She does a good job of crying.

**Object Position**

- Objects
  - Are positioned in 3D space
  - Have six degrees of freedom

More on ... Alice Programming Language

- Has libraries of 3D objects
- Keeps Track of objects you select

**Objects Have Multiple Parts that are moveable**
Alice Code is Easy to Learn

Select Code, Drag-and-Drop code in program

Play Alice Animation

• Chicken rises, cow turns head and talks

Versions of Alice

• Alice 2.3 - WE WILL USE THIS VERSION
  – Good for Middle School/High School introduction to programming
  – Supported, will be around for awhile, stable
• Alice 3
  – Good for full High School programming course to lead into a Java course
  – Released last summer, still improving it
• StoryTelling Alice - Caitlin Kelleher
  – Written as prototype, not supported
  – PhD Thesis under Pausch
  – Now developing Looking Glass

Next Steps

• Research Study
• Get Alice 2.3 installed
• Then ...... Let’s Try some Alice