Flip-Switch

A Novel Interaction Technique

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Project Goal

Design and develop an interaction technique that solves the occlusion problem in mouse-based, goal crossing user-interfaces utilizing a zero button mouse.

Design Process

1. Brain Storming
   - •Sketches
   - •Flipbook

2. Flip-Switch Design
   - •Behavior
   - •Rational

3. The Prototype
   - •Implementation
   - •Demo

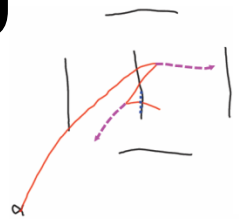
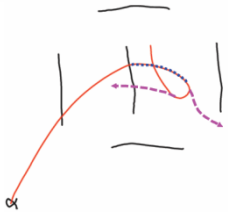
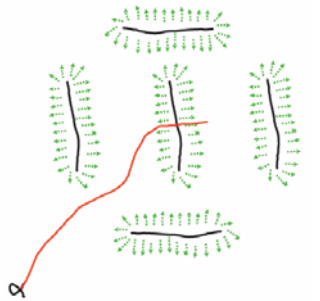
4. User Testing
   - •Experiment
   - •Results

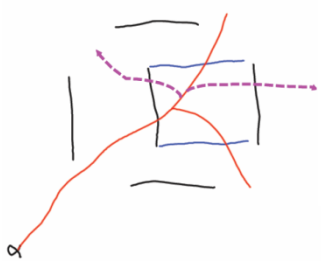
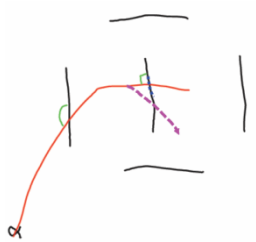
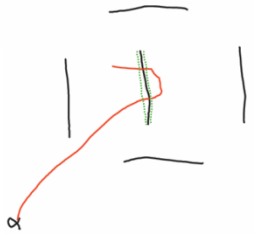
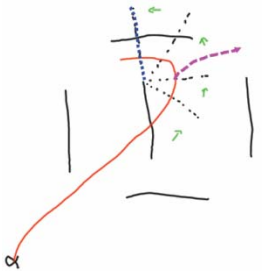
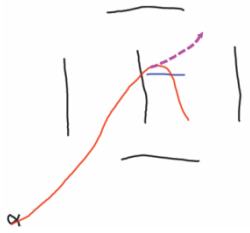
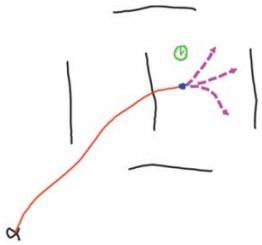
5. Flip-Switch’s Future

Brain Storming

Sketches

- 10 Design Sketches
- Group Brainstorming
- Smart Whiteboard

Brain Storming

Flip Books

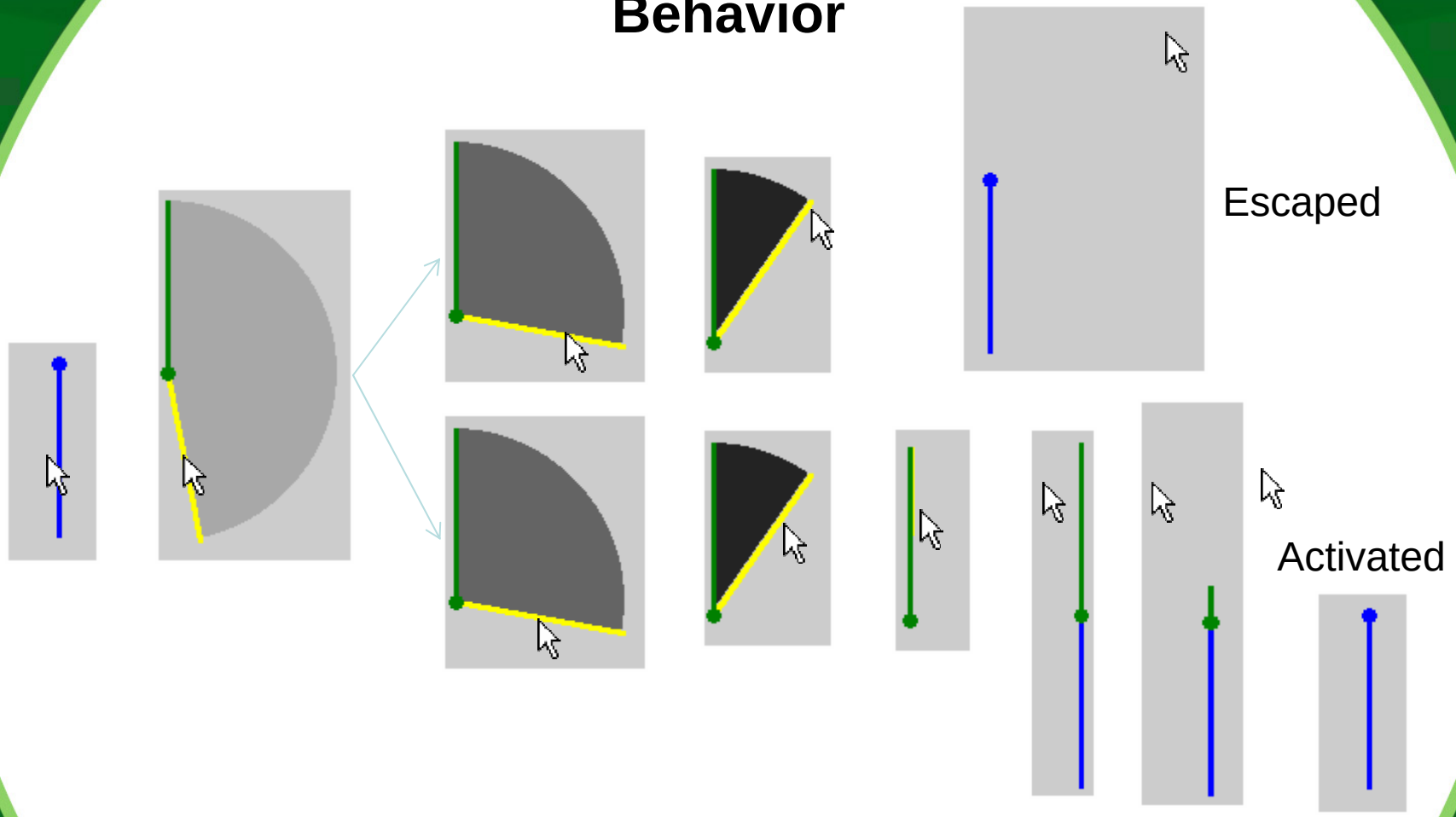
- Picked 2 Best Designs
  - Flip-Switch
  - Hills and Valleys

- Created Flipbooks for each

- PowerPoint

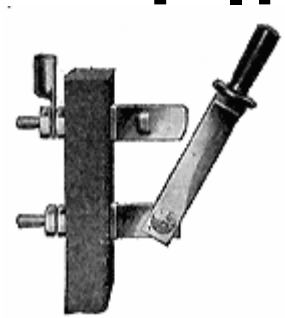
Flip-Switch Design

Behavior

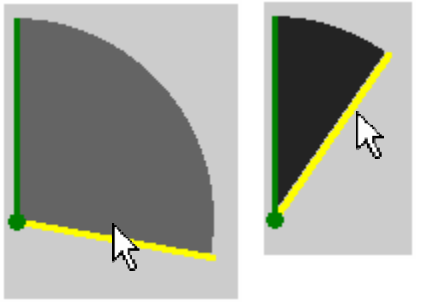


Flip-Switch Design

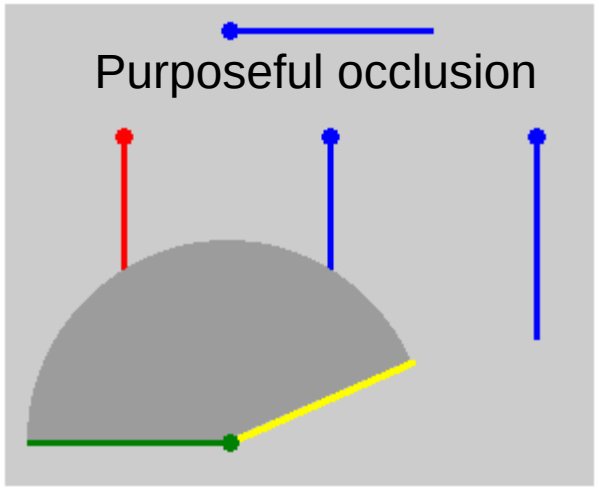
Rational

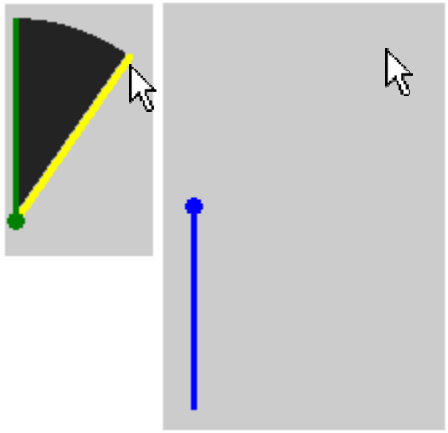


Familiar conceptual model of a switch

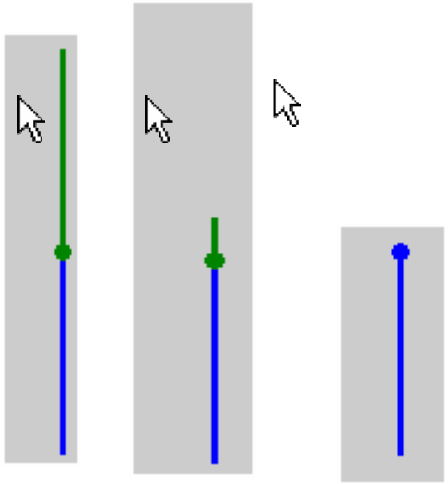


Constant feedback



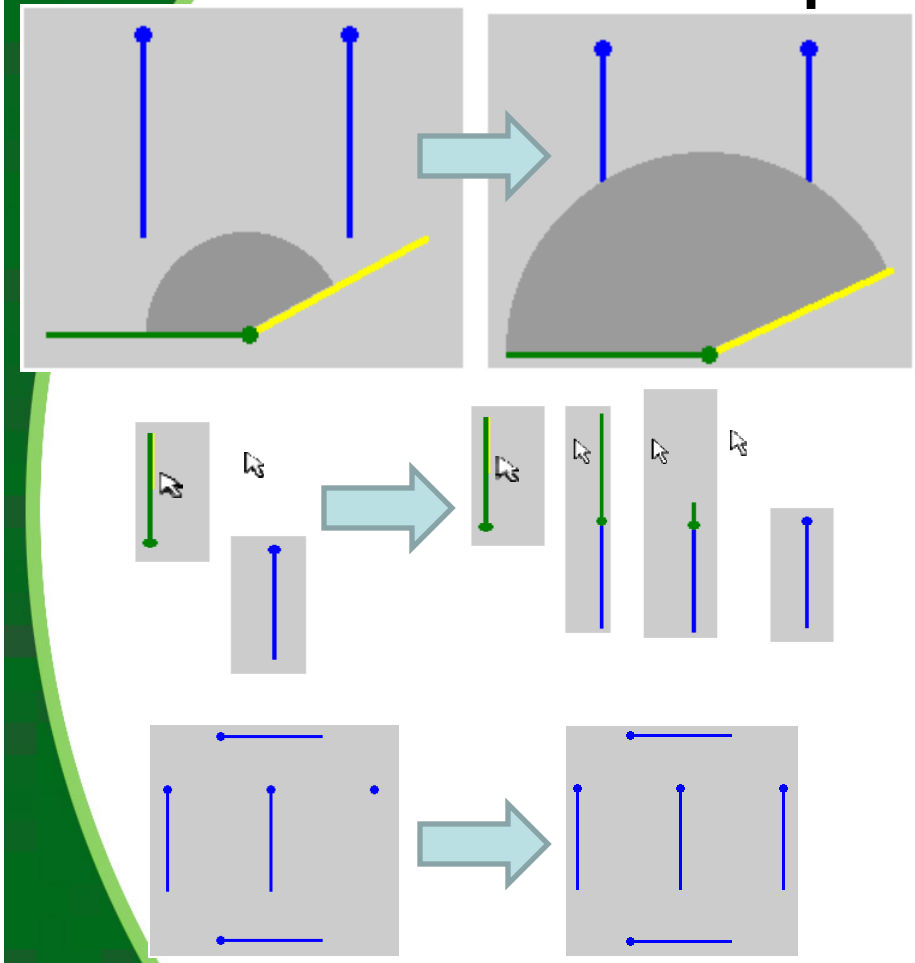


Easily escapable



The Prototype

Multiple Iterations



Implementation

- JavaScript and HTML
- Vector Graphics Library by Walter Zorn
- Online for easy access and versioning
- Logged user interaction
  - Output to CSV for easy analysis

The Prototype

Demo

http://students.washington.edu/adcockm/FlipSwitch/prototype.htm

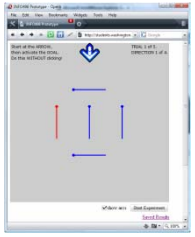
User Testing

Devices

iMac

Microsoft Intellimouse

Microsoft Vista



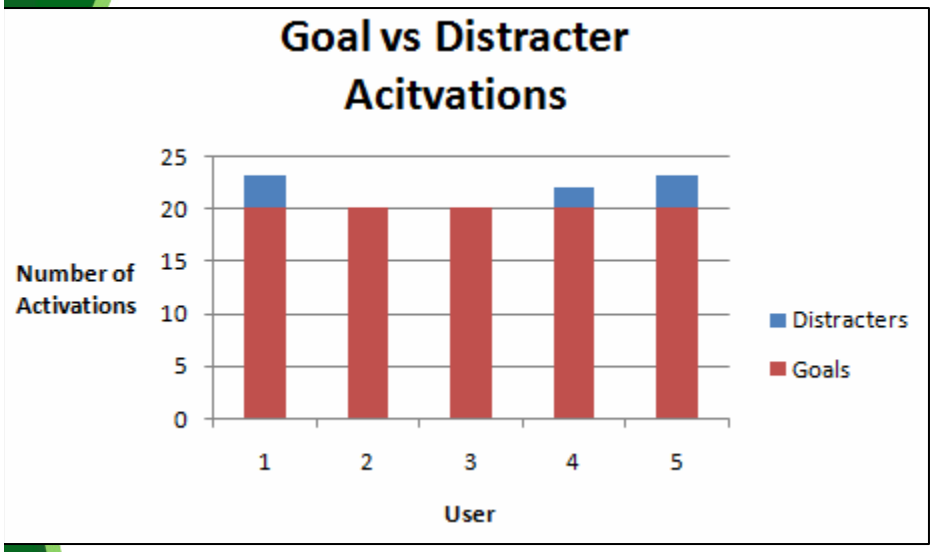
Opera 9.5

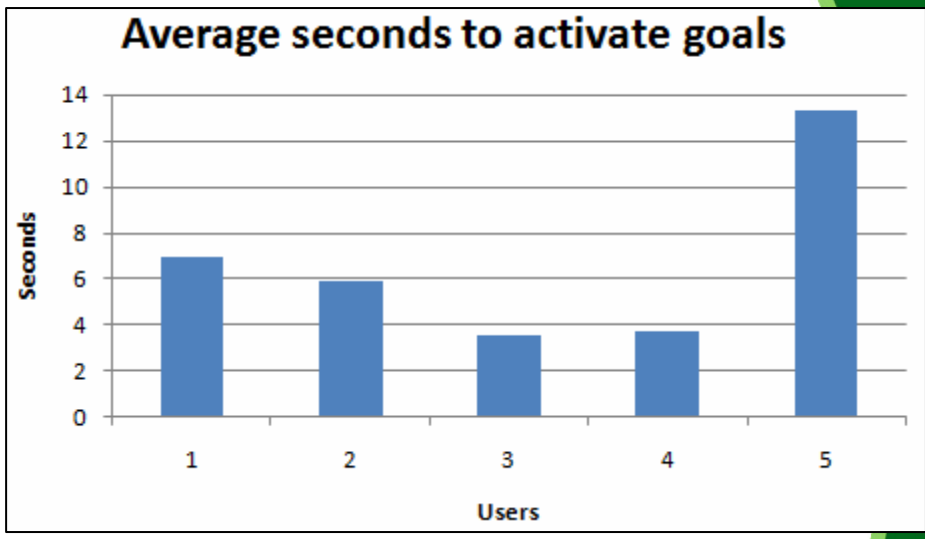
Experiment

- 5 Users
  - Average age 23.8
  - 3 female, 2 males
- 5 Targets
  - 4 Distracters
  - 1 Goal
- Acquire each target 4 times
  - Once from each of the cardinal directions
- 20 total target acquisitions

User Testing

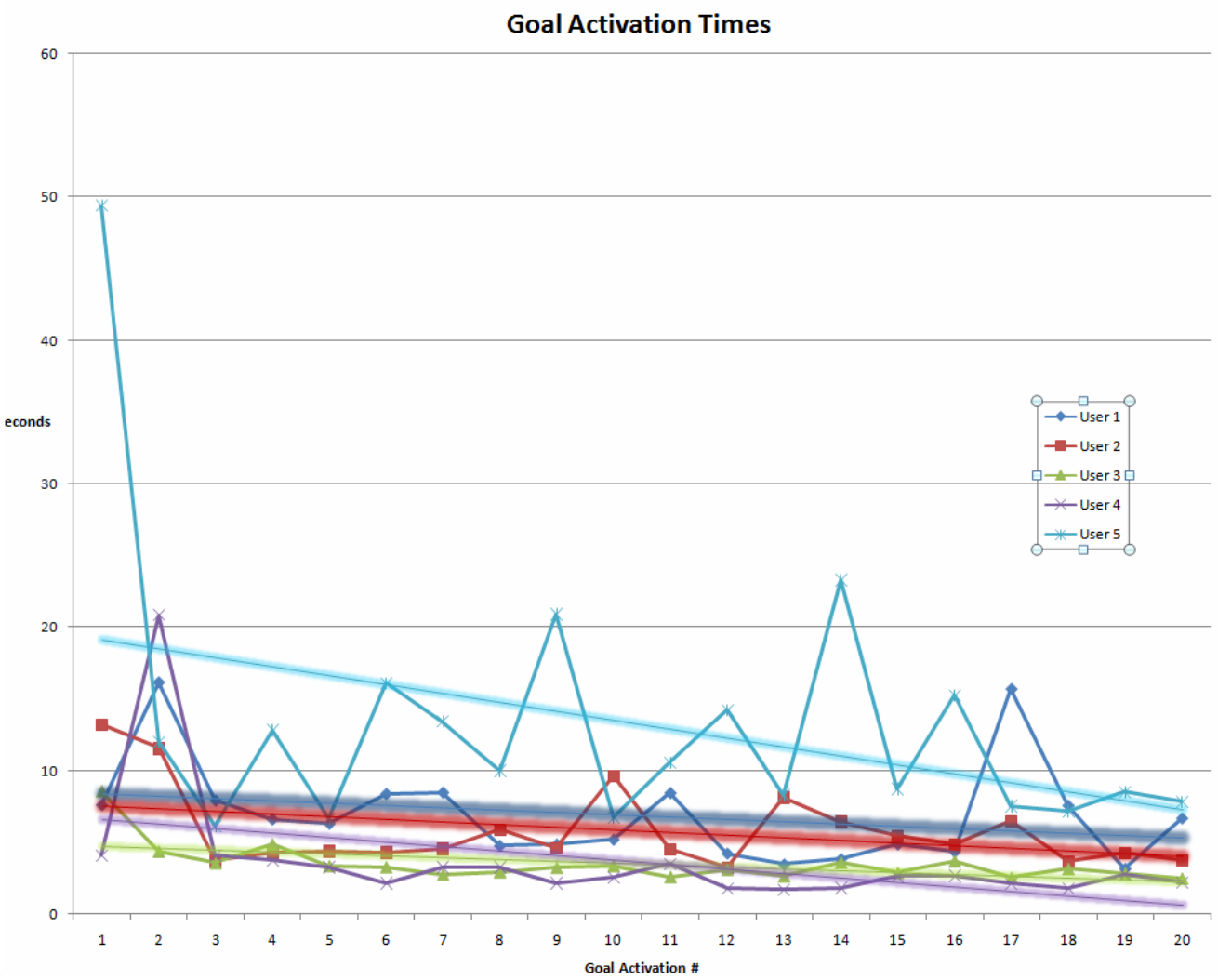
Results





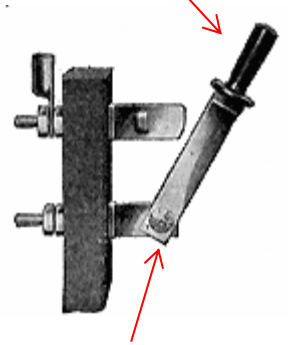
User Testing

Results



Flip-Switch's Future

No handle



No obvious hinge

- Needs further testing
  - More users
  - More granular data for applying Fitt's Law
- Needs to be more intuitive
- What does hovering over the target do?
- What are the significances of the two end points?
  - What is a dot?
- What is activation?

QUESTIONS?