



CYRIS May15-19

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Introduction

The Union Pacific Multimedia wall (or Cyclone Real Time Interactive System – CyRIS) was designed to capture students' attention, be a learning tool for students, and showcase the ECpE department as an interactive experience.

Problem:

The current interface and content displayed on the CyRIS wall is uninteresting, unintuitive, sluggish, and lacks to demonstrate the interactive potential that the hardware can provide.

Solution:

Our goal, as the CyRIS senior design team, was to create new applications that will take advantage of the hardware's potential, as well as be easily discoverable and managed by future teams and project owners. All of our new applications will be integrated into the current system when finished, if feasible.

Intended Use

1. The system will capture the attention of students while providing relevant information.
2. The system will be a learning tool for students.
3. The system will showcase the ECpE department.

Intended Users

1. Coover staff
 - View brief, entertaining content going to/from classrooms and offices
 - Read news about campus events, weather, announcements, etc.
2. Prospective Students and Families
 - View campus maps and information about the university
 - See the technological capabilities of the ECpE department
3. University Students
 - Read news about campus events, weather, announcements, etc.
 - View brief, entertaining content going to/from classrooms
 - View campus maps and bus routes

Application

InCadenace



Functional Requirements

1. Users can interact and play the keyboard, drum pad, and sequencer
2. Users can hear the notes played in real time
3. Users can play multiple instruments at a time

Non-Functional Requirements

1. Capable of playing two instruments at the same time without delay
2. Wall IR sensor constraint (minimize touch delay)

Stellarium



1. Be able to view an interactive constellation based on various locations, cultures and details.
2. Can get back to home screen from within application

1. App should always be in English
2. App updates view on every user prompt - real time

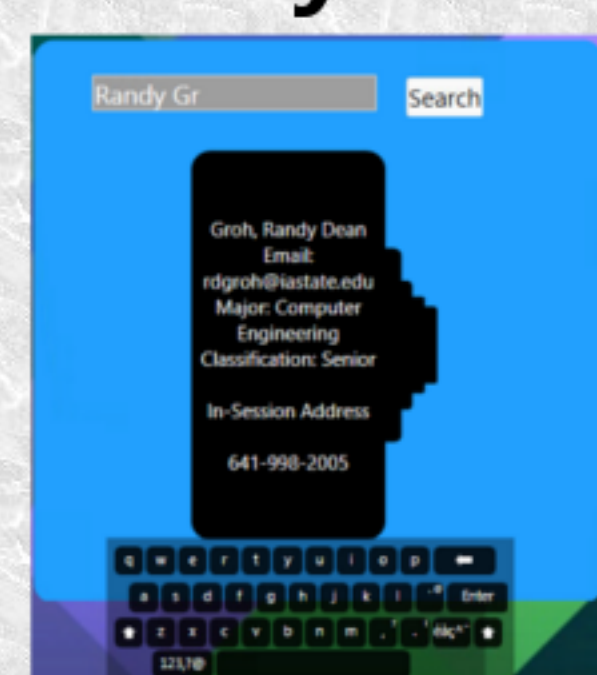
Club & Research Spotlight



1. Stories contain text and image content
2. Stories are scrollable and selectable
3. Stories can be submitted through a web based content management system

1. Stories load within 2 seconds
2. Scrolling is smooth on the interface

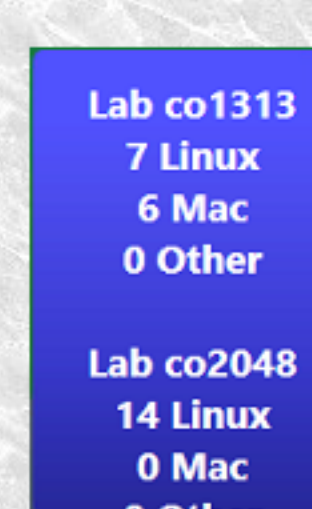
Directory Search



1. Search through text-input solution
2. Display Faculty or student info available on the normal ISU directory search.

1. Input solution does not have accessible hot keys or window keys
2. Browsable results

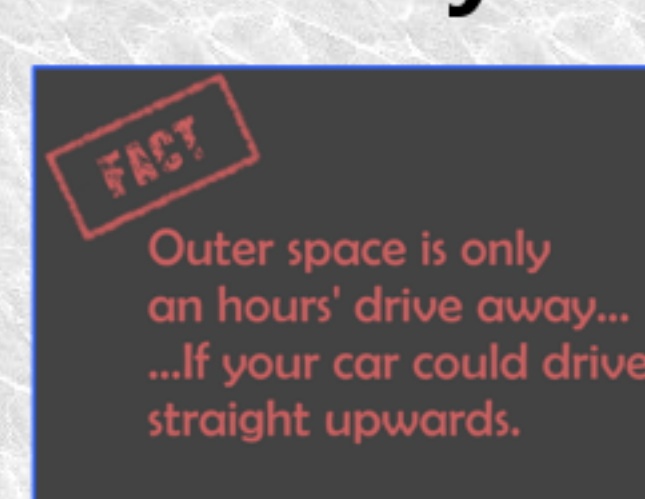
Ticker



1. Display available labs with details (number of open stations, OS)
2. Scrollable list

1. Poll new data every 5 minutes (Upgraded to every 5 seconds)

Brain Byte



1. Easy to read content
2. Fetch and display data from RSS feeds

1. Update content every 6 hours
2. Prevent displaying of RSS feeds that are too long

Testing

We have used a Windows 7 55" touch screen monitor provided by the ECpE department as a development and testing environment throughout our senior design project.

Specific testing strategies we have employed include:

1. User-level Tests (FAN club events) via the main media wall
 - Usability
 - Performance
 - Accessibility
 - Enticement
2. Security / Operational Testing
 - Windows shortcuts exposure
 - Windows bar exposure
 - Static Wall Prevention
3. Performance Tests
 - 5 second launches for all applications
 - Frequent updates within every 5 minutes of data reliant applications
 - 2 second exits for all applications

Technical Details

Programming Languages:

- Java
- Visual Basic
- C++
- Javascript

Libraries, APIs, and Frameworks:

- MT4J
- JFugue
- Qt
- Salt Minion

Development Environments:

- Eclipse
- Visual Studio
- Unity
- MySQL Workbench

Hardware:

- 12 55" monitors
- 72 point touch IR beams
- Dolby 5.1 digital surround sound

