IPRO 333

Interactive Website Module Design and Development for the Museum of Science and Industry

Statement of the Problem

- The Museum of Science and Industry would like to increase user interactivity on its website.

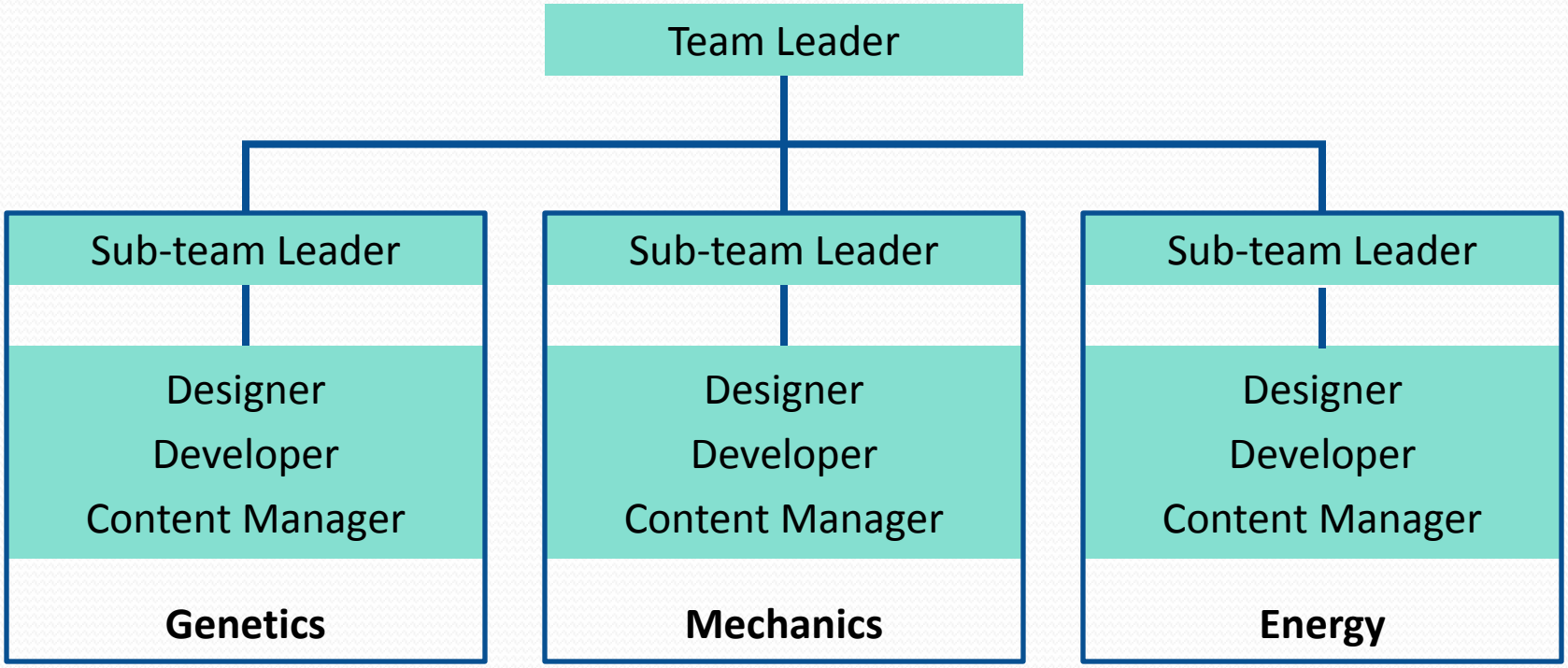
Project Objectives

- Develop interactive and educational modules for an 8th grade audience.
- Each module must reflects specific scientific topics based on research and analysis.
- Modules must aid teachers, parents, and students with 8th grade curriculum topics.

Resources

- Time Management
  - Weekly Presentations and Group Meetings
  - Tasks Distributed Based on Expertise
- Very Small Economic Cost
  - Museum Trip
  - User Testing

Organization of the Team

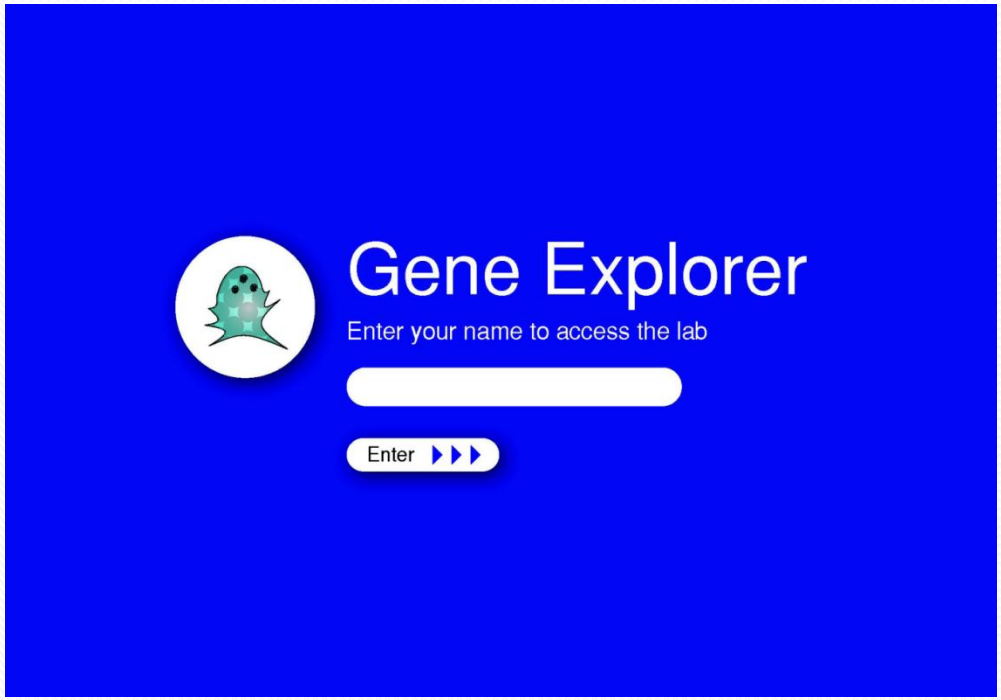


Ethical Considerations

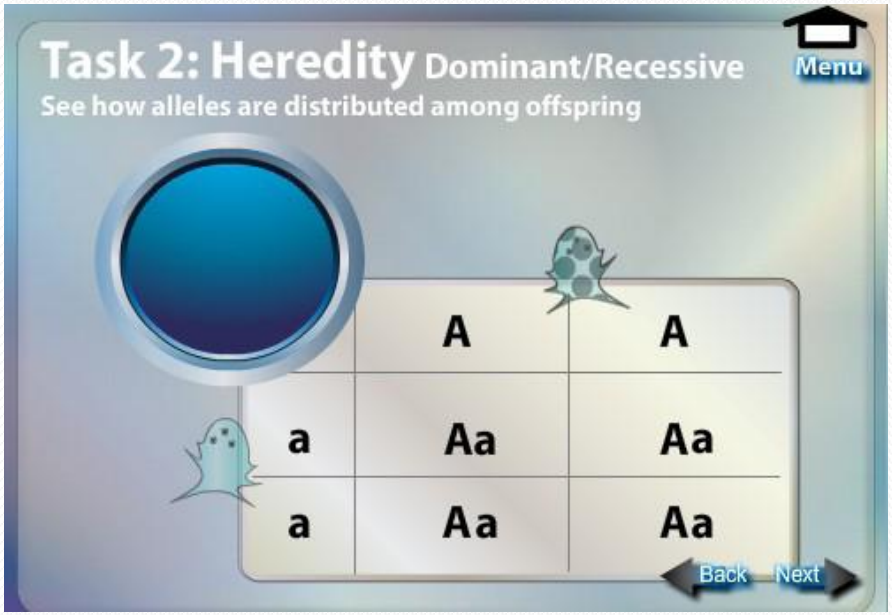
- Testing on Human Subjects
- Addressing Many Anonymous Website Users
- Honoring Contract with the Museum of Science and Industry
- Using Public Domain Materials

Genetics

Users will help a scientist's genetics research by participating in a series of interactive mini games and tasks on topics of heredity and human traits to become gene experts.



Last Semester



Goals

- Reduce Text
- Change Background
- Simple Design
- Add Sound
- Remove “Lightning Storm” Storyline
- Add Second Task

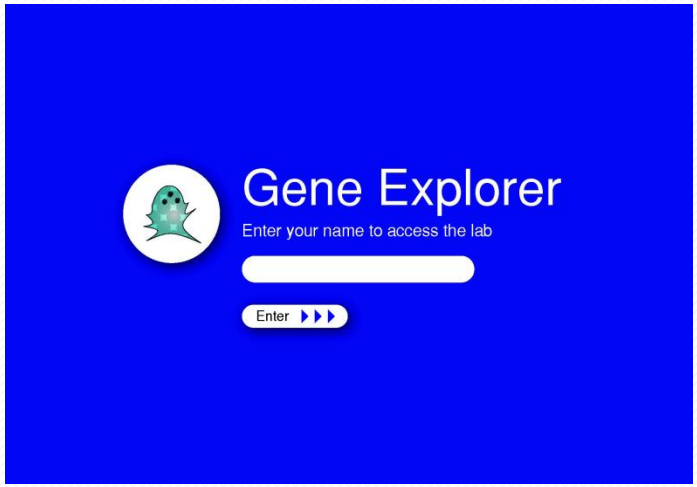
Obstacles

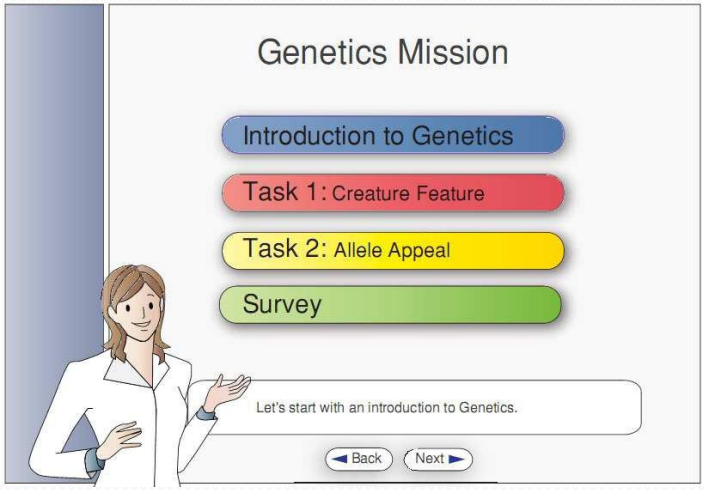
- New to Flash
- Sex-Linked Traits
- Hereditary Traits – Eye Color
- Code Crashes
- Survey
- Lack of Ethnic Diversity

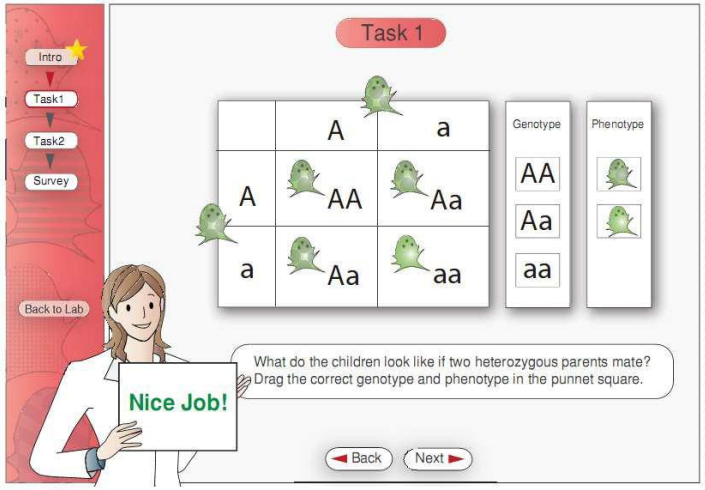
User Testing Findings

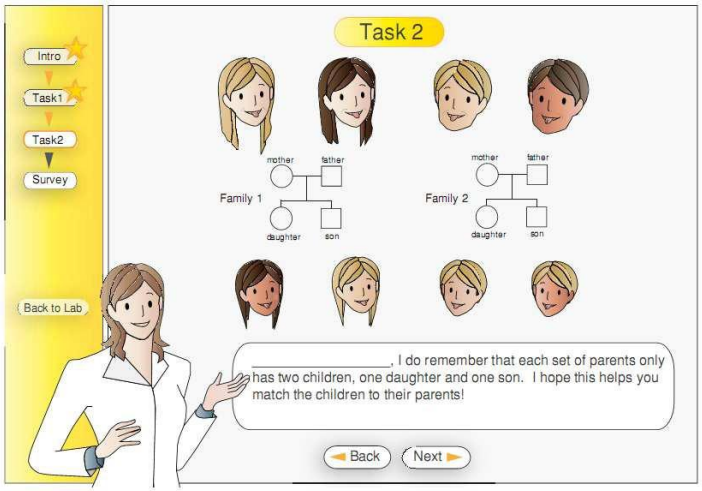
- More Color
- Animated Characters
- “I like how you can drag and drop for the Punnett squares”

Final Module



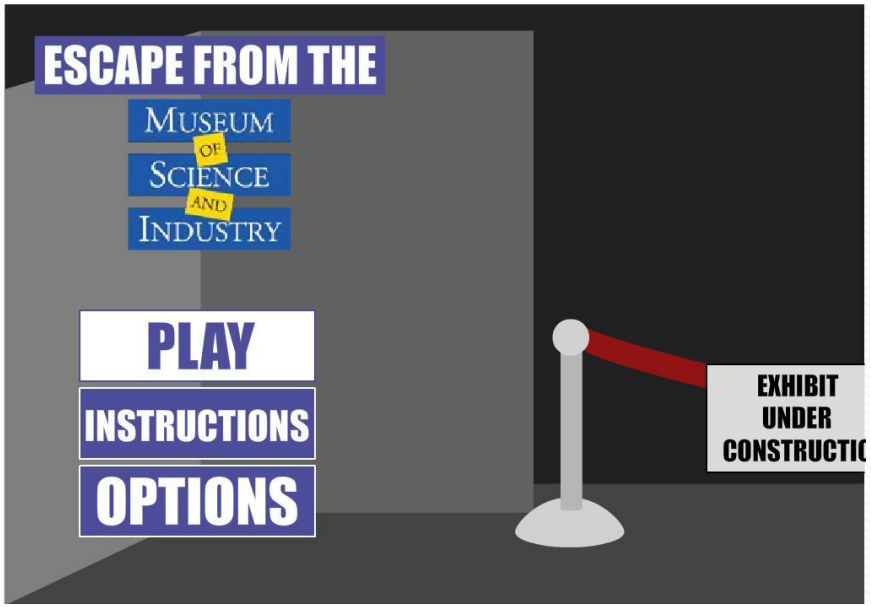






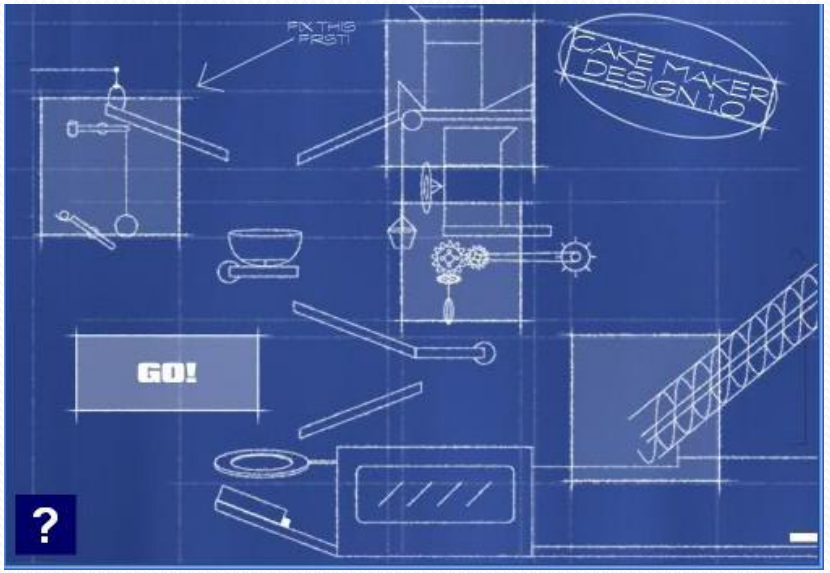
Mechanics Module

- Users will play with simple machines to learn basic principles of physics to escape a virtual exhibit at the Museum of Science and Industry.
- Educate Users About the Physics behind Simple Machines
  - Pulleys
  - Levers
  - Inclined Planes
- Educational
- Interactive
- Enjoyable



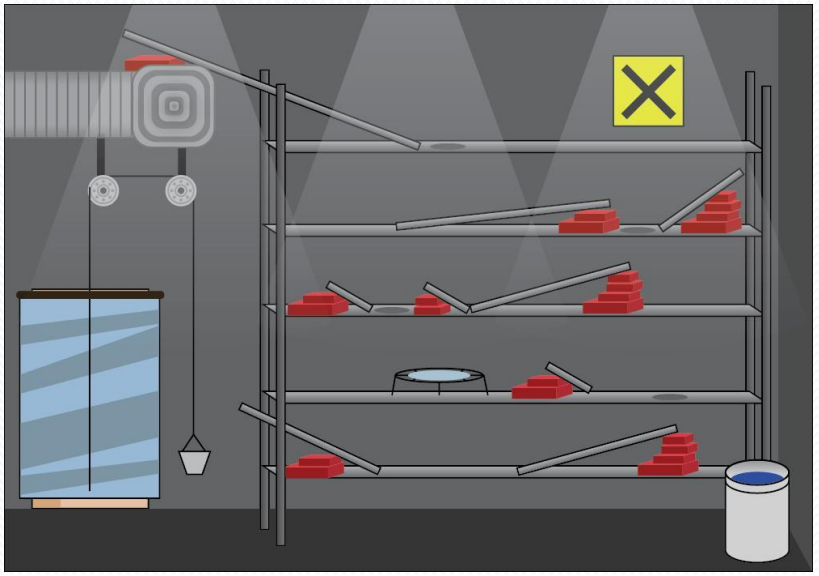
Last Semester

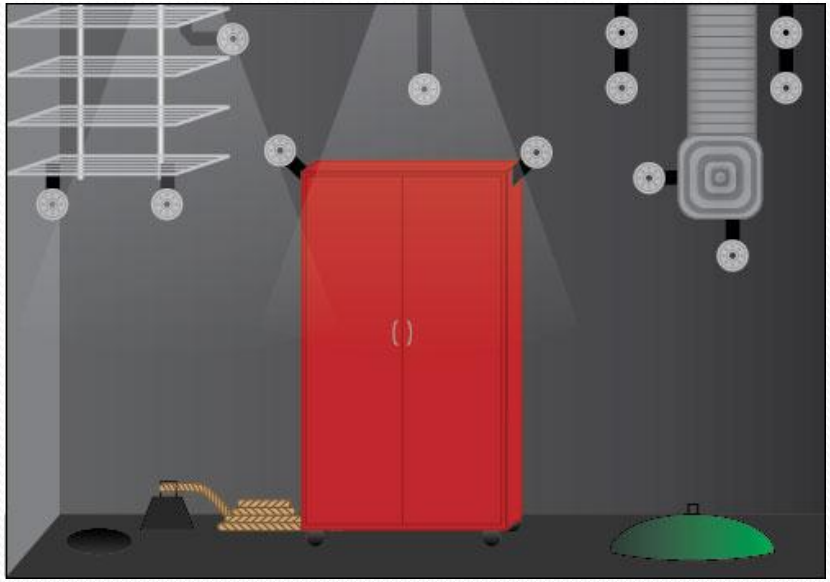
- Lack of Interactivity
- Static Frames
- Unrealistic Storyline



This Semester

- Ability to Interact with Many Different Objects
  - "Sandbox" Environment
  - Advanced Physics Engine
- Multiple Mechanics Concepts
- Concise and Exciting Storyline
- Enhanced Graphics and Music





Goals

- Maximize User Interactivity
  - Moving, Utilizing and Watching Objects Perform
  - Allow User to Learn About the Physics Experience
- Redevelop Storyline
  - Balance Between Imaginative and Realistic
  - Concise – User Can Start Playing Immediately
  - Keeping the Fun and Allowing Users to Get into the Game

Obstacles

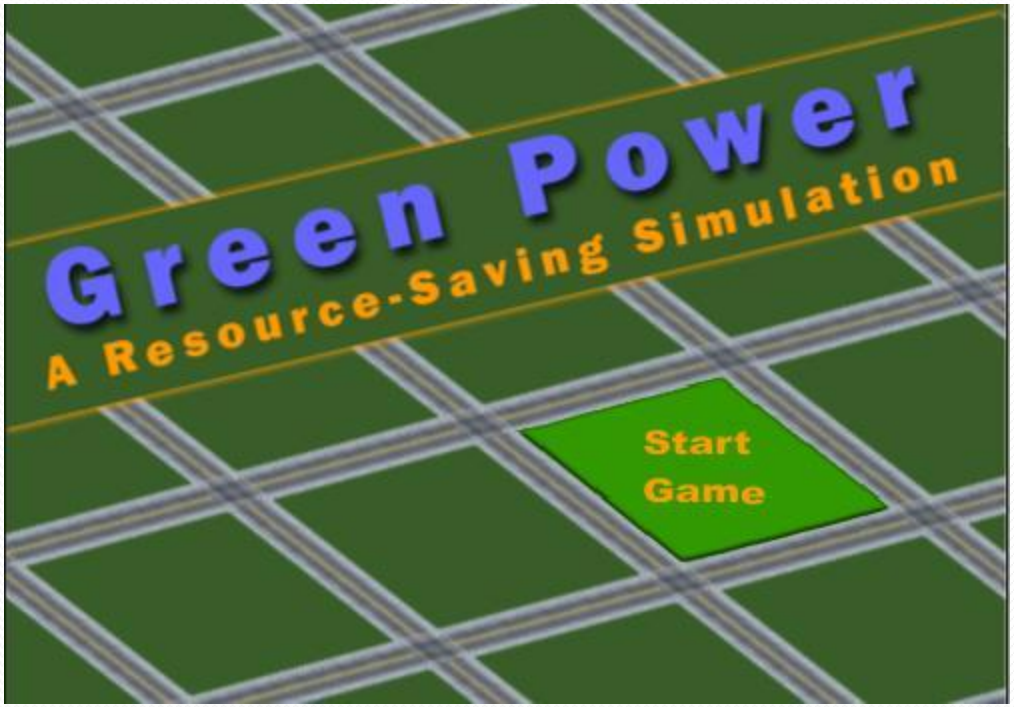
- Development of Flash Code and Implementation of Physics Engine
  - Designing Logic Around Puzzle Ideas
  - Coding for Each Object
- Explaining Physics Concepts to Young Users
- Creating Game within Context of Storyline

User Testing Findings

- Instructions / Help
  - Utilize All Possible Functions
  - View the Concepts
- Animation and Graphics
- Sandbox Environment

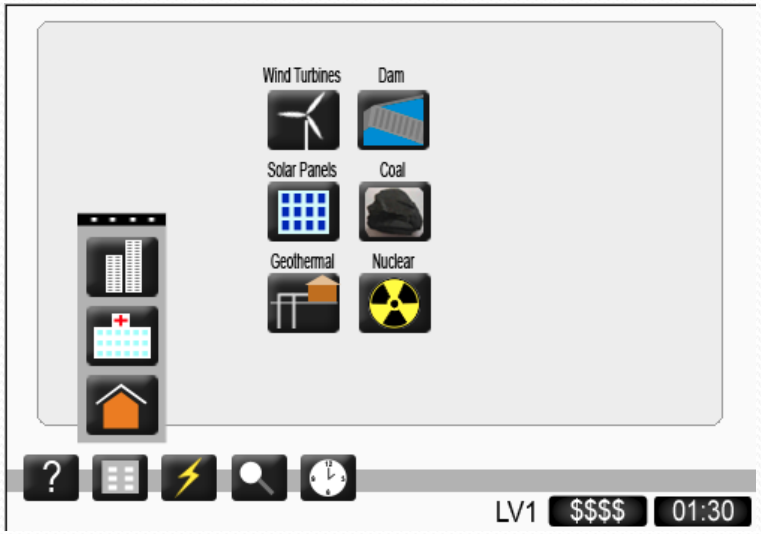
Energy

- Users will practice using different energy harvesting methods while learning about cost analysis and how the preferred sustainability energy technology varies depending on location.
- Show Sustainable Energy in Action
  - Long Term Economic Impact
  - Environmental Impact
- Educational
- Enjoyable
- Lasting Appeal



Last Semester

- Development of Idea
- No Functionality
- No Information



This Semester

- Multiple Cities
  - Best Energy Source Changes
  - City Power Affects Results
- Multiple Levels
- Educational
- Updated Graphically
- Language Compatibility

Goals

- Create a Fully Functional Game
- Use Real World Data
- Show Contrast Between Traditional and Alternative Energy Sources
- Improve the Visual Style

Obstacles

- Finding Accurate Data
- Programming Complex Game Code
- Balancing the Energy Sources and Cities
- Assigning Teamwork Evenly

User Testing Findings

- Help!
- More Complex Economics
- Improve the Visual Design

Thank you.

Questions?