

FLORIDA INTERNATIONAL UNIVERSITY

Senior Project Final Presentation

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Capstone Project Selection Process

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Problem Definition

Whole Project:

- Unreliable spreadsheet selection process
- Hard to Differentiate Capstone I & II
- Lack of Security & Privacy

My Part:

- Issues of intuitively selecting a project
- Excel format converted into UI for selection
- Unclear instructions for specific courses

User Stories

- As a student, I want to be able to submit my project preferences through a form or website, so that I do not have to directly access the spreadsheet.
- As the professor, I want a coefficient to decide which projects students are placed into, so that no single project is overloaded.
- As a student, I want clear instructions, so that I know the steps necessary to select my project.
- As a student, I want a webpage specific to the course I'm enrolled in, so that I can differentiate from instructions for other Capstone courses.
- As the professor, I want students who drop their Capstone class to be removed from the project selection process, so that only currently enrolled students hold spots in every project.
- As a student, I want a website that is easily navigable, so that I have a clear understanding of how to select my project.
- As a student, I want a website that is aesthetically pleasing, so that I am not distracted or hindered by the website's design when selecting a project.
- As the professor, I want a project webpage template, so that the creation of the project list is automated.

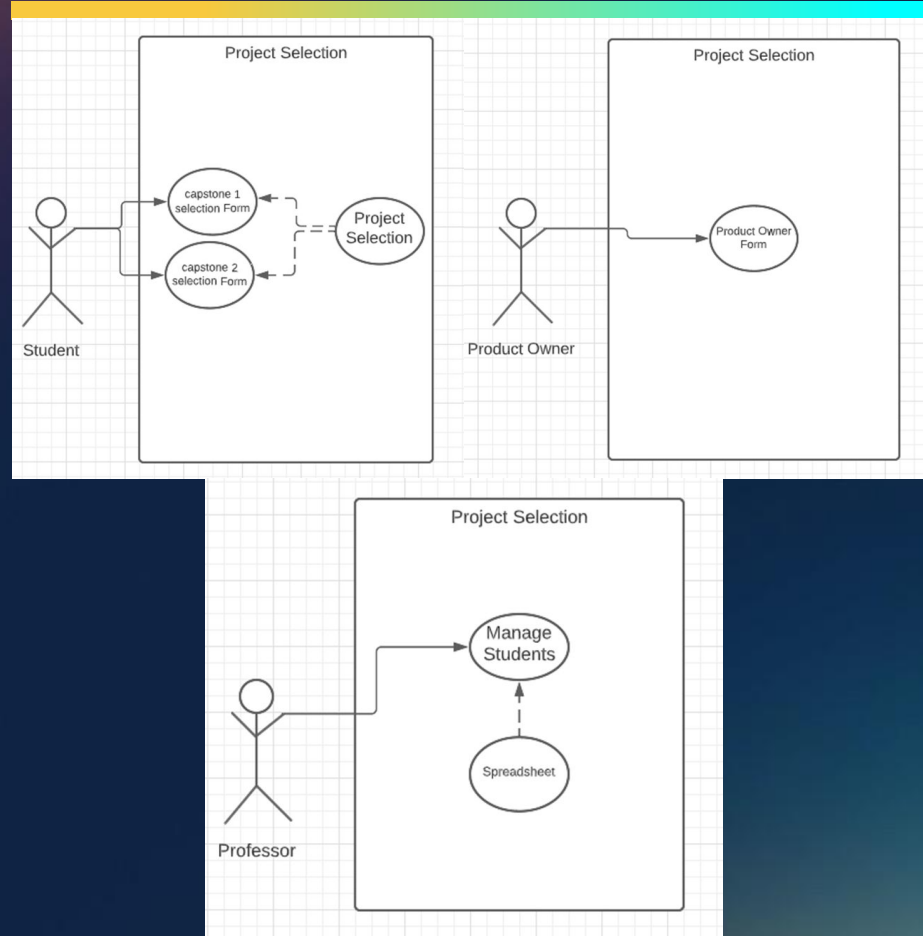
Use Cases

Implemented:

- Capstone I Access Page
- Capstone II Access Page

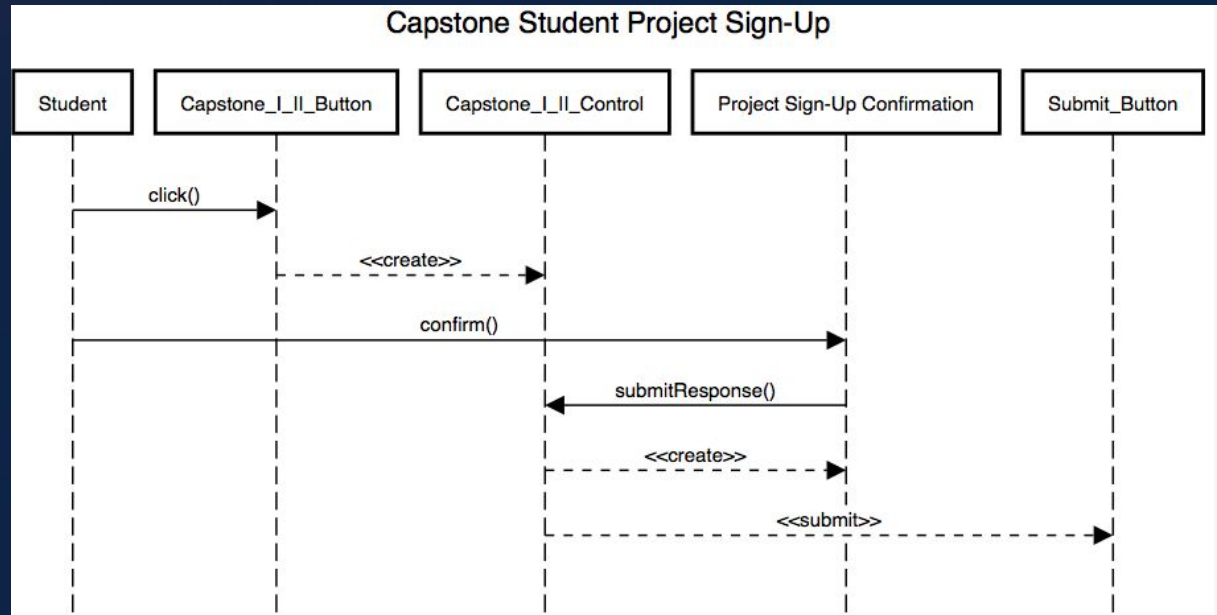
Use Case Essentials:

- Button to select Form
- Instructions displayed
- Form to fill out



Sequence Diagram

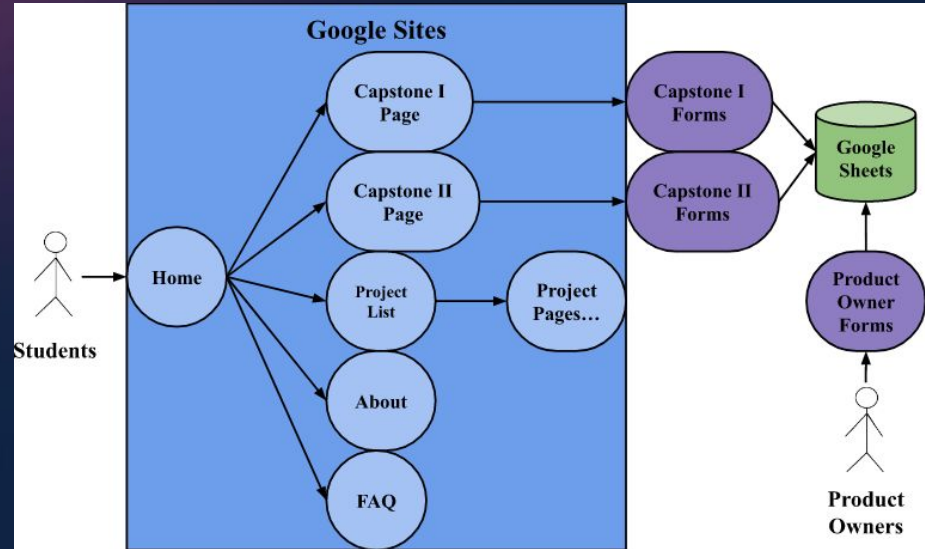
- Displays how the system communicates as the student is filling out the sign-up form and then submitting it.



System Design

Some validation and security notes...

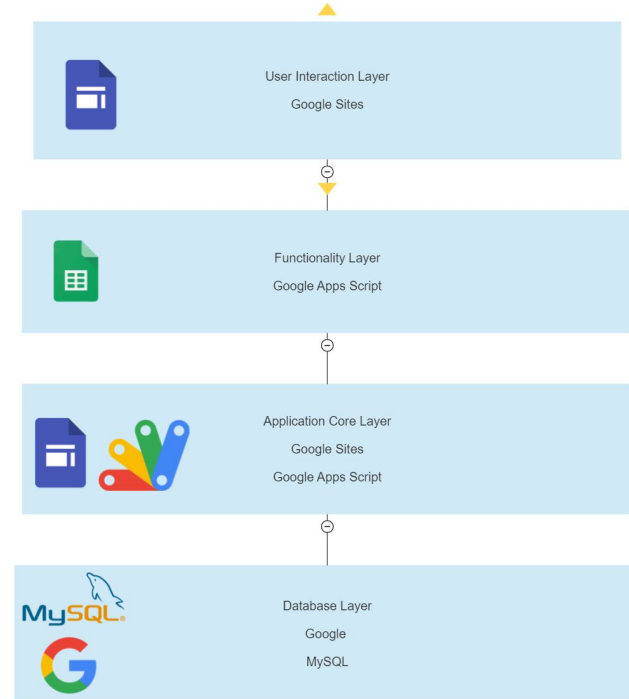
- Avoids direct access of personal student data
- Validates responses through the forms' structure
- In the future, will maintain data integrity and authenticity through the use of a login system



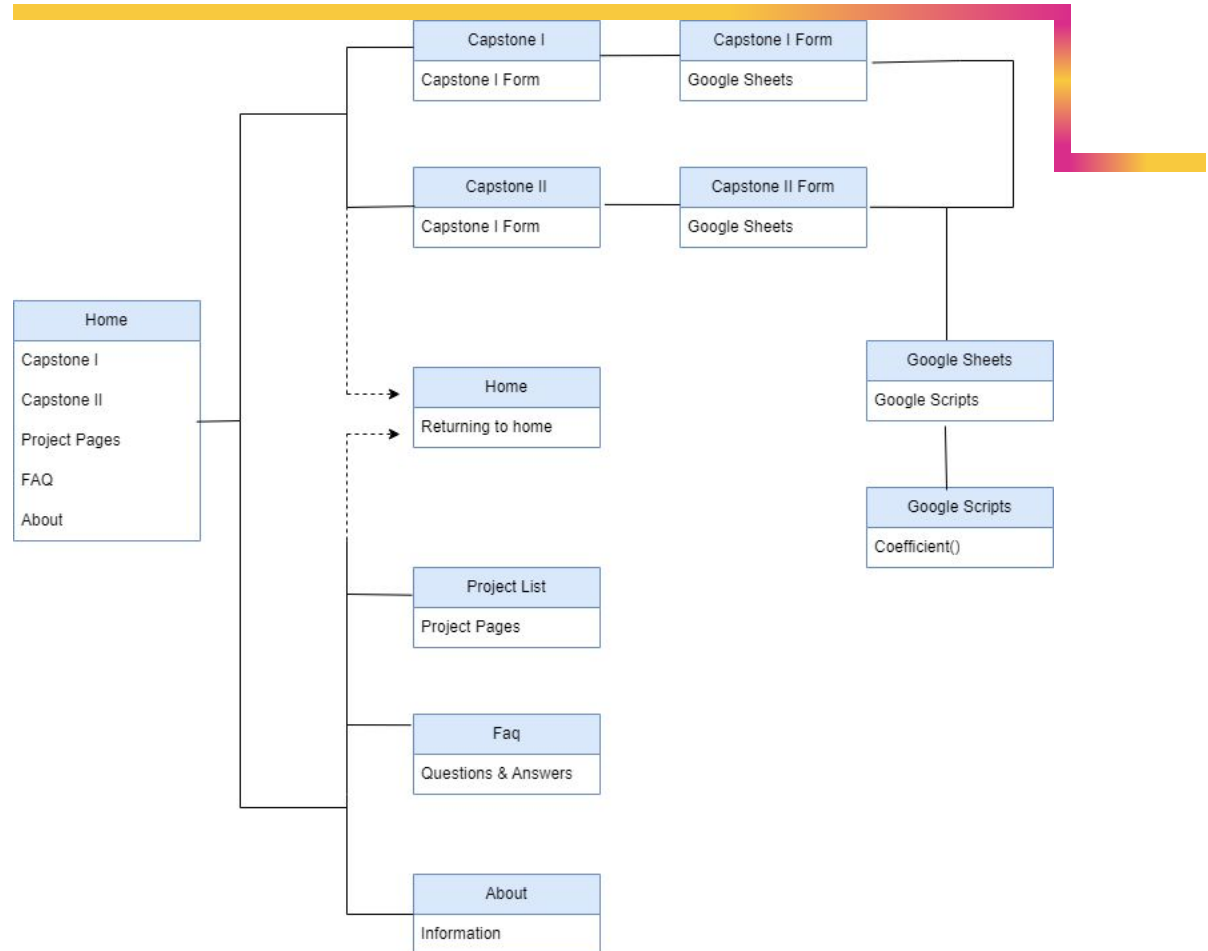
Architecture

- Student link in course
- UI established for student intuitive interaction for selecting a project
- Forms page is submitted to then have the data stored in a google spreadsheet

Layered Architecture Diagram



Deployment



Main algorithm

- While there are students who haven't been assigned a project
- Select a student
- For each of their projects
 - Identify how full that project is
 - Pull the importance of getting this project from student's response
 - Convert project fullness and preference into percents
 - Calculate the coefficient for that project (fullness+preference)
- Assign the project with the highest coefficient to the student

Test Suites & Test Cases

- **01-Project Pages Test Suite**
 - Test cases in this group aim to check that each Project Page is displaying the appropriate project information. For instance, that the entire project description is captured, title, product owner name and email ...
 - **01A-Project Information Test Suite**
 - Goal for this collection of test cases is to assure that the project information filled out by the Product Owner (i.e., title, project description) is accurately retained and populated in the Project List/Pages web page.
- **02-Student Selection Test Suite**
 - Given that students are asked to select three projects of preference, test cases will validate that a student has been placed in at least one of their three choices
 - **02A-Student Information Test Suite**
 - Goal for this collection of test cases is to assure that the information filled out by the Student (i.e., name, student ID, project preferences) is accurately retained.
- **03-General Actions Test Suite**
 - This collection of test cases will inspect general actions of the website such as clicking/selecting About leads to the About page, FAQ leads to FAQ page, etc..



Test Case ID: 01-1

Test case Description: View project details of “Project A”

Test steps: Navigate to Project List, select “Project A” page

Pre-requisites: Product Owner has filled out Google Form and Test Suite 01A

Expected Result: information on this page matches the description given by Product Owner of “Project A”

Actual Results:

Pass/fail:

Test Case ID: 02-1

Test case Description: Placement of student within one of their three choices

Test steps: Check email that contains final project placement

Pre-requisites: Student has filled out Google Form with their three preferences and Test Suite 02A

Expected Result: project selection algorithm has achieved placing the student in one of their three preferences

Actual Results:

Pass/fail:



Summary

Our project aims to resolve the problems that the existing project selection process has. These issues range from being insecure to not being user friendly. We've resolved these by adding a formal front end to the system to prevent unauthorized viewing of student data, and provided students with a more streamlined process to selecting their project.

On top of these fundamental fixes, we also have (or plan to) optimized the system through automation and selection algorithms. The hope is once this project is complete, future capstone students will be able to select their projects stress-free.

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Thank You!