Lab Conversion Template (LCT) Project Proposal

Group Members and Skills

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    - Programming experience: Java, Python, SQL, C, JavaScript
- Sebastian Wilson
    - 1st Year Computer Science Major
    - Programming experience: Java
    - Task assignment:
- Salina Nihalani
    - 2nd Year Computer Science Major
    - Programming experience: Java, Python, JavaScript, React, Scala

Overview

This ITS system is an online tool that will help students succeed in their ECE course. It has an embedded version of the textbook alongside many other helpful features, such as graphs, examples, and pictures to help students learn the required material.

Converting the ECE 2026 lab GUIs from MATLAB to an online, JavaScript-based format is a project that has been undertaken by many different groups of VIP students, to varying degrees of success. There have been many repeated errors and redundant discoveries that have been made by each of these groups while attempting to convert one of these labs, leading to a lot of wasted time and unnecessary headache. We have previously created a standard process for converting these GUIs, as well as a functional code template that will streamline this GUI conversion process, cutting down on the time it takes to convert these GUIs as well as ensuring that they meet a standard of functionality and consistency, which is especially important as these labs are eventually going to be connected to the backend database. For v2 of this project, we want to use a similar process to digitize the worksheet portion of the lab in the same manner and integrate it within the LCT system in order to provide a more cohesive experience for the students and TAs.

Project Goals

- Digitize at least one Lab worksheet
- Design a standard process and template to quickly and efficiently digitize any given lab worksheet
- Collaborate with other teams to standardize saving and loading GUI and worksheet states
- Implement a configuration mechanism for Labs/worksheets to be manipulated without coding

Project Timeline

Week	Task
Week 4	Project Proposal Draft
Week 5	Final Project Proposal
Week 6	Become familiar with React, JS, and JSXGraph
Week 7	Create a mockup of the digitized worksheet and integrate into the IRS block diagram
Week 8	Begin implementing first worksheet
Week 9	Question/Answer functionality for one worksheet
Week 10	Check GUI state from worksheet
Week 11	Begin generalizing worksheet into a template
Week 12-13	Continue creating template
Week 14	Create config mechanism for template
Week 15	Testing/Documentation
Week 16	Final Presentation