Project Proposal
Filter Design GUI and Integration

Group Members and Skills

- Benjamin Lloyd
    - 4th year Computer Science major
    - Experience: Java, C, JavaScript, Python, C++
- Clayton Lawrence
    - 4th year CS Major
    - Experience: Java, C, JavaScript (basic), Python

Project Topic and Content

Problem to solve/goal

Georgia Tech's Intelligent tutoring system provides ECE 2026 students an avenue to learn concepts through answering questions and interacting with GUIs in labs. This team will develop a GUI to aid students in the concepts related to filter design. The GUI will be developed as a web application. After development of the GUI, the team will integrate it in different part of the ITS system, so students can use the application for learning purposes. The team will finally learn how to collect useful data from students who are using the graph, so the data can be analyzed and used to provide students with feedback in order to learn the concepts better. A positive side effect of this initiative is that in designing the tables for this GUI, we can try to standardize the way we collect data for all of the labs.

Potential Pitfalls:
- Understanding matlab code to graph different functions
- Ramping up on JavaScript and other ECE material
- Understanding what data is useful for feedback

Working plan: 1 Semester

Time Schedule	Task
Week 4	Project Proposal and window graphs, ramp up on ECE info
Week 5 - 7	Finish window graphs and implement better default state. Provide better dropdowns and visual look
Week 8 - 9	Begin Parks-McClellan graphs and begin to discuss how to collect data from the window graphs already finished and what information is useful

Project Proposal
Filter Design GUI and Integration

Week 10 - 11	Design generic database for labs
Week 12	Connect database to JavaScript GUIs
Week 13 - 15	Start to analyze data and provide feedback to users
Week 16	Wrap up work
Week 17	Final presentation

Implementation tools and resources:

- **Class website: http://its.vip.gatech.edu/VIP/**
- **Class github: https://github.gatech.edu/VIP-ITS**
- **ITS docs: http://its.vip.gatech.edu/docs/**
- **JSXGraph Demos: http://its.vip.gatech.edu/VIP/demos/**
- **Team slack:** https://filterdesign.slack.com
- **Piazza**