Jordan Gross
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Catherine Zhuang

VIP-ITS Team 1 Proposal

Group Members:

Each group member has unique skills and experiences that will allow this team to thrive throughout the semester. Jordan is familiar with JavaScript and JSXGraph, knows the material taught in 2026 and worked on the CLTI GUI over the summer. Catherine is familiar with basic programming languages such as Python, Java and C and currently taking Intro to Database class at Tech. Joo is familiar with optimizing the system and organizing and coming up with ideas. Akshay is familiar with Java, Matlab and Assembly. He also is familiar with ECE 2026 concepts and building GUIs. Lucas knows Java, Python, C, Assembly, HTML/CSS and JavaScript.

With all of these skillsets, the group split up the overall project goal into subgoals for each person. Jordan will create Ideal-Low Level Pass, Ideal-High Level Pass and Ideal Bandpass tabs and understand 2026 material and translate it to other group members. Catherine will work on First-order Lowpass, First-order Highpass and Ideal Bandreject tabs. Joo will work on the database aspect of the project after discussing details with Greg. Akshay will convert the second-order bandpass and second-order bandreject parts of the Matlab GUI to JavaScript and work on refining questioning structure to improve student experience with/helpfulness of ITS assignments. Lucas will work on the database subteam with Joo, and we will meet necessary requirements for creating a database to support this GUI, and then implement the database.

Project Goals:

Once each part of the project is completed and working, the group will move onto the next portion of the project. Lucas and Joo will be focusing on the database, while Jordan, Akshay, and Catherine will be working on the JavaScript portion of the project. Below is the outline of when each aspect of the project will be completed and by whom.

Timeline:

Week	Task
6	Jordan: Explain current code and have one div talk to another Catherine: Research on Matlab GUIs and JavaScript GUIs Akshay: Work on 2nd-order bandpass Joo: Research technical requirements for a database Lucas: Research technical requirements for a database
7	Jordan: Work on ideal lowpass Catherine: Work on 1st-order lowpass Akshay: Work on 2nd-order bandpass Joo: Research the linkage and application that could be used with MySQL and R Lucas: Research the linkage and application that could be used with MySQL and R
8	**FALL BREAK**
9	Jordan: Work on ideal lowpass Catherine: Work on 1st-order lowpass Akshay: Work on 2nd-order bandpass Joo: Research the linkage and application that could be used with MySQL and R Lucas:Research the linkage and application that could be used with MySQL and R
10	Jordan: Work on ideal high pass Catherine: Work on 1st-order highpass Akshay: Work on 2nd-order bandpass Joo: Research on how to apply process the 4,000 collected data into useful resources Lucas: Research on how to apply process the 4,000 collected data into useful resources
11	Jordan: Work on ideal high pass Catherine: Work on 1st-order highpass Akshay: Work on 2nd-order bandreject Joo: Work on data analysis using the statistics tool Lucas: Work on data analysis using the statistics tool
12	Jordan: Work on ideal bandpass Catherine: Work on ideal bandreject Akshay: Work on 2nd-order bandreject Joo: Work on data analysis using the statistics tool Lucas: Work on data analysis using the statistics tool
13	Jordan: Work on ideal bandpass Catherine: Work on ideal bandreject Akshay: Work on 2nd-order bandreject

	Joo: Work on data processing part Lucas:Work on data analysis using the statistics tool
14	**THANKSGIVING**
15	Jordan: Work on CSS/make it look pretty Catherine: Work on CSS/make it look pretty Akshay: Work on CSS/make it look pretty Joo: Work on data processed during the semester Lucas: Work on data processed during the semester
16	Jordan: Work on CSS/make it look pretty Catherine: Work on CSS/make it look pretty Akshay: Work on CSS/make it look pretty Joo: Work on data processed during the semester Lucas: Work on data processed during the semester

Project Description:

In terms of database/statistics, there should be some research required what method we should use to process 4,000 collected data. These models will have different features and finding the connection between data and application will be the major part in data/stat perspective. Using the statistical language, Lucas and Joo will work on data processing part after the research. Partly, machine/deep learning could be used to collect the data based on users' preferences.

One of the purposes of the ITS is helping students to learn and succeed, so the team needs to focus on how to minimize the inconvenience students might have while using the program.

Our primary goal this semester is to complete the transition from Matlab GUIs for signal processing concepts to Javascript-based interfaces. We will continue the work that Jordan began over the summer, and ensure that the tools maintain the same functionality. Converting the GUIs should be a fairly seamless project, but making sure members are up to speed on JavaScript and able to complete the project quickly will be the first hurdle. The second part of the project will be integrating the database with the JS interfaces. Connecting these pieces is straightforward, but the team must be careful to avoid bugs that occur in the process.

Because we want to convert these GUIs into web-based versions, HTML/CSS and JS will will be the primary tools needed. However, it's difficult to replicate these GUIs with just these tools and as such will be using the JavaScript library JSXGraph. Additionally, databases will require the use of PHP and MySQL. We have already begun collaborating using GroupMe, a online and mobile messaging app. This will be used to plan any additional meetings and will function as a general chat of sorts. For file management, we will be employing GitHub. This will make it easier (once all members are familiar with GitHub) to manage our code.