

Lucas Phillips  
John Matanin  
Gregory Williams  
Jason Chan

## VIP-ITS DLTi Team Proposal

### **Group Members:**

Lucas:

- Fourth Year CS Student
- Java, Python, C, HTML/CSS, JavaScript, PHP

John:

- Second Year Electrical Engineering Student
- Java, HTML, CSS, Matlab
- Prior knowledge of DLTi filtering/demo functionality from prior coursework

Greg:

- Fifth Year CS Student
- JavaScript, HTML, CSS, Java, SQL

Jason:

- Second Year CS Student
- HTML, CSS, Javascript, PHP, SQL

### **Project Goals:**

- Convert the DLTi Matlab GUI into a web-based GUI using good design principles
- Create a web page that can retrieve student responses from a database and populate a GUI for grading
- Develop a user-friendly layout and make the design intuitive to users

### **Timeline:**

<b>Week</b>	<b>Task</b>
<b>6</b>	Lucas: Improve knowledge of JSXGraph and consult previous CLTI members. John: Refresh knowledge of Java, HTML, CSS Greg: improve knowledge of DLTi functionality from previous coursework and look for areas of UI improvement Jason: Change JS AJAX to JQuery AJAX / Separate ajax code from GUI code
<b>7</b>	Lucas: Learn more about the CLTI code to

	<p>decide what to adapt to DLTi  John: Develop thorough understanding of DLTi Matlab code and GUI functionality  Greg: develop understanding of codebase and research/look into what I would need help with  Jason: Create instructor page</p>
<b>8</b>	<p>Lucas: Create the skeleton code  John: design front-end layout  Greg: design a prototypical template of front-end layout  Jason: Populate FIR GUI from a database entry</p>
<b>9</b>	<p>Lucas: Continue working on front end and continue to research JSXGraph  John: begin converting Matlab to Java  Greg: begin implementing features of UI improvement  Jason: Show Instructor feedback on FIR GUI</p>
<b>10 (demo 1)</b>	<p>Lucas: Continue working on front end  John: continue converting matlab to java  Greg: continue implementing features of UI improvement  Jason: Create DLTi table and read from DLTi GUI OR Work on implementing student responses</p>
<b>11</b>	<p>Lucas: continue working on front end  John: finish converting from matlab  Greg: continue implementing features of UI improvement  Jason: Create DLTi table and read from DLTi GUI OR Work on implementing student responses</p>
<b>12</b>	<p>Lucas: continue working on front end  John: get feedback and deal with known bugs  Greg: feedback from UI  Jason: build DLTi lab page</p>
<b>13 (demo 2)</b>	<p>Lucas: continue working on front end  John: make improvements from feedback  Greg: make improvements based on feedback  Jason: Populate DLTi GUI from database</p>

	entry
<b>14</b>	Lucas: continue working on front end John: make improvements from feedback Greg: make improvements based on feedback Jason: AJAX requests for DLTI Lab responses
<b>15</b>	Lucas: Wrapping Up/Final Presentation Prep John: Wrapping Up/Final Presentation Prep Greg: Wrapping up/ Final Presentation prep Jason: AJAX requests for DLTi lab responses
<b>16 (final demo/presentation)</b>	Lucas: Cleaning Up/ Final Presentation\ John: Cleaning Up/ Final Presentation Greg: Cleaning up/ Final Presentation Jason: Final Presentations

### **Project Description:**

One problem that we would like to solve is that with online labs, students would need to submit responses to grade. A response could include both a typed out explanation and a GUI state in addition to a computed short answer. Other potential problems that we could investigate include improving documentation to better facilitate the onboarding process, hosting a GUI demo on a webpage for easier demonstration, and designing responsibly, increasing accessibility to people with disabilities like blindness. Further, we plan on creating and improvising a front-end that is favorable for what we are aiming to accomplish. In addition, we would like to solve the problem of having to manipulate GUIs in matlab by simulating the GUIs online.

To allow instructors to provide feedback, we plan to create an instructor page and populate it with student responses. Student responses, including a GUI state, would be stored within a database, and the instructor page would display the database entries for instructors to provide feedback and grade. We will need to link lab responses to GUI states. One approach is to create two tables, one lab for lab responses and one for GUI states, and link them using a foreign key. Another approach is to use a non-relational database, but using two different types of databases could get messy. Also, because the CLTI needs restructuring and is written by someone else, it could be difficult to read code and put it where it needs to be. We will create GUIs using JSX graphs. Because we are all unfamiliar with JSX graphs, we will spend a lot of time reading the JSX graph API as well as stack overflow. For creating the UI, we will read a lot of bootstrap API as well as watch tutorials on Lynda.com

We will use html, css, and bootstrap to make the web page. While making the web page, the goal is for it to result with a more optimal design than before. With a user-friendly layout and design that is more intuitive for instructors and students, our project could be used as a standard of consistency for GUIs going forward. Javascript will be used to call the AJAX

requests to the PHP script. PHP will be used to query to the SQL database. The project will be constructed using the Model-view-controller principle for clean file organization. We will use GitHub for file management and will collaborate outside meetings using GroupMe.



