

Senior Research Project Draft Proposal

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1. Intranet Module
2. Purpose and scope of the research project
 - My project will be an addition to the Intranet. Currently, the Intranet has a module for calculator registration in case someone loses their calculator and also a module for identifying lost ones that have been found. However, there is currently no module to replace the functionality of a graphing calculator while it is lost.
 - The purpose of my project is to create an Intranet module containing a regular 4-function calculator along with a graphing utility and matrix and list editors. I will try to include every matrix, graph, and statistical operations contained on the TI-83.
3. Background and review
 - Some previous projects done in this area include Intranet 1 and Intranet 2.
4. Procedure and Methodology
 - In support of this project, I would need PHP and Javascript since this module will go on the Intranet. This would also require the use of binary expression trees for the operations (some of which would have only 1 argument for functions such as $\sin(x)$). Although this project does not include a computer algebra system, it does need numerical techniques such as Newton's method, numeric derivatives, numeric integrals, etc.

- To test the program, I would need to input sample data and run the commands on the data to see if it's processed correctly.
- The project will be broken up into segments, with each segment containing 2-3 operations (for example, programming the normal functions during 1st quarter, matrix operations during 2nd quarter, graphical analysis during 3rd quarter, etc.).

5. Expected Results

- I expect to obtain an Intranet module that can do matrix operations, statistical operations, and graphical operations on top of the regular 4 mathematical operations.