ECE 425 Final Project Proposal
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Arithmetic Calculator

Objective

The objective of this project is to create an arithmetic calculator. We will use the keypad buttons on the EduBase board. Depending on the button pressed, a number or operation will appear on the screen. Another button will be pushed to confirm the values and operation, and the result will be displayed on the laptop screen using UART. Additionally, there will be a clear button that clears the numbers and operation.

Background and Methodology

We plan on using all of the keypad buttons, which will allow the user to select their first value, then another button will be pressed to confirm that value. Then the user will select an operation to be performed (addition, subtraction, multiplication or division) and submit it. Finally, the user will select the next value and confirm it. The result will be displayed on the laptop screen once the second value is selected and confirmed. If the clear button is pressed at any point in this process, the process will restart, prompting the user to input the first number again.

We intend on using GPIO, the EduBase board, and UART for this project.

Pinout Plan

Pins	Function
PA2, PA3, PA4, PA5, PD0, PD1, PD2, PD3	Keypad
PA1 and PA0	UART

Components Used
- EduBase Board
- Tiva TM4C123G LaunchPad
- EduBase Keypad
- Laptop (to display UART results)