ECE 385: Project Proposal

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1 Description

We will create a music synthesizer on the DE2 board which works as follows:

- Push buttons to play the notes

- Switches to modulate the tones

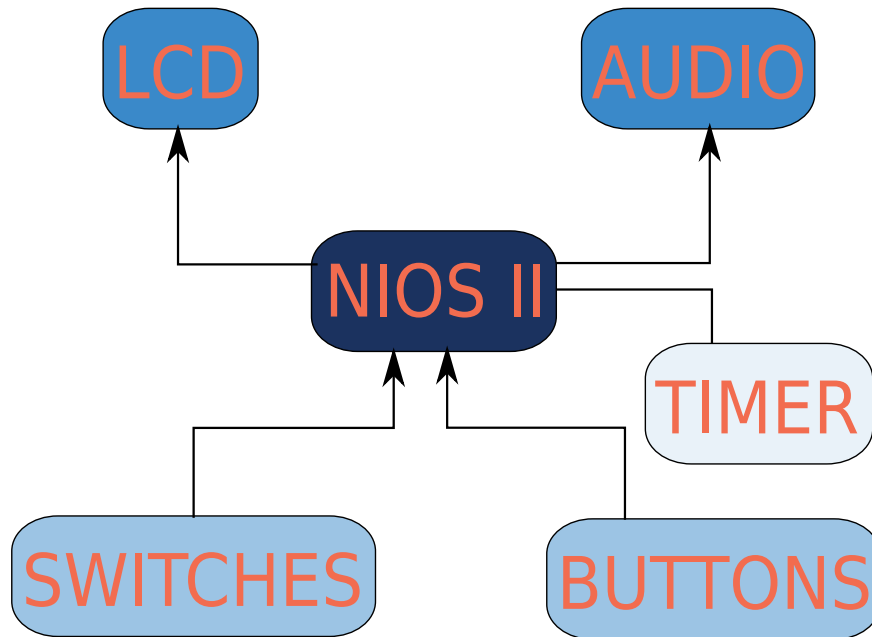- LCD panel to display the current modulation configuration

Figure 1: Synthesizer

2   Difficulty

Accomplishment	Proposed	Interrupt
Significant Software	✓	○
LED/Switches	✓	○
Push Buttons	✓	●
LCD	✓	○
Linking C with Assembly	✓	○
Timer 0	✓	●
Audio Codec output to Speakers	✓	●

Table 1: Difficulty Assessment

3   Schedule

3.1   Lab 1

- Play with audio codec, set up framework for generating sound

- Get at least one tone working

- Get timer setting up events for audio codec

3.2   Lab 2

- Set up interrupt handler to handle push button inputs

- Based on push button interrupt, play note accordingly

3.3   Lab 3

- Set up switches to modulate tones played by push buttons

- Display modulation configuration on LCD