First Milestone

Get all the notes and octave working with the audio. That is learn how to use the audio on the board. Implement the core datapath of connecting the inputs (switches) to the notes.

Second Milestone

Relate inputs from the keyboard to notes. Allocate and use memory for the notes to be played back. Implement the core control of the device. (Implement FSM for the device)

Third Milestone

Video support. Combining the control and datapath to display the recorded sequence to the VGA display. When we give an input to the device the VGA will up with the new sequence of notes. During playback highlight the active note with a different color.

Description

The project will be able to record notes for up to 10 seconds (not definite) and play it back when the user wants to. The user will be able to set each note using 4 switches (7 notes and the sharps) and 2 switches on the board for the ability to switch between 4 octaves. They will be able to record each note for 0.5 seconds by pressing a key on the board. They will be able to play back the sequence of notes entered by pressing another key on the board. The playback will include audio and will display the notes played back on a VGA display and the HEX display. Implement keyboard compatibility to the device.

Material Covered

This device implement control and datapath. This device also uses sequential circuits using the clock, and we would also need to slow down the clock during playback of the audio. It also uses many subject that were covered in lab.

Cool

For a CSC258 students how to use everything that shown in class and build a device. We used various board features to create something innovative. For a non-CSC258 student, it will be cool to use to short segments of music.

Personally

For Guillaume, he will learn more about music which he knows nothing about. He will also learn how to build a device from the ground up and problems that will need to solved by thinking outside of the box.

For Leo, he will be able to incorporate one of his interests in music with what he learned in this course, while learning about new topics that weren't fully introduced in class.