

Digital Theremin Synthesizer and Visualizer

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Project Checkoff Checklist

Input Module:

- Demonstrate different pitches being generated (linearly) by moving one hand
- Demonstrate different volumes being produced (linearly) by moving the other hand
- Switch colored gloves, then demonstrate (for left-handed users)
- Change the “center” and range of the frequency scale using labkit switches
- (If time permits) Turn on the “harmonizer”, which discretizes the input to match the harmonics of the external audio input

Audio Effects Module:

- Demonstrate playback of the external audio input, or the Theremin input, alone
- Demonstrate playback of both audio streams simultaneously
- Demonstrate each of the four audio filters separately (chorus, flange, delay, and reverb)
- Demonstrate two or more of the filters together
- (If time permits) Demonstrate more advanced tone generation, such as instrument simulation

Visualizer Module:

- Demonstrate vertical and horizontal bars changing with positions of each hand
- Demonstrate visualizations produced by Theremin input alone, in all three modes
- Demonstrate visualizations produced by external audio input alone, in all three modes (may have different songs for each)
- Select one mode for external audio, a different mode for Theremin input, and visualize together
- (If time permits) Save screenshot, then display on screen