sddec19-15 Presents: Cyren

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Project Topic – Overview

❑ Music effects device that can take input from a multitude of devices and allow the user to apply a series of programmable effects to the audio through an interactive UI using a display, knobs, and push buttons and output the audio to a desired device.

Concept Design
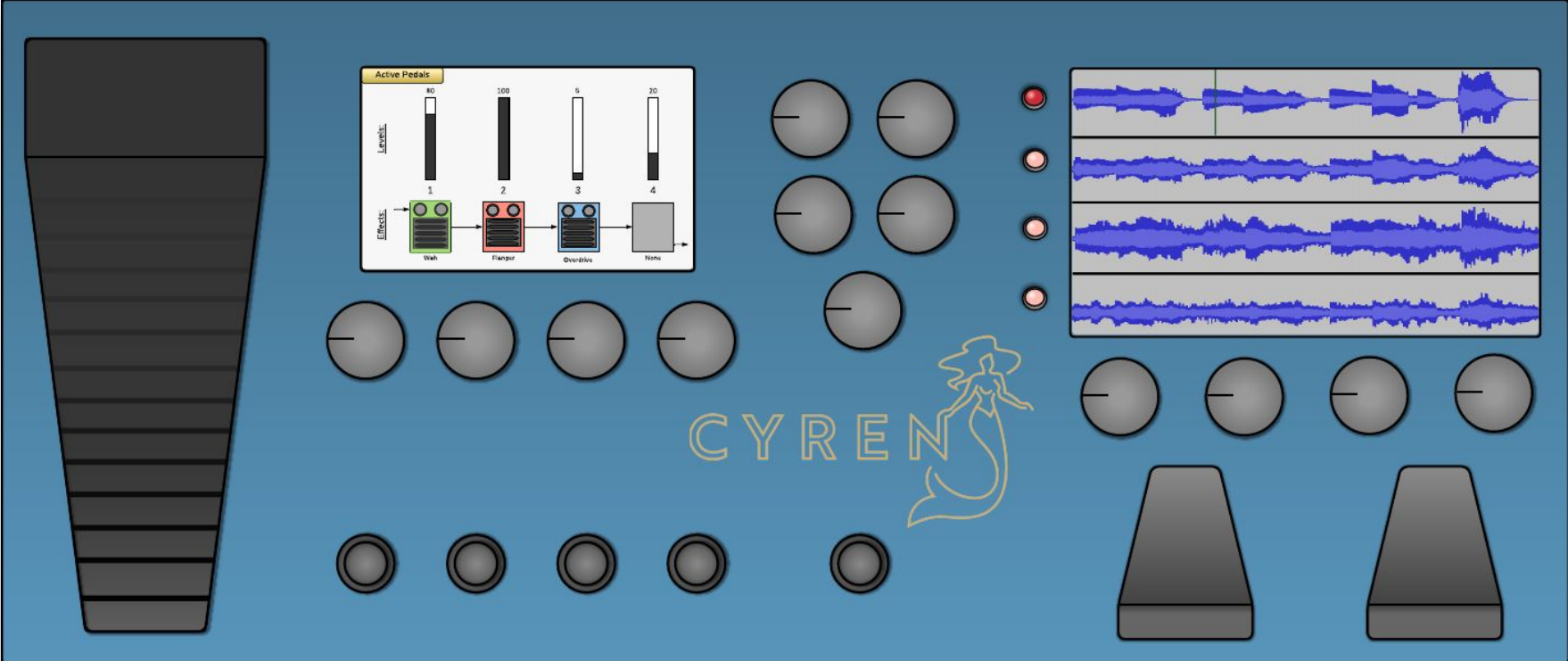
Project Topic - Hardware

Here is the basic outline of how our hardware will interface with the user and the environment.
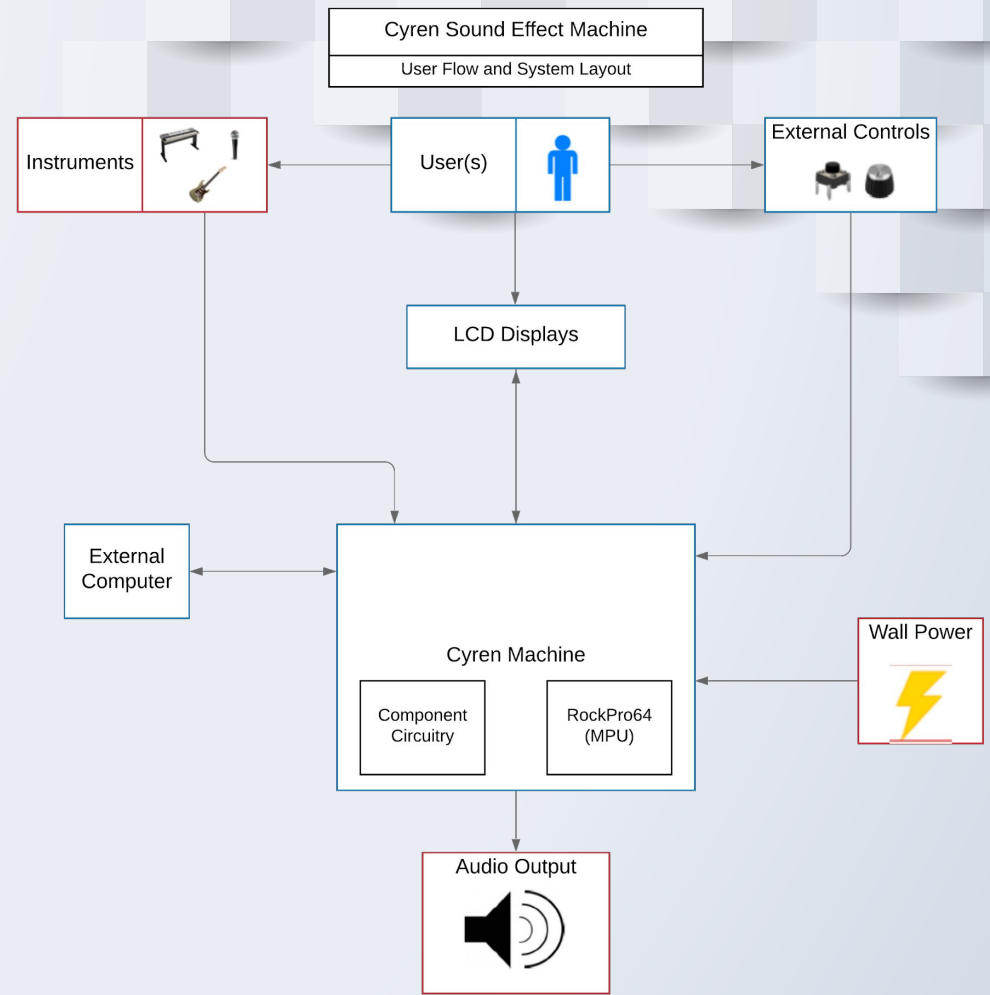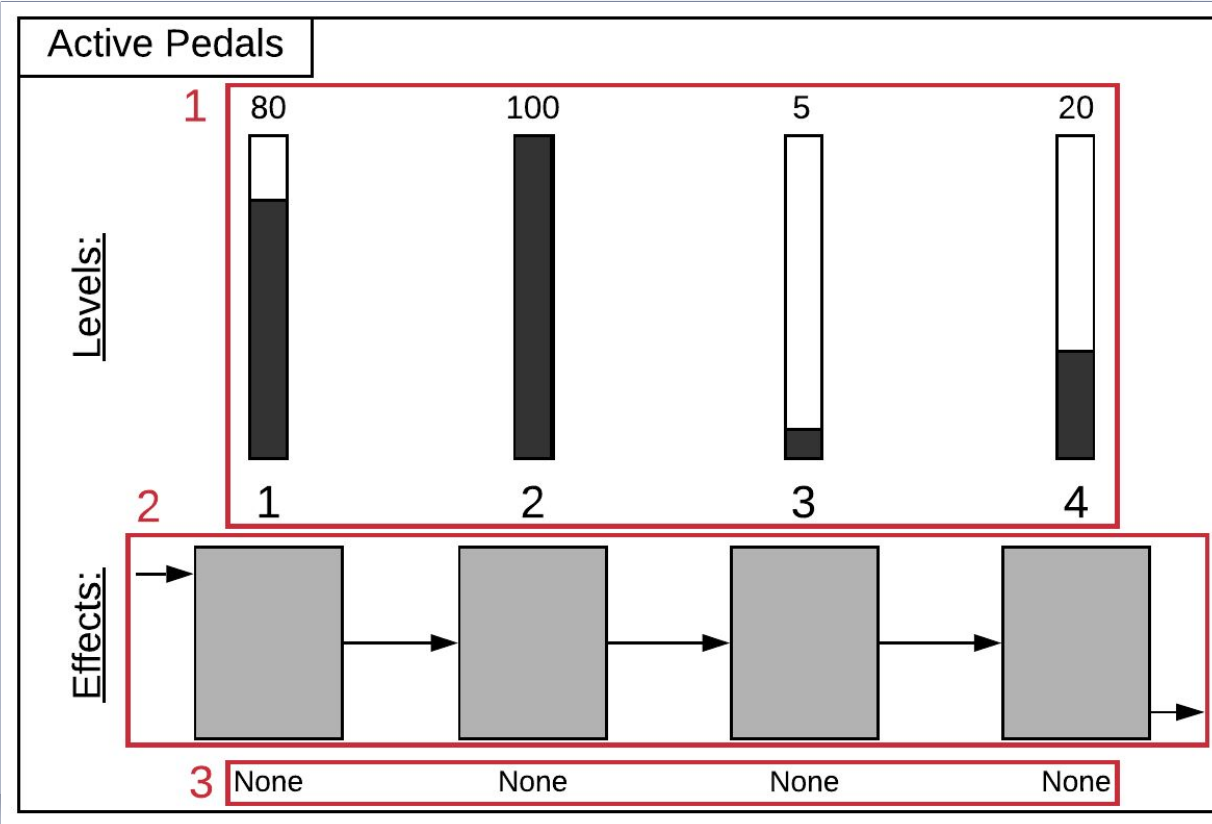
Project Topic - Hardware

- ❏ Pine RockPro64 microprocessor
- ❏ Assortment of rotary encoders and buttons for input
- ❏ Analog input jacks for instruments
- ❏ Two LCD displays (5" and 7") for user interface

Project Topic – Software

- ❑ Code base in C/C++
- ❑ Waveform manipulation and testing - FFTW3 & Libsndfile C libraries
- ❑ UI design - GTK C library

UI Design

Project Goals

❑ Develop a stand alone product that can receive audio from a connected device or instrument

❑ Manipulate the audio using a series of special effects and waveform filters (i.e: mimicking a guitar pedal)

❑ Interactive UI with display

❑ Transmit the manipulated audio to a connected device (i.e: speakers)

Technical Challenges

- ❑ Understanding Waveform Manipulation
- ❑ Integration of Hardware and Software
- ❑ Understanding/Documenting Microcontroller functionalities