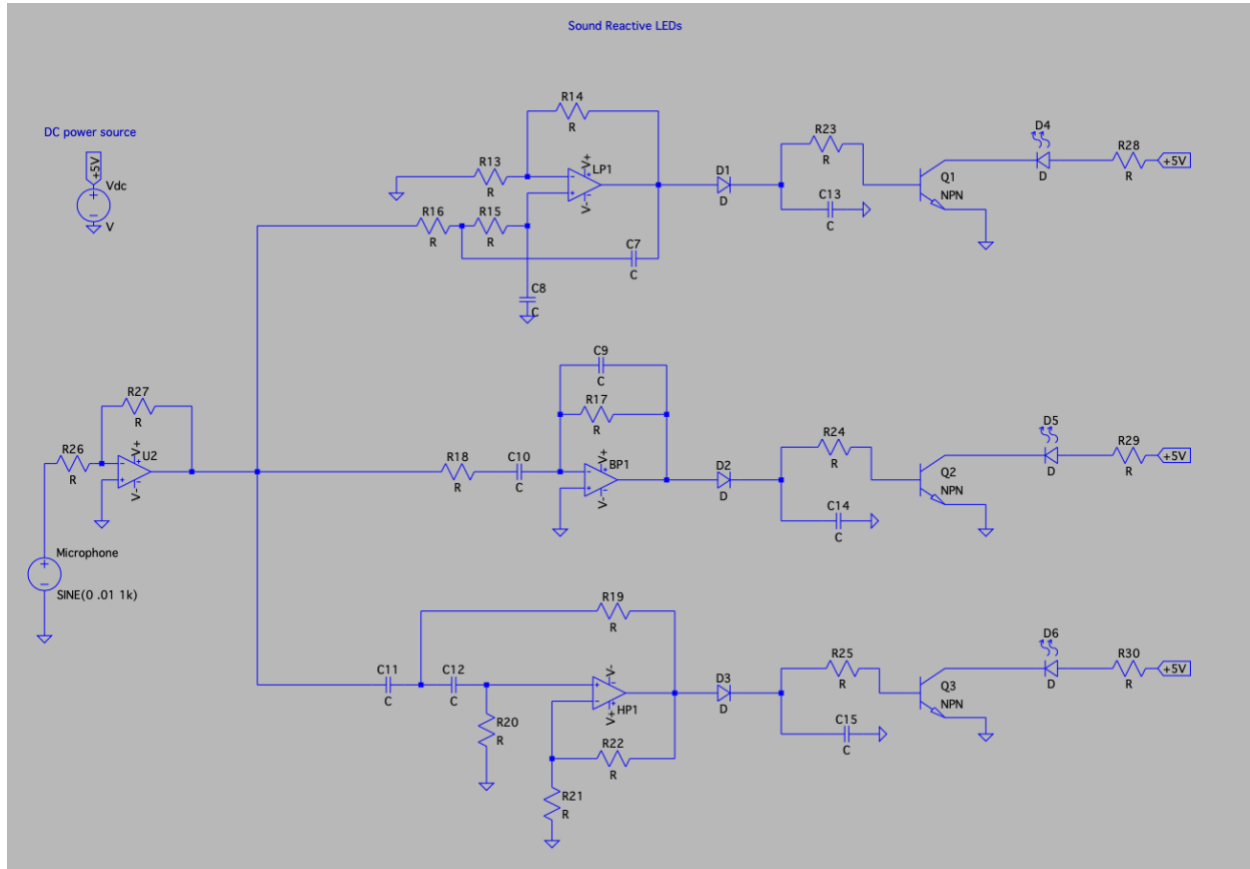Casey Goins KSV813

Danae Wnuk NMN952

Objective: To light different colored diodes based on the frequency of an input sound.

Plan of Implementation: A microphone is wired to the circuit to turn the sound into an electrical signal. Specifically, music will be played. This signal is then amplified (possibly with multiple amplifiers depending on the output signal of the microphone) and wired to second order lowpass, bandpass, and high pass filters. The output of each filter is converted to a mostly DC signal using a half-wave rectifier and filter (after learning more about AC analysis of transistors, a voltage regulator or emitter resistance will be considered, but a decision has not been made between the two). The capacitor will then act as the base voltage of a transistor. When the transistor has a base current, current will be allowed to flow from the collector to the emitter allowing current to flow through and light the appropriate LED.