Project Title: Automatic Bedtime Audio Volume Adjuster

Team Members:
Christopher Au
Brandon Avila

Description of Project:

The goal of the project is to create a gentle audio and optional visual experience for listening to music before bedtime by softening harsh or loud noises and gradually decreasing the volume over time as it gets closer to bedtime. The first part of this will be accomplished by comparing the volume to a threshold which will activate instantaneous temporary volume decrease. For the second part involving the gradual decrease, the audio will decrease audio until the audio becomes inaudible. In addition, a visualization module will accompany the audio adjustment. A color organ will display audio frequency and power through colored LEDs and propagate the visual signal through a delay line of similar LEDs for the final visual effect. The dampening of color and brightness will complement the audio module. Depending on the complexity of the project in practice, potential add-on ideas could involve making any of the above elements adjustable. 6.101 topics such as potentiometers, comparators, time constants, and diodes will be used in the calculations and analysis.