Analog Laser Harp
6.101 Final Project

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April 3, 2014

Abstract

A laser harp, as it currently exists, is an electronic instrument that consists of several lasers (5-10), usually projected from the instrument up to the ceiling. When the user interrupts a particular beam with his hand, a unique sound is produced. Our analog laser harp will also be an electronic instrument that is controlled by interrupting laser beams, and that is where the similarities end between it and conventional laser harps. Our analog harp, essentially, functions like a Theremin, the only difference being that the generated pitch will be controlled by which beam is broken along with the distance of the hand from the bottom of the instrument. Breaking the beam near the top of the instrument is analogous to plucking the open string of a guitar or violin, and moving your hand lower increases the pitch. The advantage of our laser harp over a Theremin is the ability to produce two pitches at once (only two because we are limited by our two hands), and the advantage over traditional laser harps is the much broader range of pitches. By combining the concepts of these two existing technologies, we plan to create a fun and unique electronic musical instrument.