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Project Report

Proximity Sensor

Kaushal Aryan
Siddharth Shah
Vikram Naryal

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Aim

To build a device which produce music using a simple proximity sensor with infrared LED's and Arduino.

Apparatus

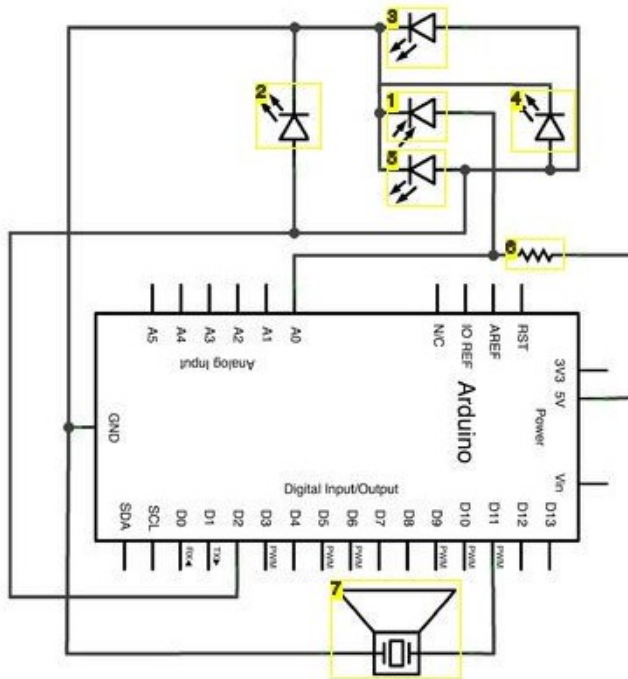Arduino, Infrared LED's, Infrared receiver, resistors, Breadboard.

Procedure

- At first, we made a simple proximity sensor using 4 LED's and an infrared receiver to detect proximity of an object. The Arduino calculates the distance between the receiver and the object using the laws of reflection similar to the case of SONAR.

- Then, we tried to create tones using PWM, to create signature frequencies. Each note has a frequency, created by varying the period of vibration, measured in microseconds. We'll use pulse-width modulation (PWM) to create that vibration.

- We calculated the pulse-width to be half the period; we pulse the buzzer HIGH for 'pulse-width' microseconds, then LOW for 'pulse-width' microseconds. This pulsing creates a vibration of the desired frequency.

Results

We made it possible to just make a simple proximity sensor which just senses the closeness of the object. But we were unsuccessful to build a device which has 3 proximity sensors and can produce notes

Circuit Diagram

Reference

http://www.instructables.com/id/Simple-IR-proximity-sensor-with-Arduino/?ALLSTEPS

http://arduino.cc/forum/index.php/topic,9845.0.html