Morse Code Transmitter

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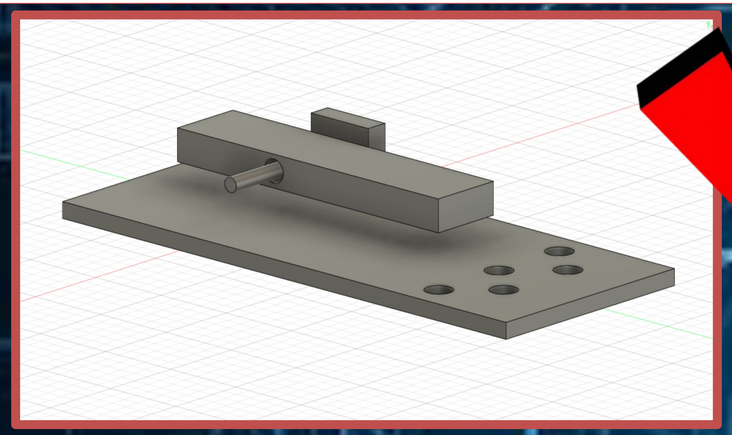
Abstract

My project idea is to make a 3d printed morse code transmitter with a visual output by using an led light. It uses a photoresistor and LEDs to display the morse code signal. When the lever is pressed it will cover the photoresistor which will trigger the led to turn on. When the lever is released the led light will turn off. This can be used to display a morse code pattern by making it blink on and off. To expand on this project, the light from the led can be deciphered by a Morse code receiver by using another photoresistor and convert the light turning on and off to an actual message.

Introduction

This is a morse code transmitter with LEDs as the output. It uses a photoresistor to determine if the light should be on or off. This could be helpful for people trying to learn it because you can see led lights light up which is a visual representation of the morse code signal.

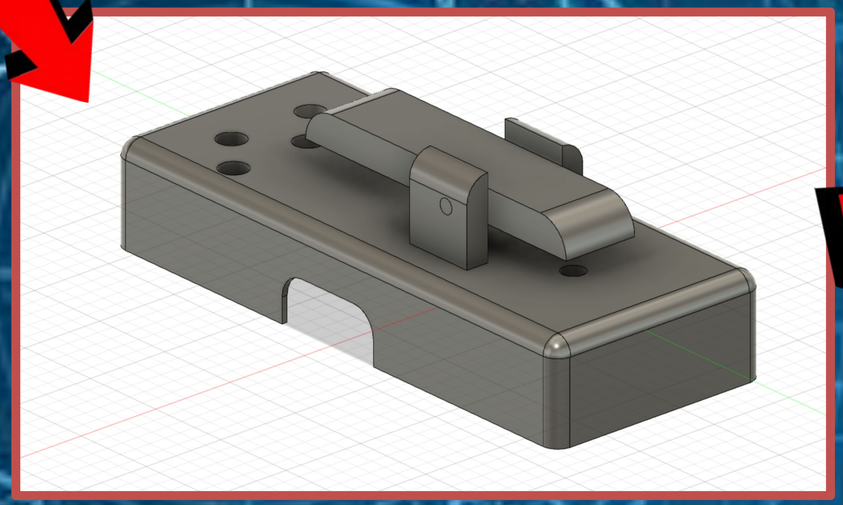


This is a 3d model that I designed in fusion 360. It was printed with PLA Plastic and it was designed to be printed out in one print. This means that I did not have to assemble anything and the lever will move after printing.

Methods and Materials

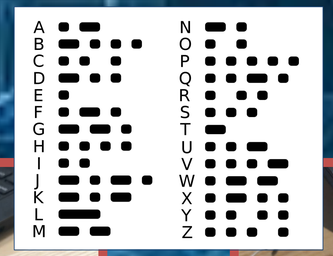
The materials used are an Arduino, wires, LEDs, 220-ohm resistors, a photoresistor, and a 3d print to display the signal.

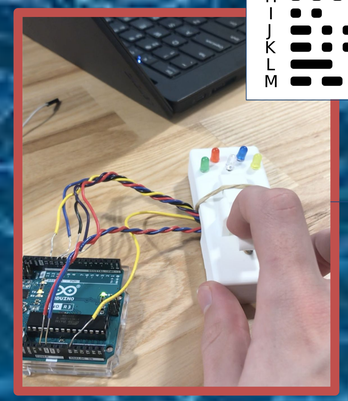
The first part is turning on the transmitter as a light being the trigger. If you shine a flashlight on the device the led lights will blink indicating it is on. This can be determined by averaging the values of the photoresistor in the room and setting it to a variable. Then when the light goes below 90% of the max value the lights will blink and it will calculate the average again but this time when your hand is closer to it. The LEDs will turn on and off depending on if the value of the resistor increases by 3 compared to the max value.

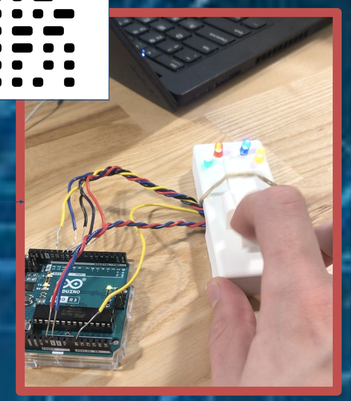


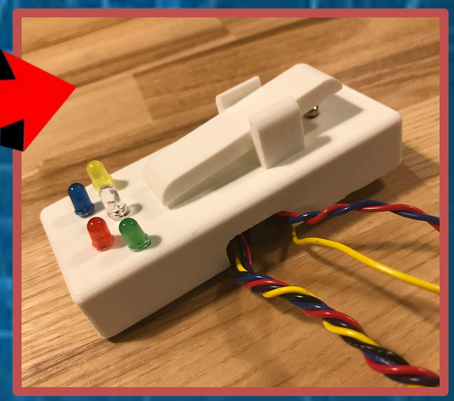
Results

The results of this project show that a photoresistor can be used to determine the more and lack of light surrounding it to trigger a certain operation.









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