Lightning Cloud

Body:

Clouds are comprised of tiny liquid droplets; we often disregard these giant beast, but nonetheless are visible from vast distances. Since opposites attract, negatively charged particles from the cloud meet the positive charged particles on the ground and produce "lightning". Though these fascinating monsters are impossible to contain, it is possible to simulate a cloud and transpose an illusion of having one inside a room.

Components:

1. Arduino Uno

2. microphone sensor

3. NeoPixel LED strip

4. A-B USB Cord (printer cord)

5. Paper Lanterns

6. Charger block (iphone)

7. Pillow stuffing

8. IC2262 Transmitter/Receiver

How it Works:

When the cloud is plugged in, it will turn on into a default (color) mode. When the user presses one of the four buttons on the remote, the cloud will switch to a certain mode (lightning, fading, single color, acid, OFF) when in lightning mode and with the use of the integrated microphone, the cloud will react to the sounds (of thunder) and light up simulating a lightning cloud. Other modes such as fading will continuously fade from one color to the next. The single color mode works by staying in a single color unless the

user presses the same button again, switching colors each instance the button is pressed. Acid works similar to fade but instead various colors are randomly lit all over the cloud, simulating an acidic effect.

Instructions:

Before soldering, coding or any other operation, go outside and gain some inspiration by studying the clouds, notice all the different types of shapes each cloud makes.
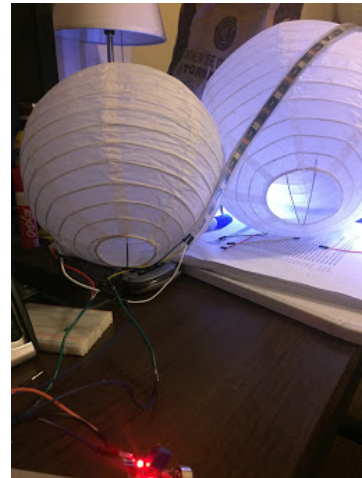
start by creating the structure of the cloud. With a few paper lanterns one can visualize what the cloud will look like. Given that clouds morph into many shapes, it is up to the creator to use as many or as few lanterns as they wish. Once the configuration is set to mind, hot glue the lanterns together and wait for the process to dry.
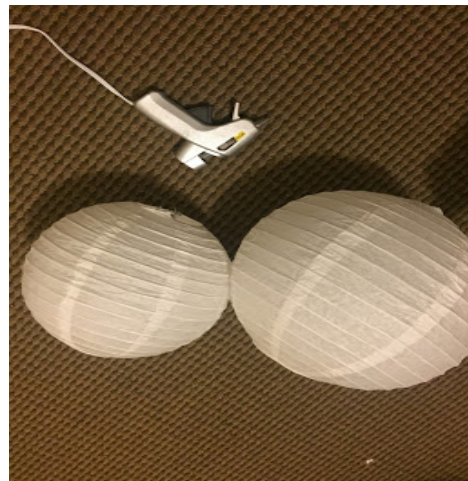
Next, prototype the position of the LED's by wrapping the strip around the new formed lanterns. Add the code and test the LED's, once happy with the arrangement, hot glue the back of the LED strip by wrapping them on the lanterns. Wait for the process to dry again.

Solder the mic leads to the proper Arduino lead. (see code for details)

The mic has to be adjusted with an integrated potentiometer which changes noise sensitivity. Place the mic towards the lower opening of the lantern to allow noise to come through more easily. This will improve the clouds reactivity to sound and appear more realistic.
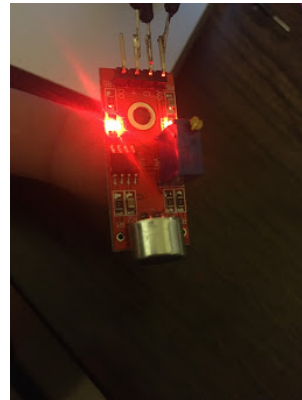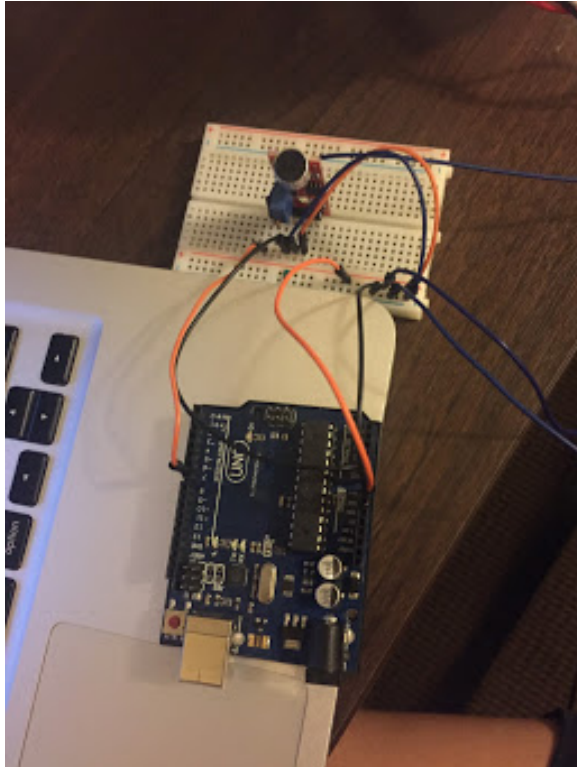

Repeat the same process to solder the receiver connections to the Arduino.

Once all the connections are secured and soldered, place all the electronics inside the cloud and start adding pillow stuffing to the cloud structure.

The cloud is then ready for use.

Continue to add pillow stuffing until satisfied with results. When the desired look is reached, just hang it with 20lbs fishing line and plug the cloud in.