Translucent Concrete Display

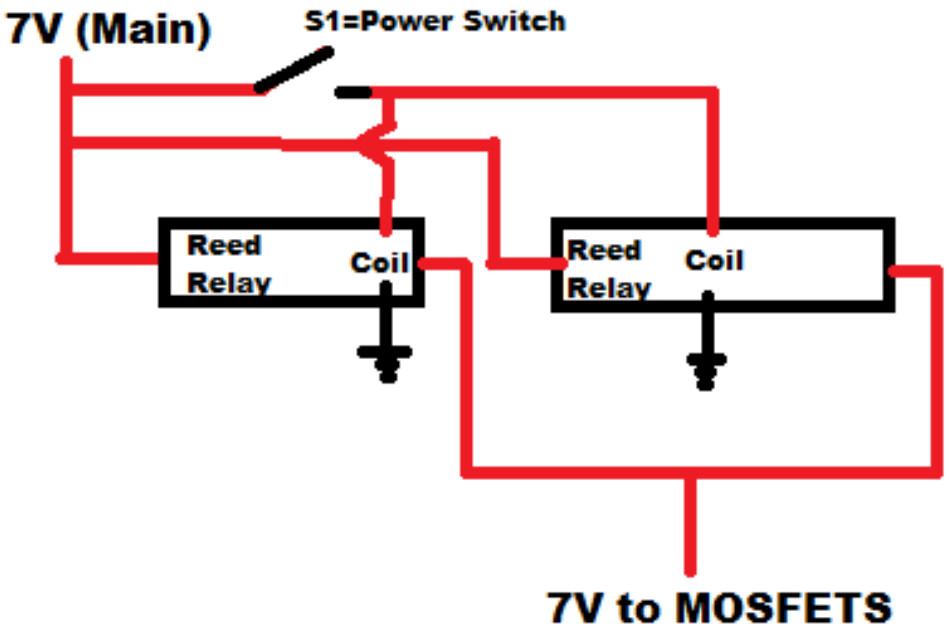
Objective

- To create a prototype LED display to be placed behind a translucent concrete block.
- Using Persistence of Vision technique.

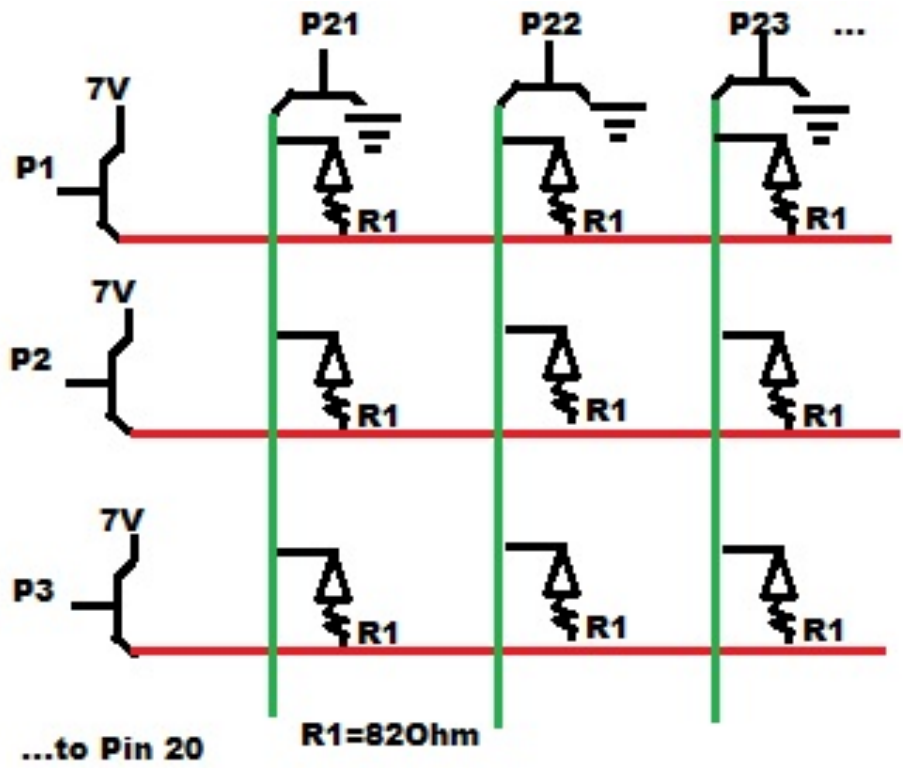
Features

- NI-LabVIEW control system
- Arduino as Micro-controller
- 40 P-Channel MOSFETs
- 400 LEDS

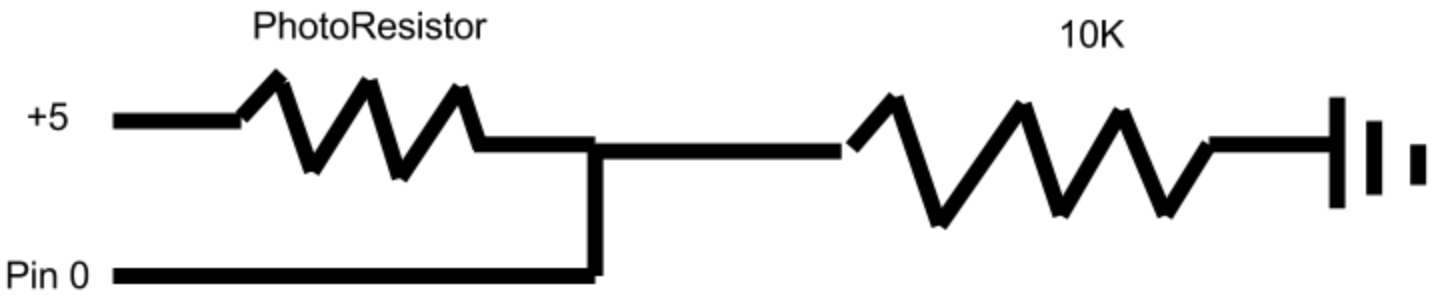
Circuit 1- Power Control



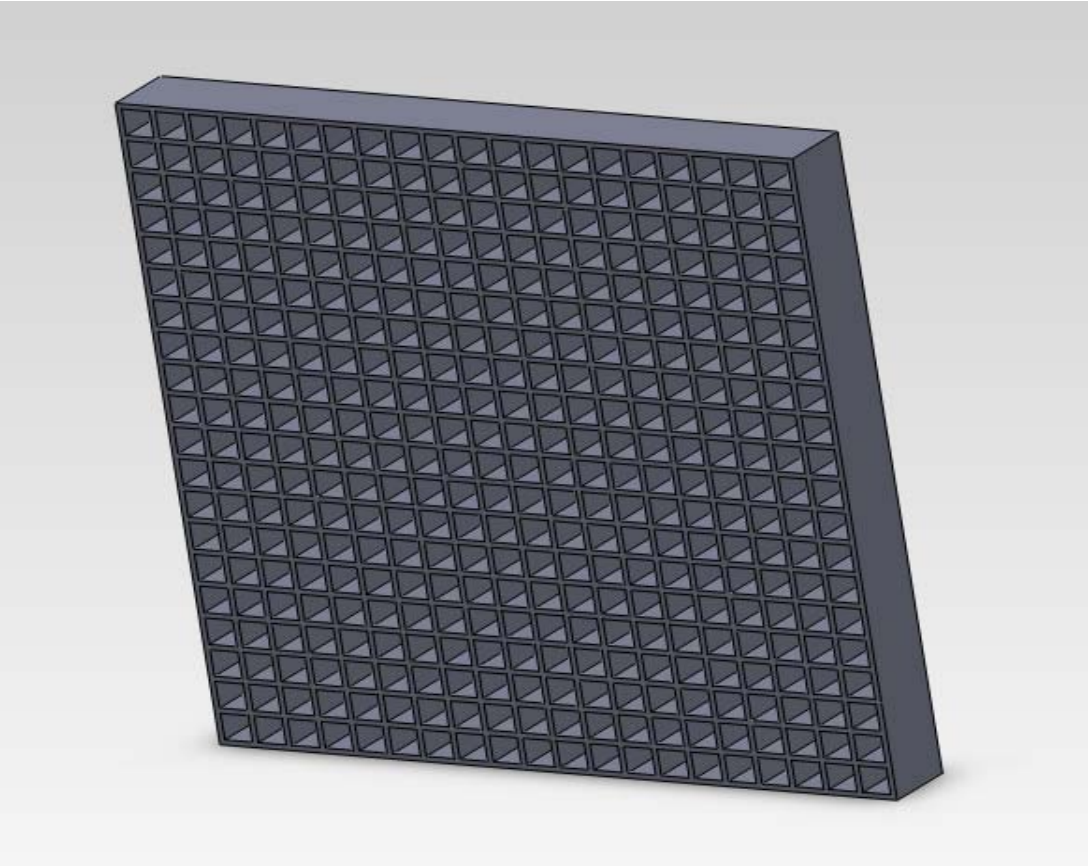
Circuit 2 – LED Control



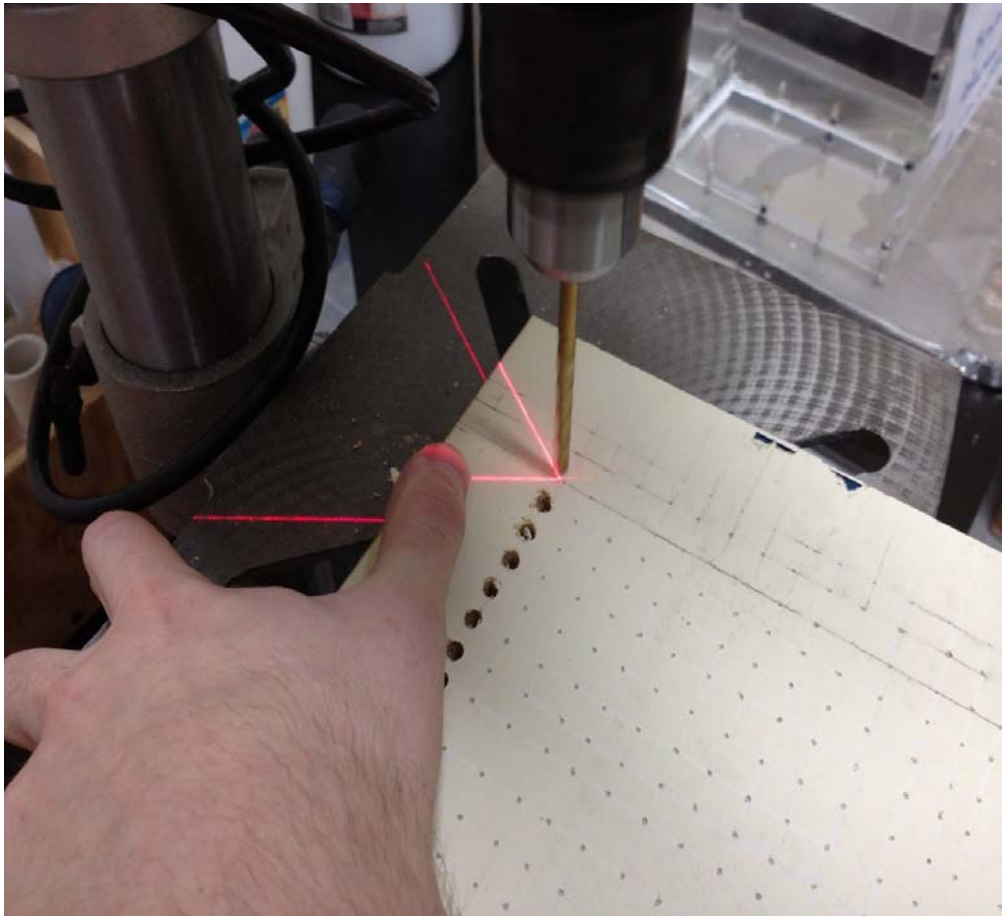
Circuit 3 – Analog Sensor



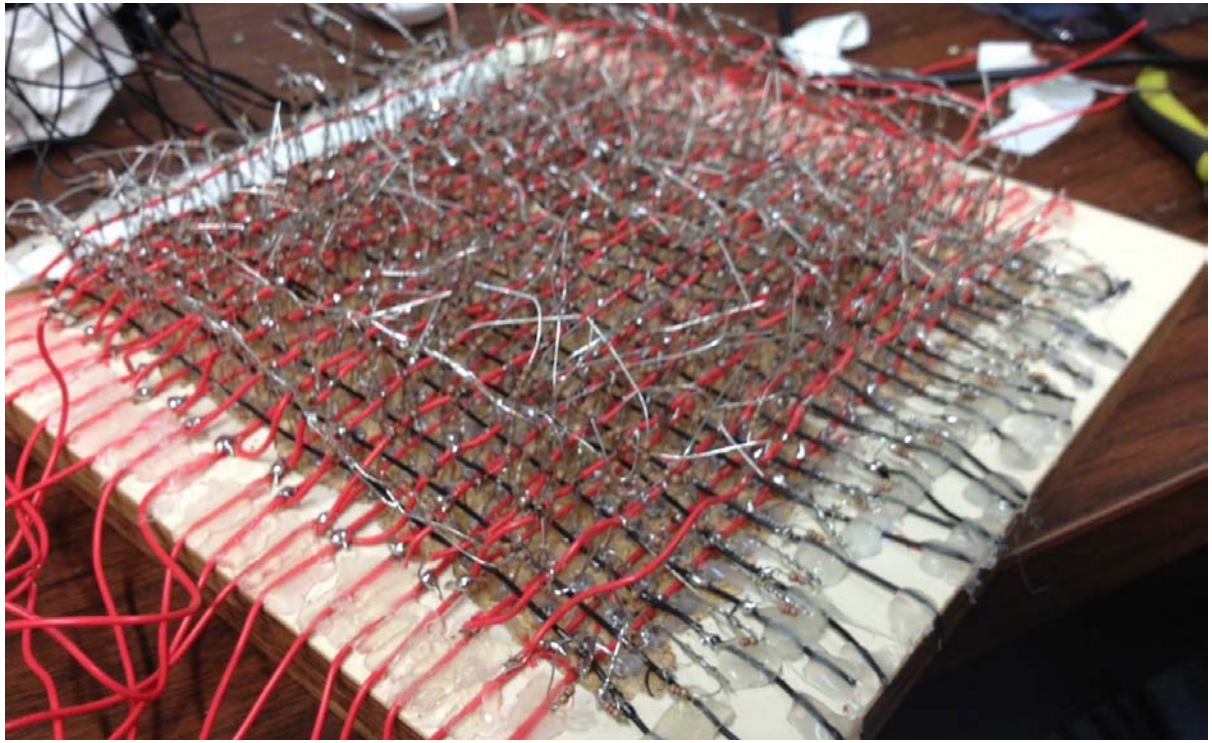
Mechanical Design



Mechanical Design



Mechanical Design



LabVIEW

Matlab Script

VI-Input/output dictates that this variable is designated as input or output within labview

```
inputpath=VI-Input
level=VI-Input
image=imread(inputpath,'jpeg');
imresized=imresize(image,[20,20]);
BW=im2bw(imresized,level);
b=double(reshape(BW.',[],1));   %%VI-Output
imshow(imresized);
imshow(BW);
output=[];
for i=1:8:400
    bit=b(i:i+7,1);
    byte=sum(bit.*[128;64;32;16;8;4;2;1]);
    output=[output;byte];

end
output   %%VI-Output
```

Arduino Code

Future Implementation