Introduction:

In this lab, I will give you instructions on creating one of the big screens’ greatest inventions from the mid to late 1980s. The Larson Scanner. By using a series of LEDs, 220-ohm resistors, and a microcontroller, we can recreate the scanner that was so well known.

The programming portion of this scanner will now be explained. Starting with your setup, add a “for” statement and set the parameters of your statement using and integer and other parameters to get the controller to output to the LEDs in the order you wish. Next you want to set your integer to output. This will let the controller know that when the parameters are met, output… Next up is the loop. Using a “for” statement once again and setting your parameters in this section of code will make the controller continue to output in the parameters set above. The parameters set in the loop will continue until the parameters are not met or the controller is shut-off.

1st put your LEDs on the breadboard.

2nd take the microcontroller and wire the outputs (+) to your breadboard on the anode side of your LED.

3rd put resistors inline with the Anode side of the LEDs. Using 220ohm R because that was what the kit had. 5volt PS with about 2.2 Vf . I used a 220 I could have used something above 140.

4th wire a ground from the microcontroller to the breadboard main negative line.

5th wire from the main negative line to Cathode side of the LEDS.

6th program your microcontroller to make the outputs to the LEDs run consecutively down the row of LEDs. (Use “for” statements and integers to decrease the amount of time spent coding).

7th program the microcontroller to make the outputs run the LEDs backwards once they reach the end.

7th loop this program so the LEDs come on and off in a row forwards and backwards for all of eternity.