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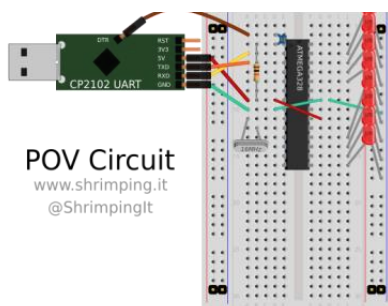
### Engineering 12L Final Project: Persistence of Vision

For my final project, I used a series of rapidly flashing LEDs and the concept of Persistence of Vision in order to “paint” an image on a person’s retina. Persistence of Vision (POV) is a trait of the human eye which allows you to see the afterimage of objects for a very brief time. Armed with this concept, I was able to program a set of LEDs to flash a seemingly random pattern that actually form an image when they are shaken back and forth.

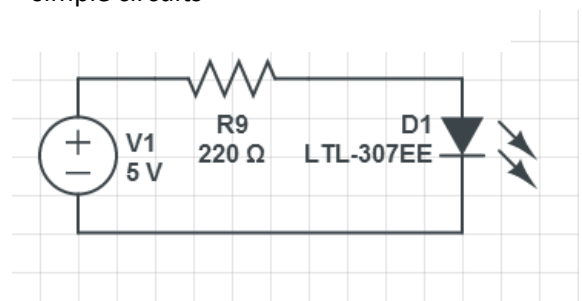


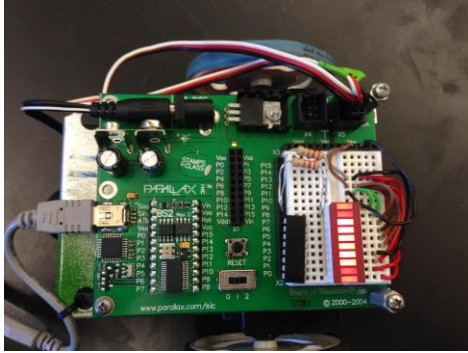
However, my circuit and the original circuit are quite different since I didn’t have the components that the directions asked for. Instead of using the Arduino-like board that the directions asked for, I used the BASIC Stamp board that was on the robot kits supplied by Mr. Rebold. As a result, my circuit was simplified drastically since the circuit board had easily programmable independent voltage sources that were programmable in BASIC.

-The original circuit listed



-My circuit featured just 10 of these simple circuits





I also used a resistor bar (the black rectangle) and an LED bar which function the same way as a single one.

Below is my program that I used

---

```
'{$STAMP BS2}
'{$PBASIC 2.5}
```

```
index VAR Byte
```

```
OUTS = %0000000000 ' setting the output at pins 8-15 to low use OUTS, DIRS for 16 bit
```

```
DIRS = %1111111111 ' setting the direction of pins 8-15 to output
```

```
PAUSE 1000
```

```
DO
```

```
FOR index = 0 TO 32
```

```
LOOKUP index,
```

```
[%1111111111,
```

```
%0000000011,
```

-This is the pattern of how the LEDs flash (if you can't tell, the pattern is my initials MW.

```
%1111111111,
```

```
%0000000011,
```

```
%1111111111,
```

```
%0000000000,
```

```
%1111111111,
```

```
%1100000000,
```

```
%1111111111,
```

```
%1100000000,
```

```
%1111111111 ], OUTS
```

```
PAUSE 1
```

-Each line above for the pattern is on only for 1 millisecond

```
NEXT
```

```
LOOP
```

```
DIRH = %00000000
```

```
END
```

---

While my circuit was pretty different from the one listed in the instructions, it still functions the same way and was able to produce an image. The circuit ended up rather simple, but I was able to learn more about programming in BASIC (along with using those cool resistor and LED bars in the kit).