



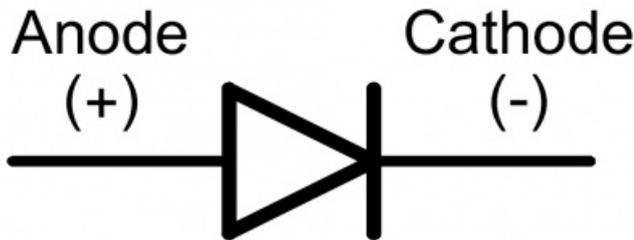
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Pulse Flash LED with PWM

Pulse Width Modulation is the method of having a digital port, which is only On or Off to have a varying output voltage. Use this approach to flash and LED with a pulsing effect. Last Updated: 1/16/2016

Step 1

DC electricity works by having Positive and Negative. An LED is short for a Light Emitting Diode. A diode prevents current from flowing both directions. Diodes only allow current to flow in one direction, and they're always polarized. A diode has two terminals. The positive side is called the anode, and the negative one is called the cathode.



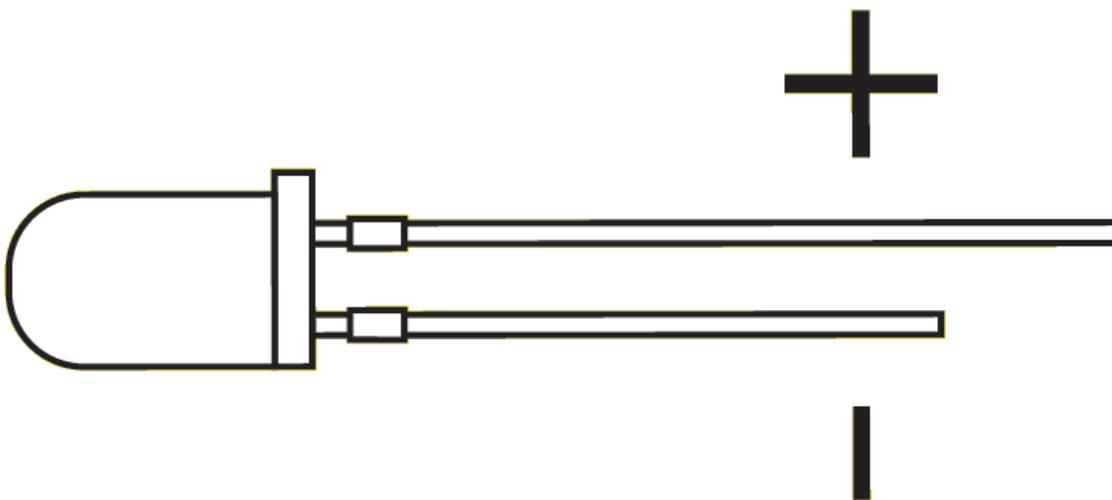
Current through a diode can only flow from the anode to the cathode, which would explain why it's important for a diode to be connected in the correct direction.

Did You Know: Physically, every diode has some sort of indication for either the anode or cathode pin. Usually the diode will have a line near the cathode pin, which matches the vertical line in the diode circuit symbol.

An LED has a physical indication of Anode and Cathode pins as well. LED stands for light-emitting diode, which means that much like diodes, they're polarized. Find the longer leg, which indicates the positive, anode pin.

Connect an LED to port D0 of the EZ-B. In this example, we will provide power (+) to the LED from a signal pin of the EZ-B. The EZ-B will output +3.3 volts on the signal pin when it is in the ON state. The signal pin will respectively output GND when it is in the OFF state.

- 1) Connect the LED's Anode (+) wire to the signal (white) pin D0 of the EZ-B.
- 2) Connect the LED's Cathode (-) wire to the ground (black) pin D0 of the EZ-B.



The Code

Use the ServoSpeed() command to apply a ramping speed to the PWM. The PWM command to set the brightness. The PWM essentially turns the state of the digital pin ON and OFF hundreds/thousands of times per second to produce the result of a "varying" voltage. The PWM range is between 0% and 100%, called the Duty Cycle.

The ServoSpeed() command will configure Ramping between two PWM duty cycles.

Add an EZ-Script control to your project, edit and paste this code...

Code:

```
# set the servo speed to 2
ServoSpeed(d0, 2)
```

```
:loop  
  
# Set LED On  
pwm(d0, 100)  
  
# wait some time for the pwm to do its ramping thing  
sleep(3000)  
  
#set LED Off  
pwm(d0, 0)  
  
# wait some time for the pwm to do its ramping thing  
sleep(3000)  
  
goto(loop)
```

Tweak the Sleep() command time and the ServoSpeed() command time to see the different pulsing effects.