Part 1: Definitions, Functions, and Electronic Components

MercedEnergy.com

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Functions : digitalWrite()

- Syntax
  - digitalWrite(pin,value)
  - Parameters
    - pin : the pin number
    - value: HIGH or LOW

Functions : pinMode()

- Configure behavior of the pin
  - Syntax
    - pinMode(pin,mode)
  - Parameters
    - pin: pin number whose mode will be configured
    - mode: INPUT, OUTPUT

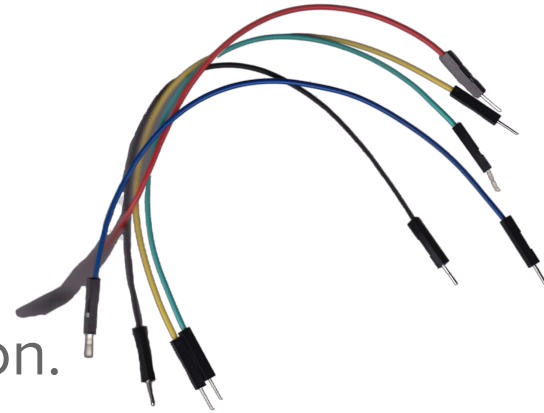# Functions : analogWrite()

Works on pins 3, 5, 6, 9, 10, and 11

- Light a LED at varying brightnesses or drive a motor at various speeds
  - Syntax
    - analogWrite(pin,value)
  - Parameters
    - Pin to write to
    - O to 255 (0V to 5V)

Definitions

- PWM - Pulse Width Modulation. From HIGH to LOW as fast as possible, then it takes the average.
  - Used to control dimming LEDs
- LED - Light Emitting Diode
- Anode - Positive side of LED
- Cathode - Negative Side of LED
- Sketch
  - It's the unit of code that is uploaded to and run on an Arduino board
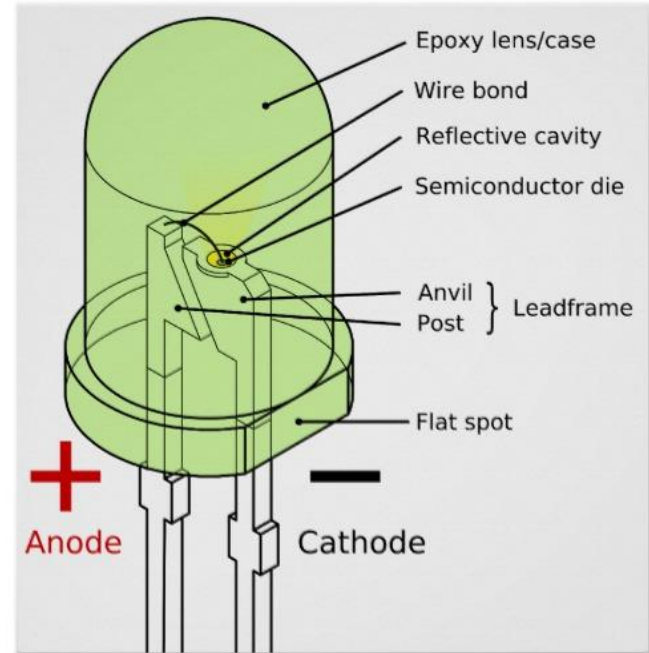
Components : Jumper Wires

- Used for prototyping. No need to solder.
  - Typically used on breadboards.
- Wires are all the same.
  - Colors
    - may be used to differentiate function.
- Types
  - Male-Male
  - Male-Female
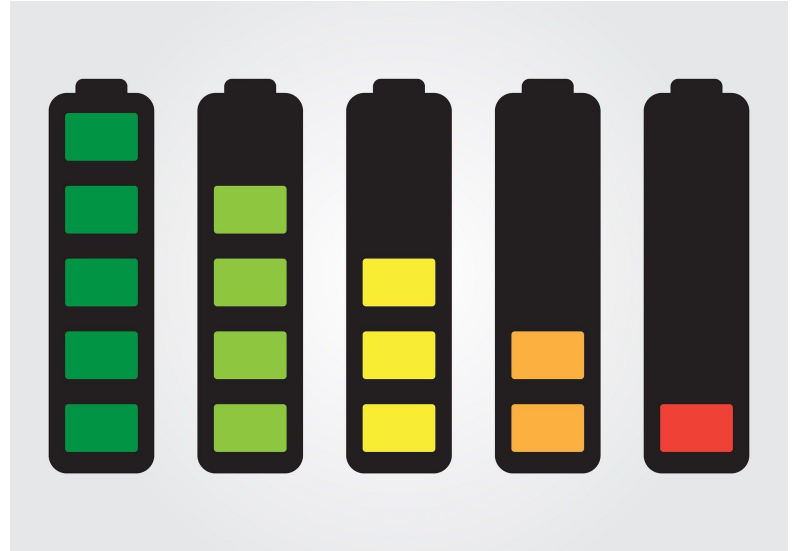 - Female-Female

Male-Male

Components : LED

- Light Emitting Diode
    - Anode is Positive
        - Long Leg
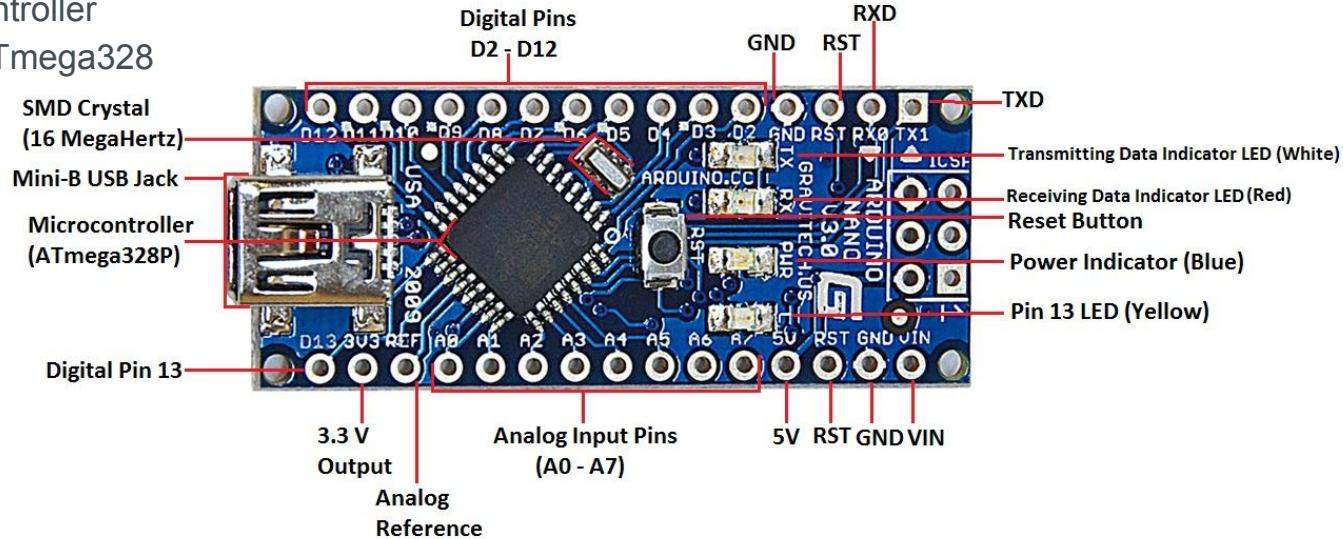   - Cathode is Negative
        - Short Leg

Components : Battery

- Batteries com in different sizes and shapes.
  - Cylindrical
  - Prismatic
  - Pouch
- Voltage
  - Difference between points.
- Current
  - Moving electrons in a wire
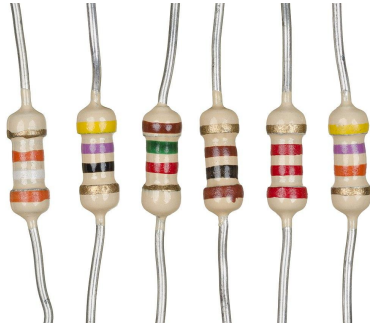
Components : Arduino Nano

- Made of multiple components
- Microcontroller
  - ATmega328

Arduino Nano V3.0 Pinout

www.CircuitsToday.com

Components : Resistor

- Limits the amount of current

- LED may burn

- Components that use electricity may burn if to much current is applied.

- Resistance is measured in Ohms
  - Resistor bands determine amount of resistance

https://www.instructables.com/id/How-to-read-color-codes-from-resistors-1/

Thank You!

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Sources and Websites

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- Ciruitstoday.com
- Amariei, Cornel. Arduino Development Cookbook. Packt Publishing, 2015.
- Sparkfun.com
- https://www.instructables.com/id/How-to-read-color-codes-from-resistors-1/