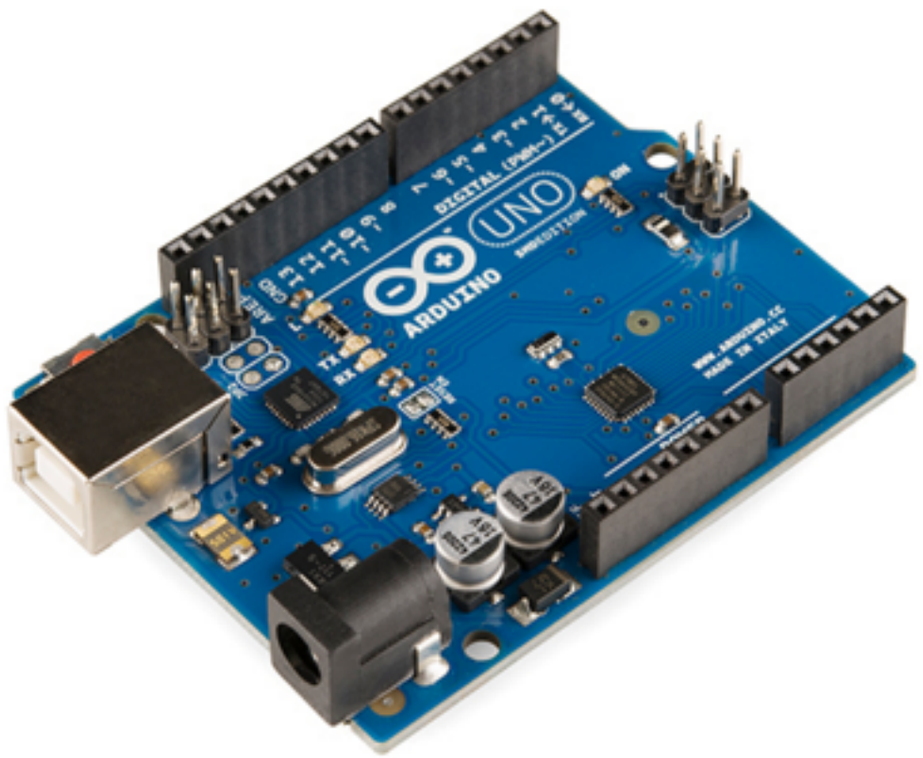
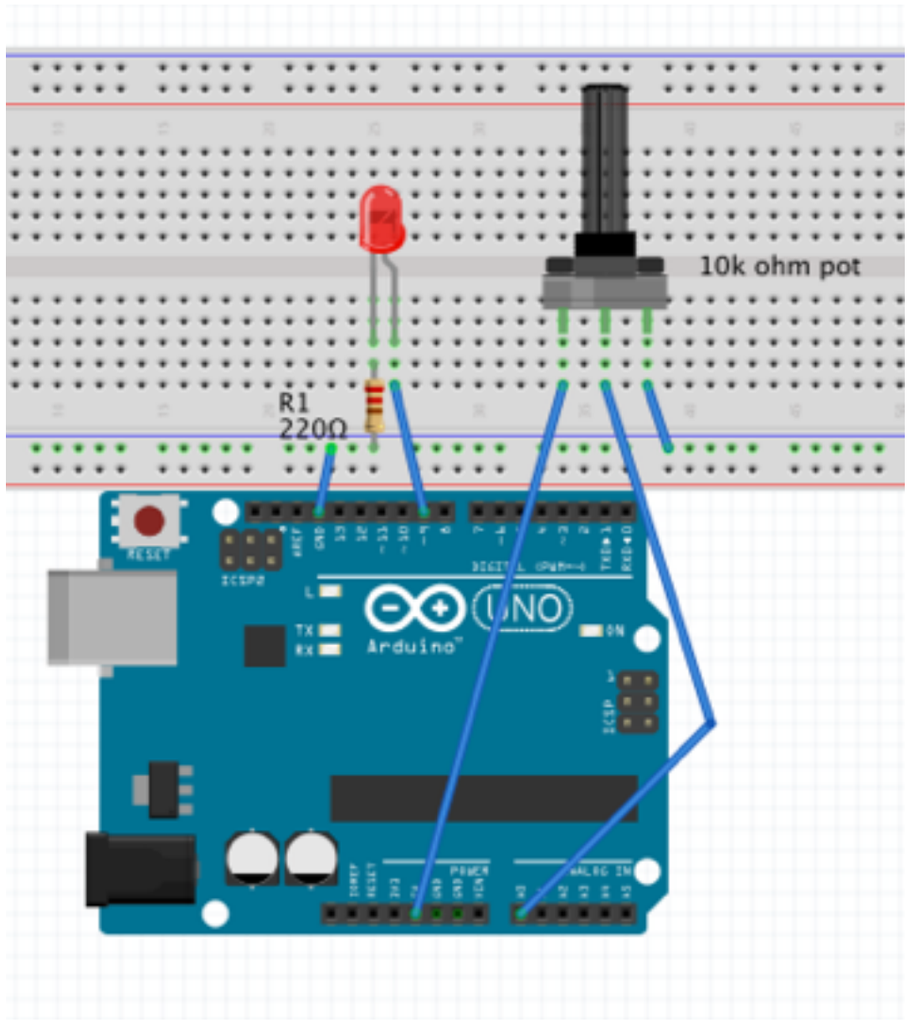




Arduino Bootcamp : Learning Through Projects

Using a Potentiometer to Adjust LED Brightness

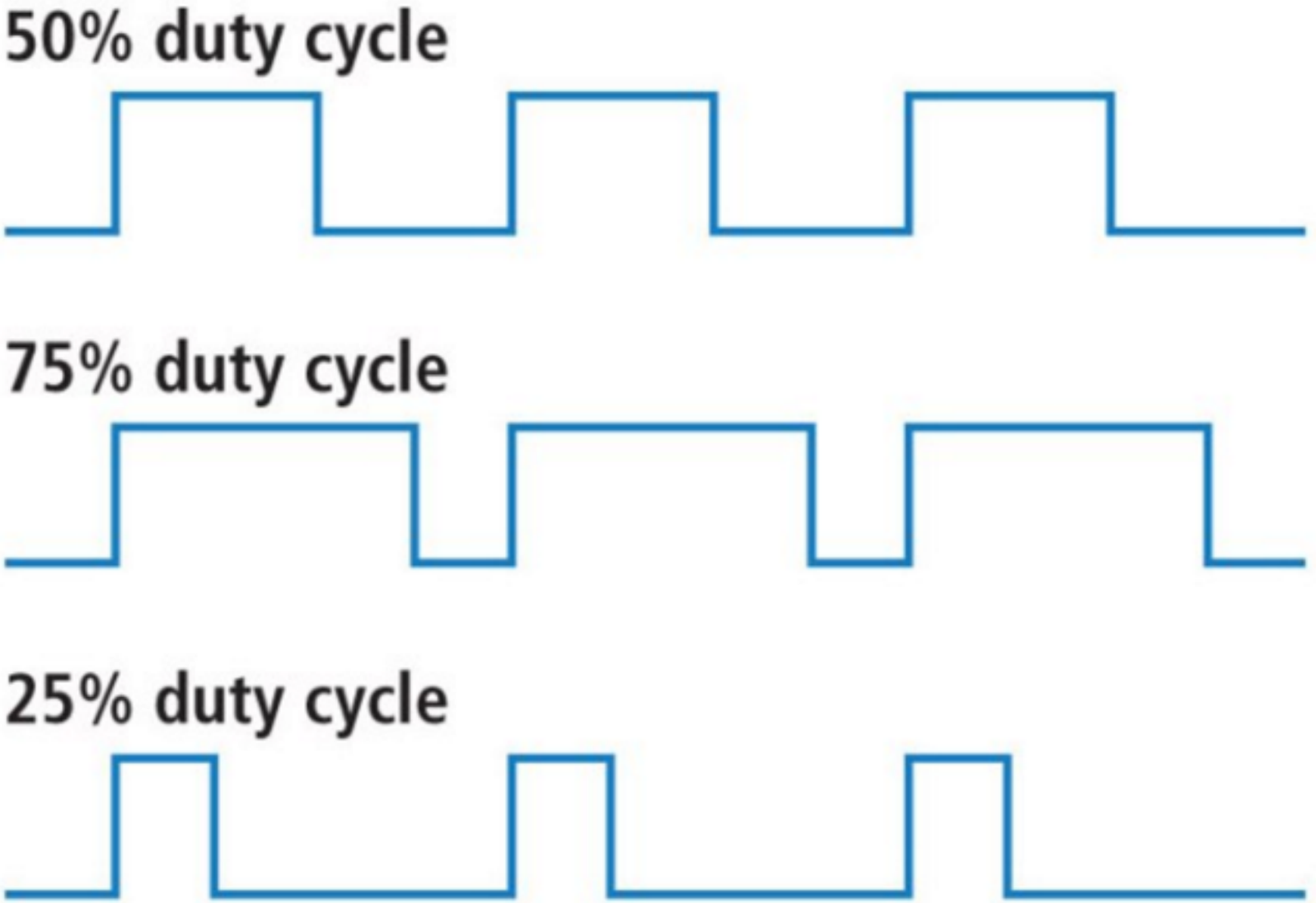
Project Objectives

- In this project you will learn:
    - What is a potentiometer?
    - How to connect a potentiometer in a circuit
    - How to take an analog reading using the Arduino
    - Understanding pulse width modulation (pwm) and how it works
    - How to use the analogRead() function
    - How to use the analogWrite() function
    - How to use the map() function

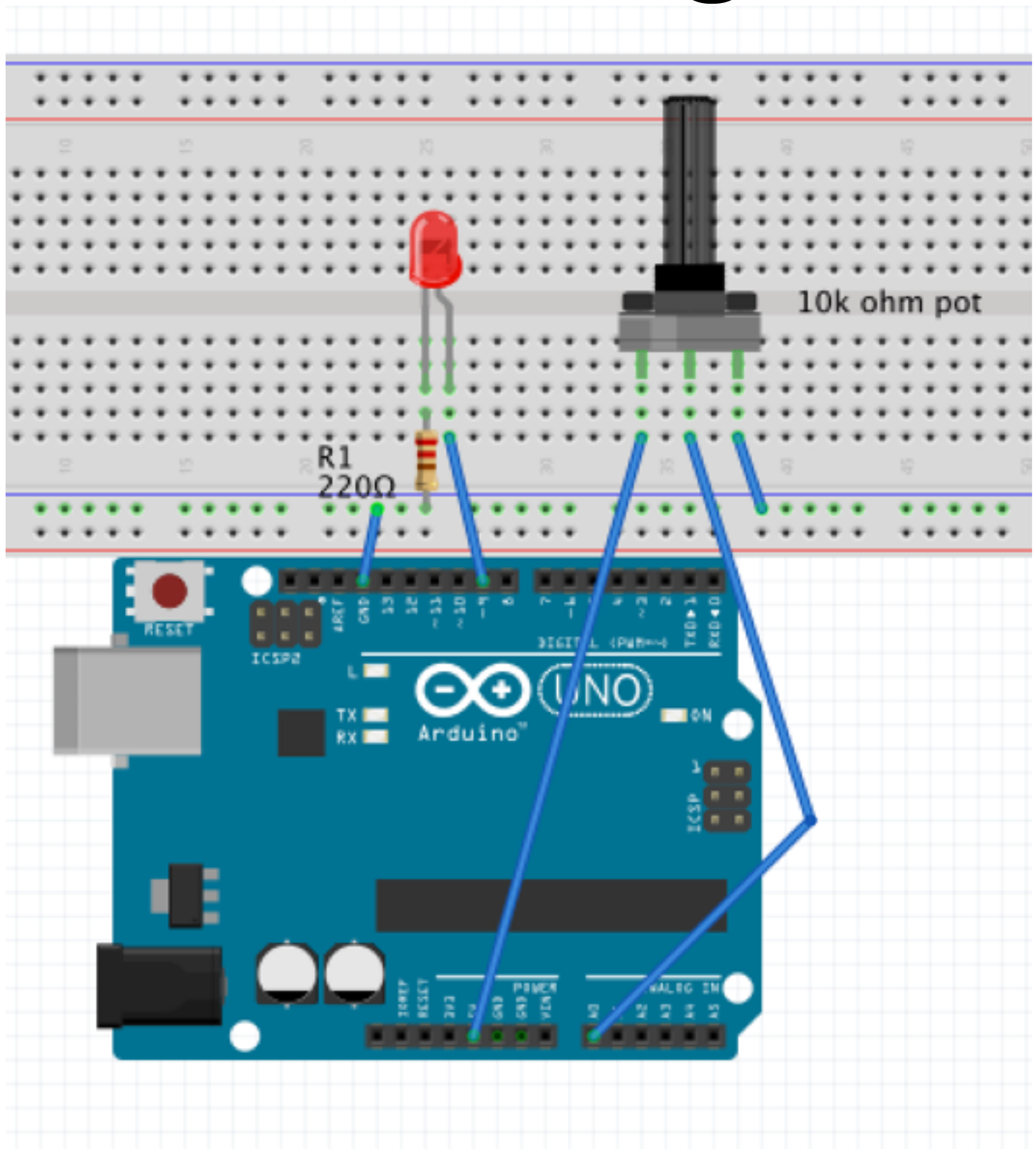
Parts

- Arduino Uno
- USB A-B cable
- Breadboard
- Red LED (or any color)
- 220 ohm resistor
- 10 k ohm potentiometer
- Connecting wires

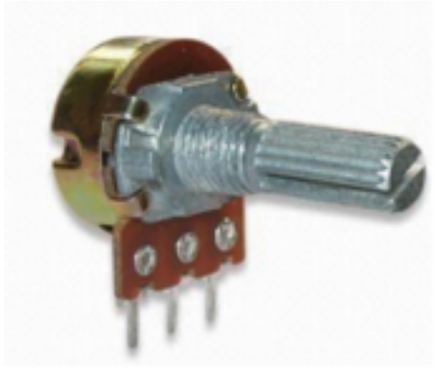
Pulse Width Modulation

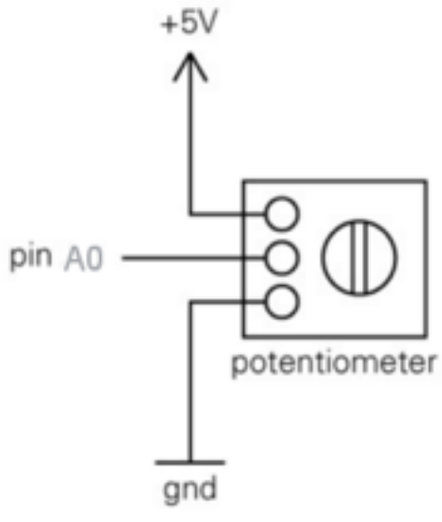


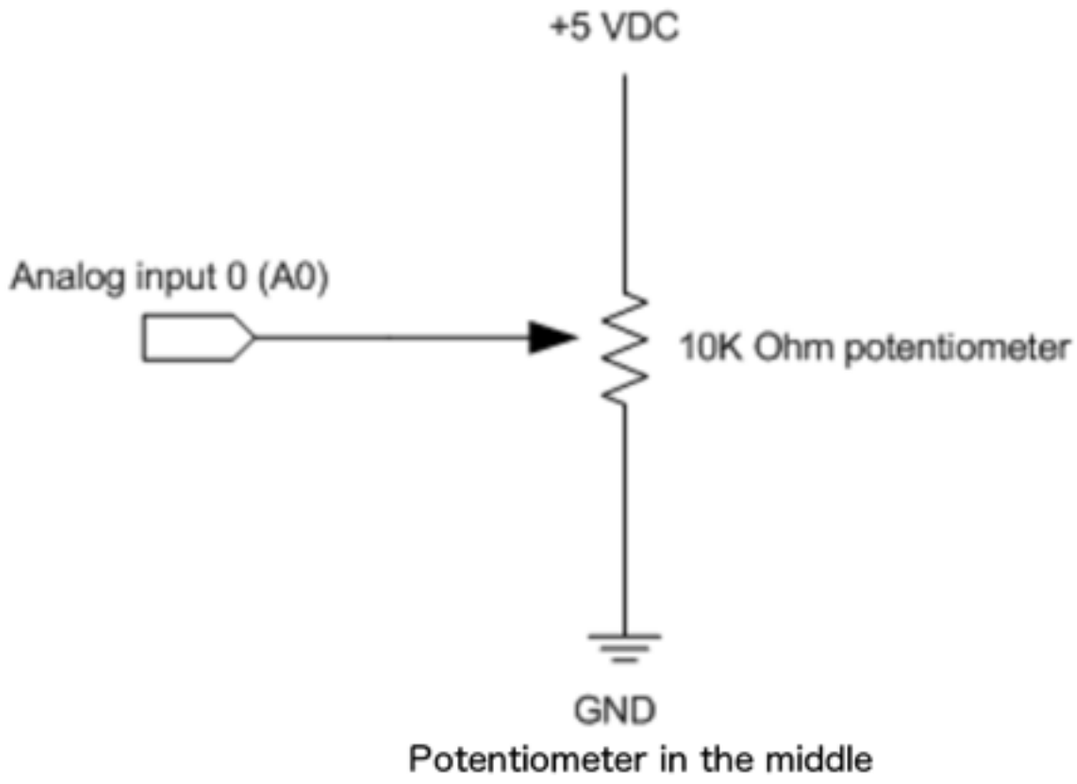
Circuit Diagram



Potentiometer Operation







Potentiometer in the middle

Summary

- In this project you learnt:
  - What is a potentiometer and how it works
  - Pulse Width Modulation (pwm)
  - How to take analog readings and generate pwm output signals
  - Using the analogRead(), analogWrite() and map() functions