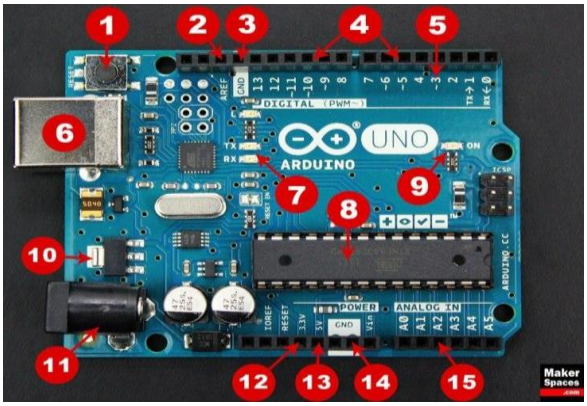

Figure 1.1 Arduino Uno board with important components

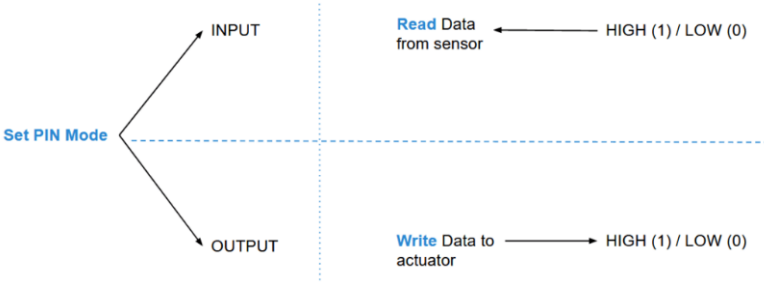

Figure 1.2 Input and output mode of digital pin

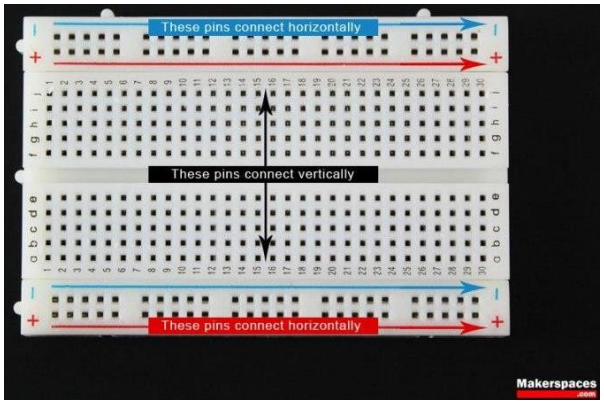

Figure 1.3 Breadboard internal pins connection

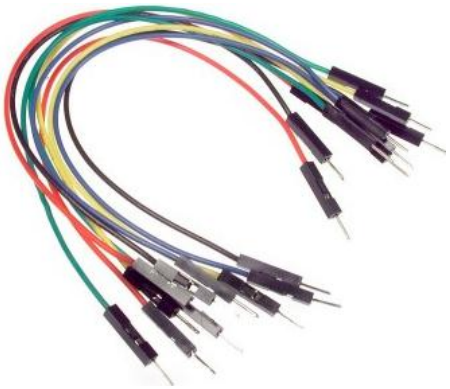

Figure 1.4 Jumper wire

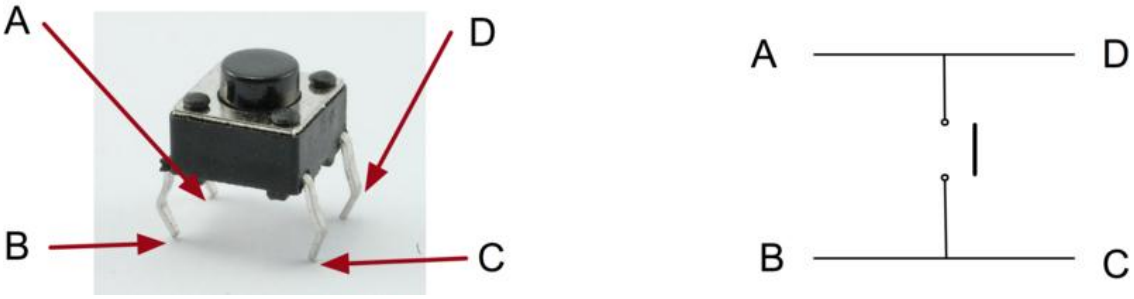

Figure 1.5 Push button switch internal pin connection

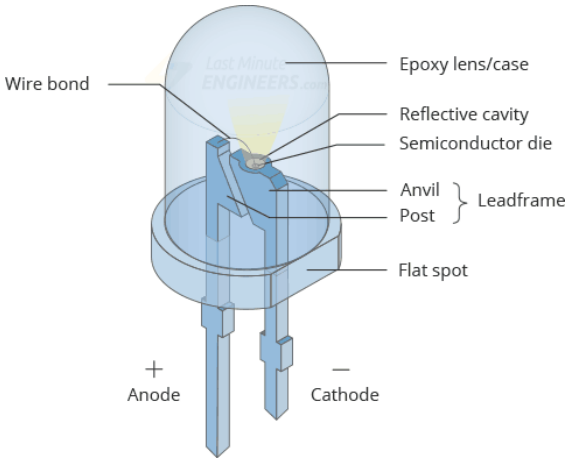

Figure 1.6 LED Schematic

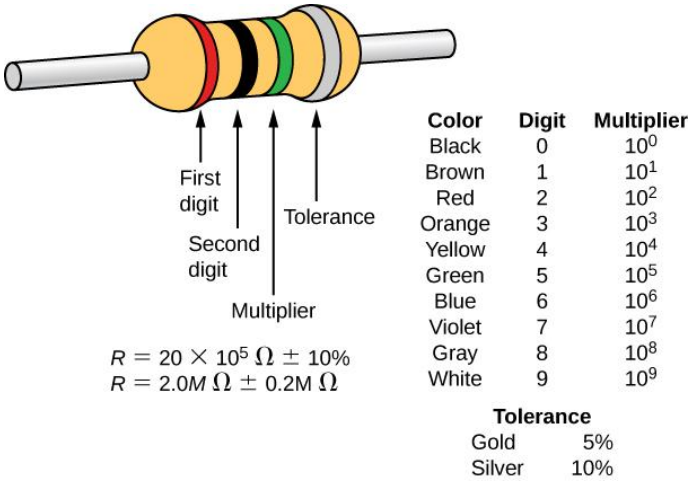

Figure 1.7 Resistor and Its color code

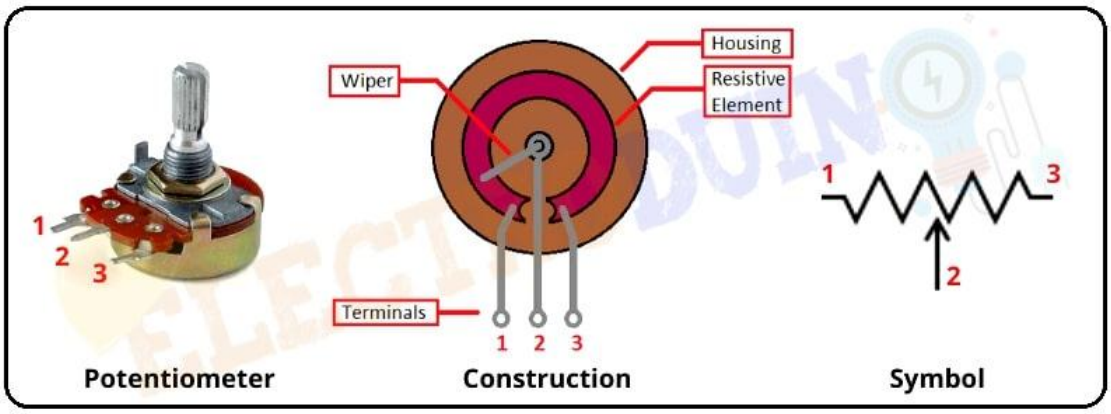

Figure 1.8 Potentiometer and its pin schematic

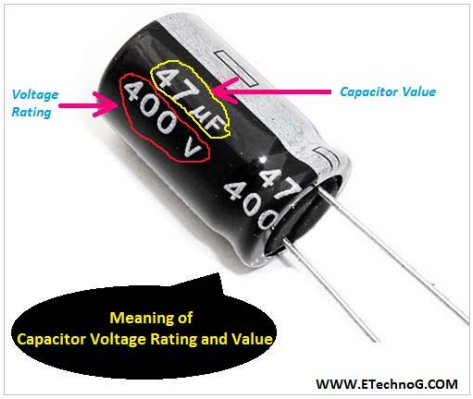

Figure 1.9 Capacitor shown with value and ratings

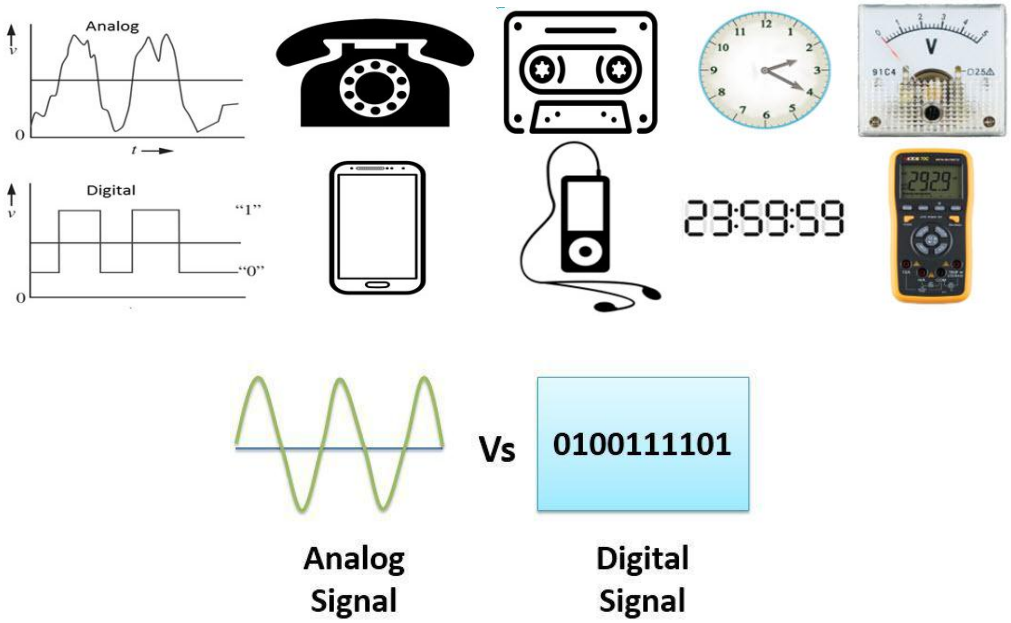

Figure 1.10 Analog and digital signal, device and difference

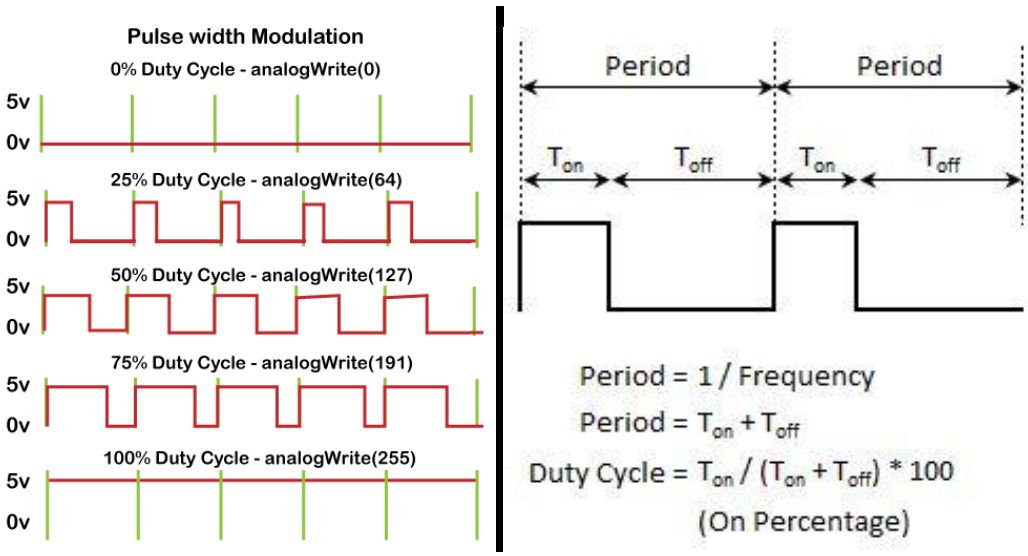

Figure 1.11 PWM and duty cycle calculation

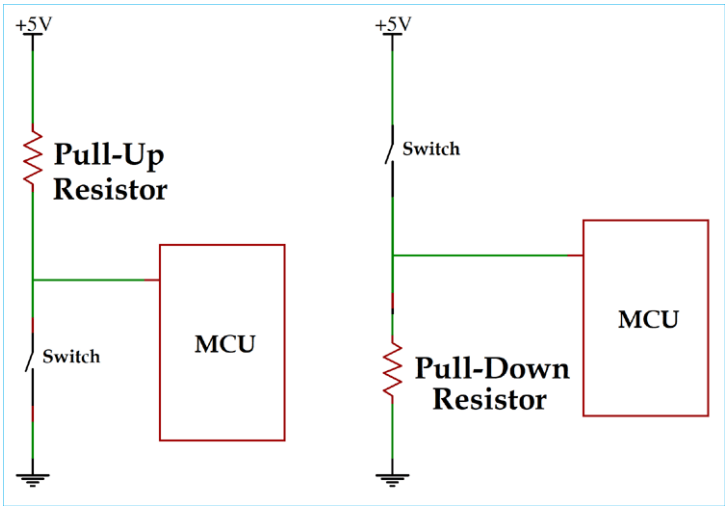

Figure 1.12 Pull up and pull down resistor connection

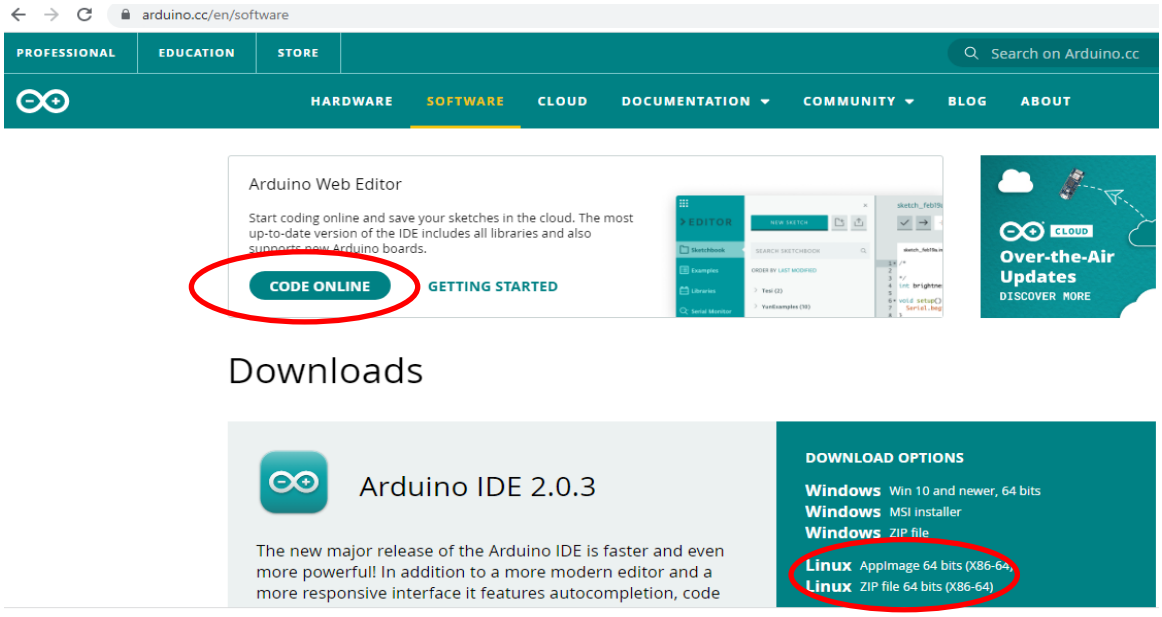

Figure 2.1 Arduino software downloading option

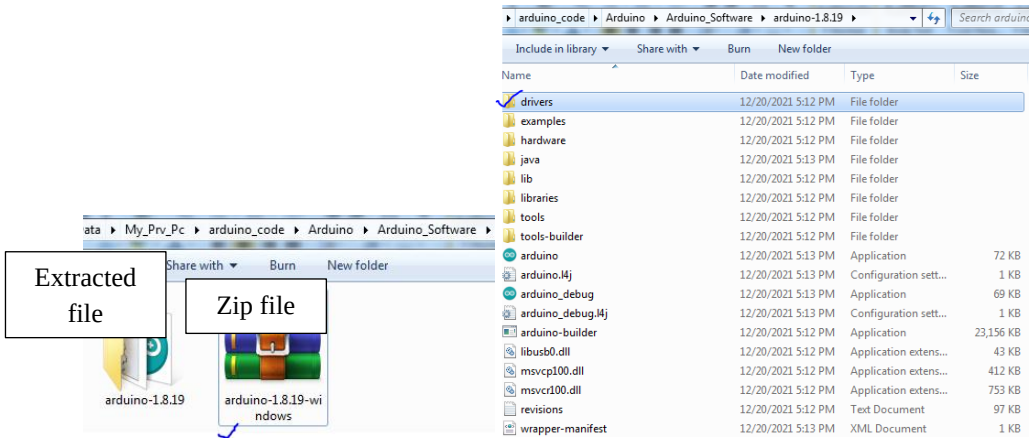

Figure 2.2 Arduino software zip with application and driver

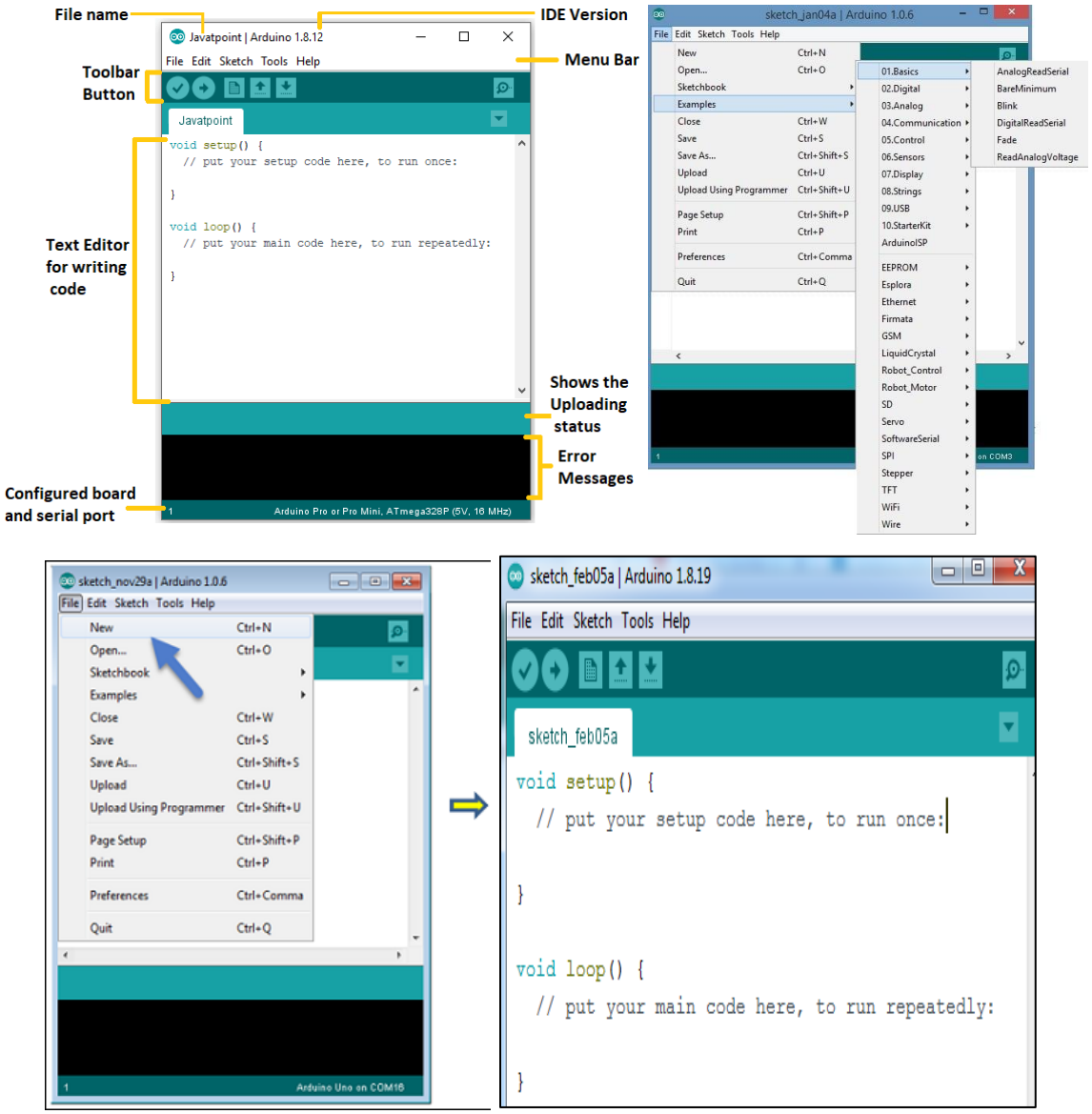

Figure 2.3 Arduino software tools, example and new sketch for coding

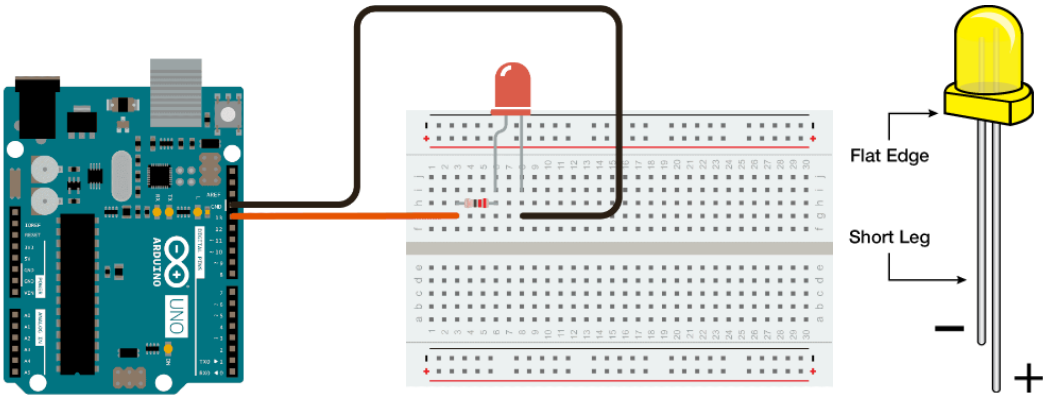

Figure 3.1 Circuit diagram for LED blinking

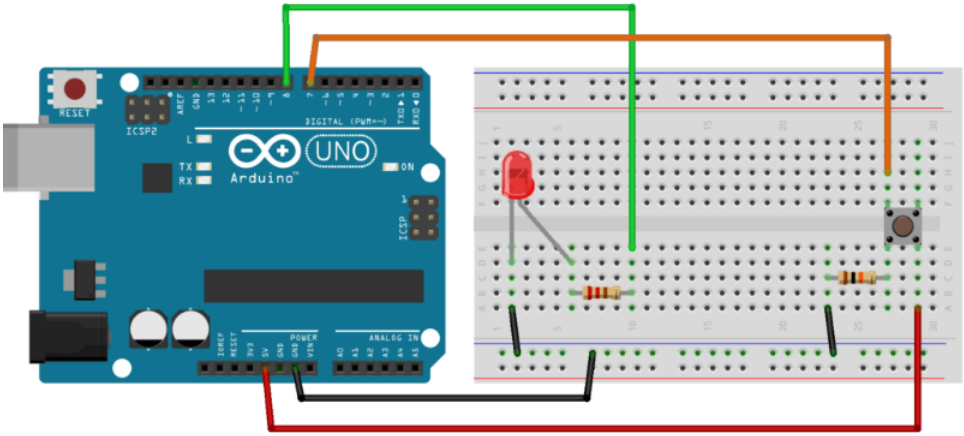

Figure 4.1 Arduino circuit diagram for led blink using external pull down resistor

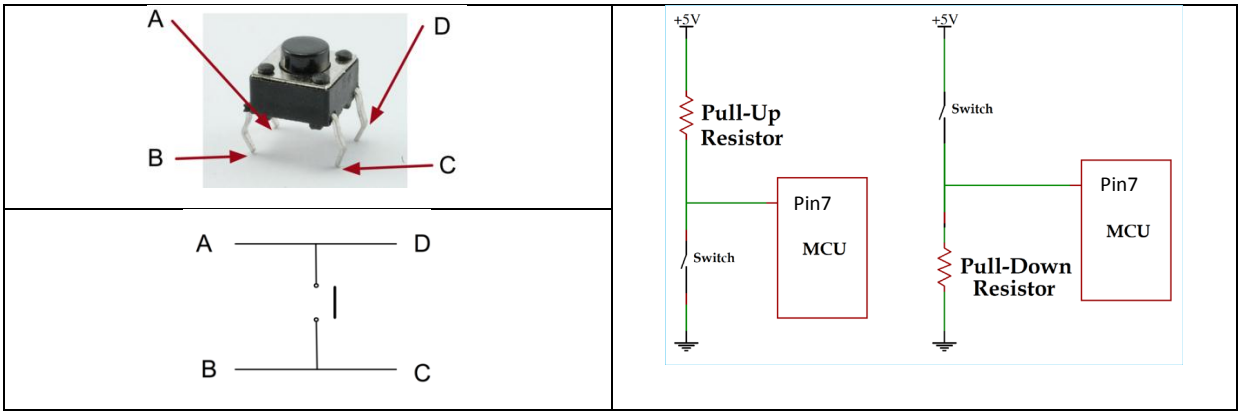

Figure 4.2 (a) Circuit diagram Schematic of Push Button Switch (b) Arduino (MCU) with external pull down resistor (https://roboticsbackend.com/arduino-input_pullup-pinmode/)

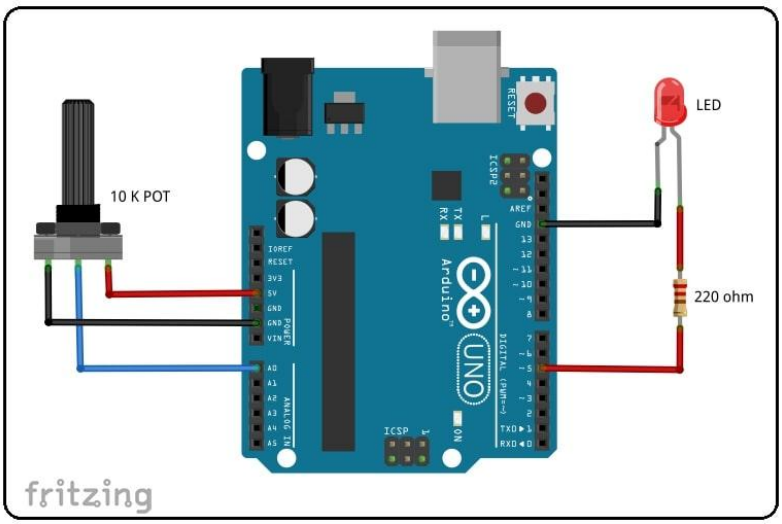

Figure 5.1 Circuit Diagram for LED Brightness Control using Potentiometer (https://www.electroduino.com/led-brightness-control-using-potentiometer/)

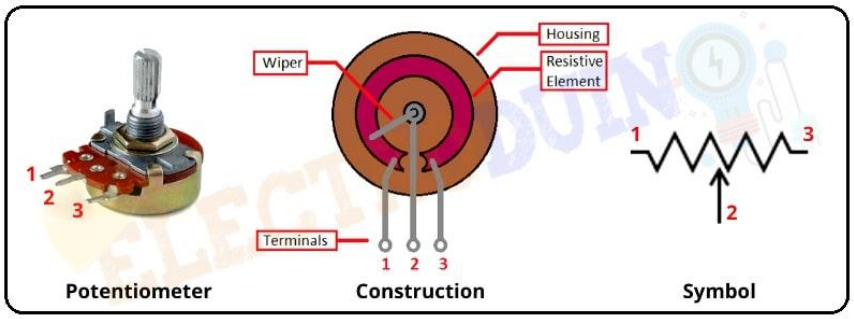

Figure 5.2 Potentiometer internal construction and symbol

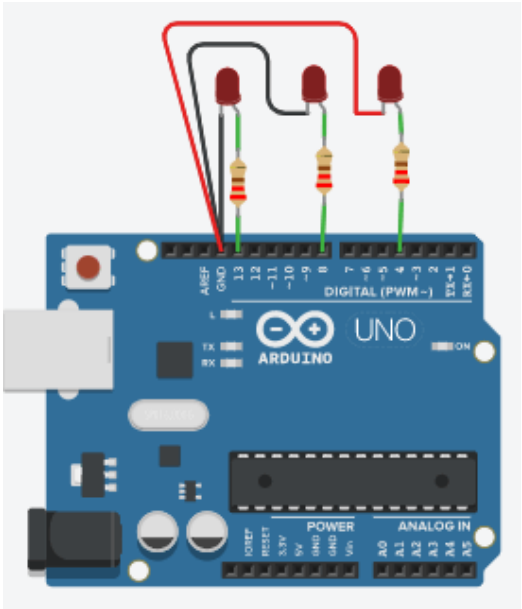

Figure 6.1 Circuit Diagram for blinking multiple LED at same time

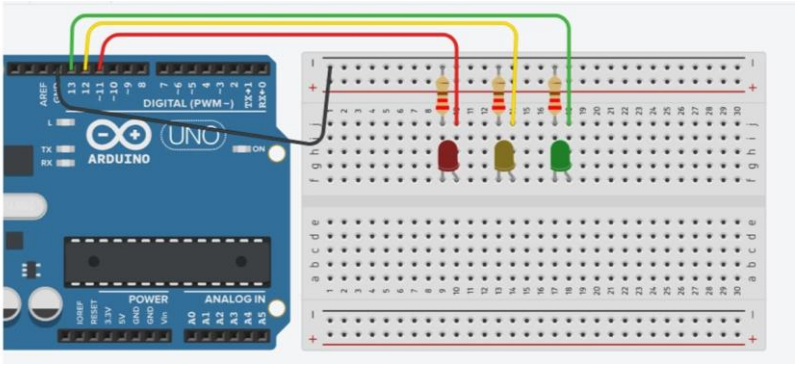

Figure 7.1 Circuit Diagram for scrolling RGB LEDs

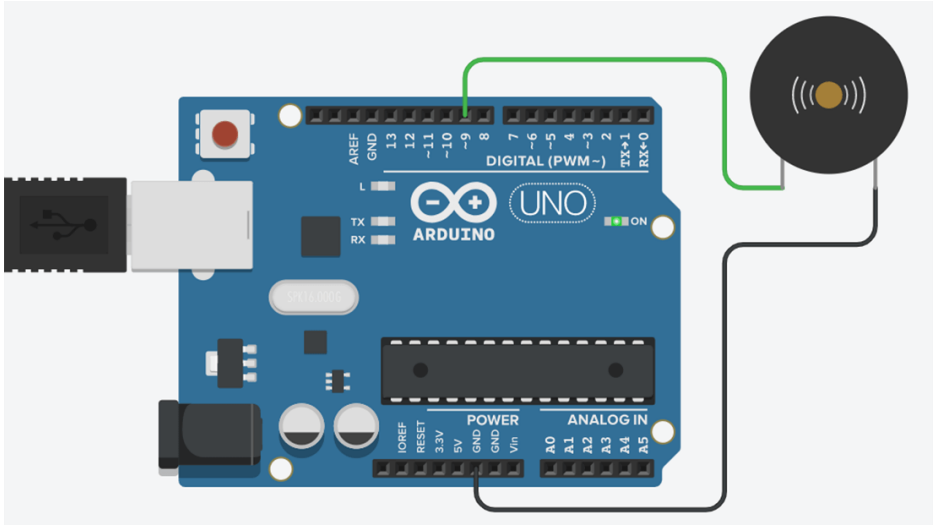

Figure 8.1 Circuit Diagram for Piezo buzzer
(https://www.electrovigyan.com/arduino/piezo-buzzer/)

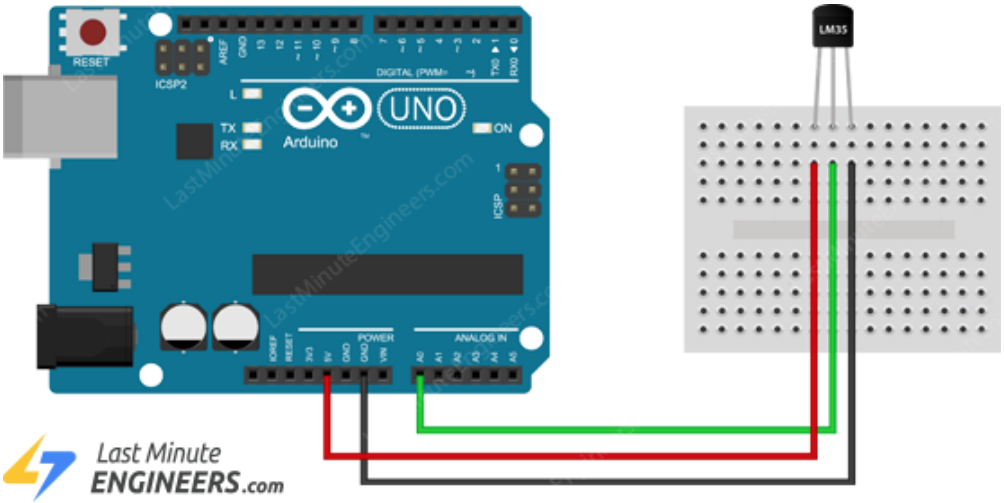

Figure 9.1 Circuit Diagram for temperature sensor using LM35

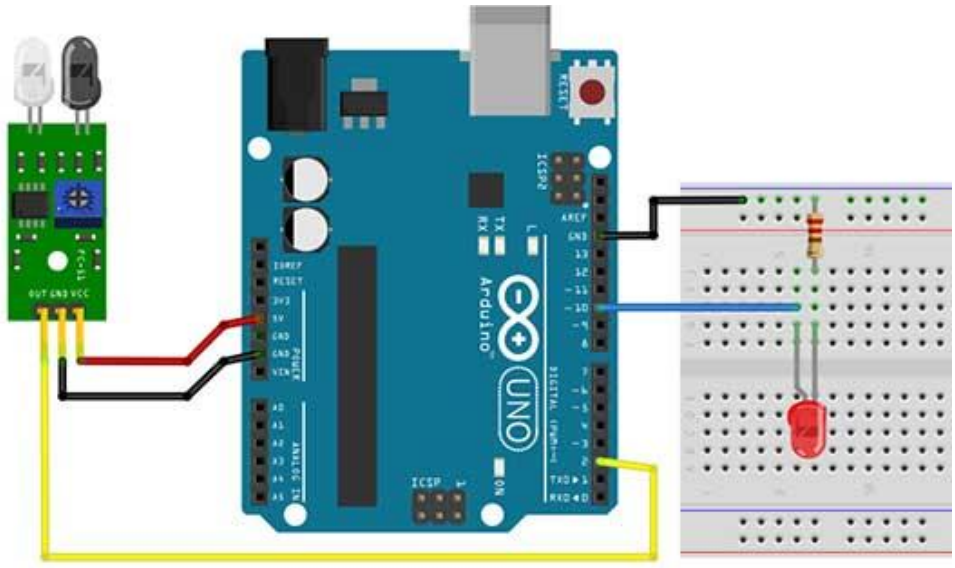

Figure 10.1 Circuit Diagram for Obstacle Avoidance Sensor using Infrared IR Sensor

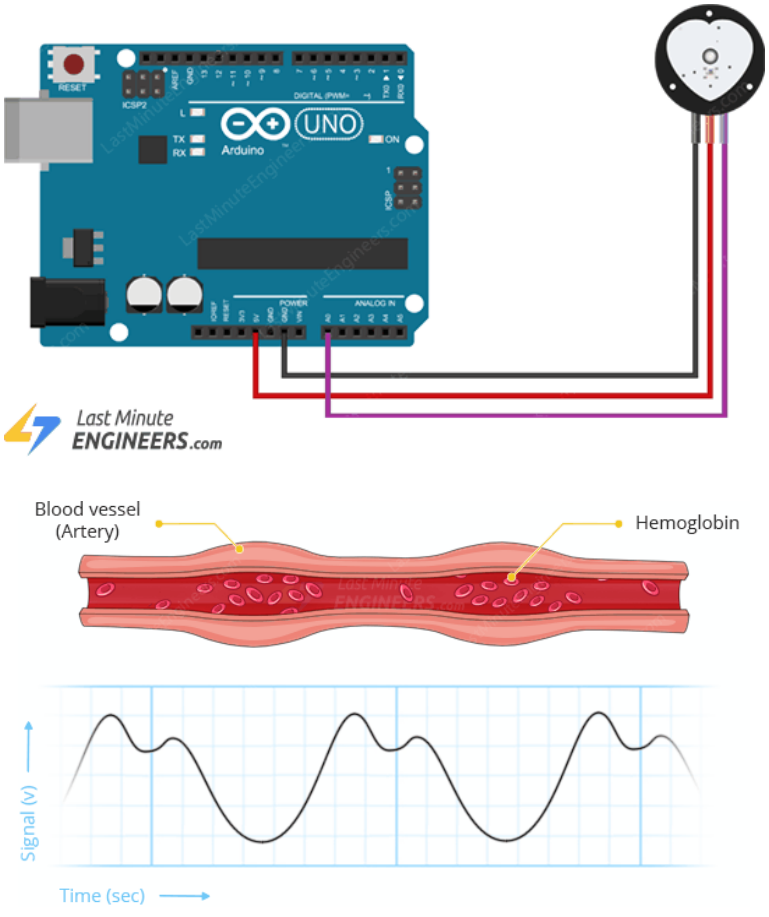

Figure 11.1 Circuit diagram for Arduino heart beat send and its working principle

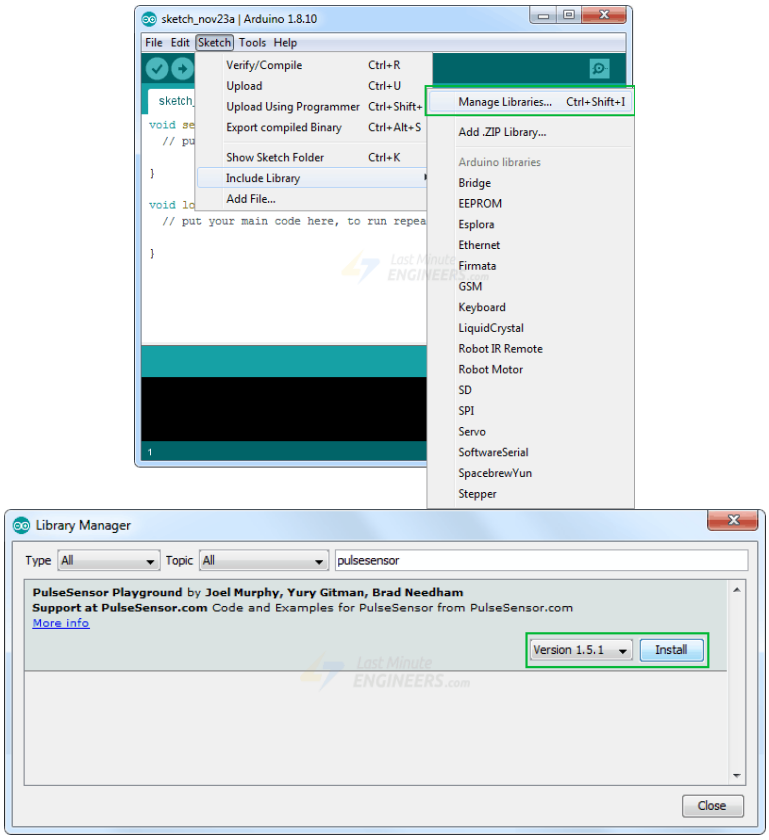

Figure 11.2 Library Installation

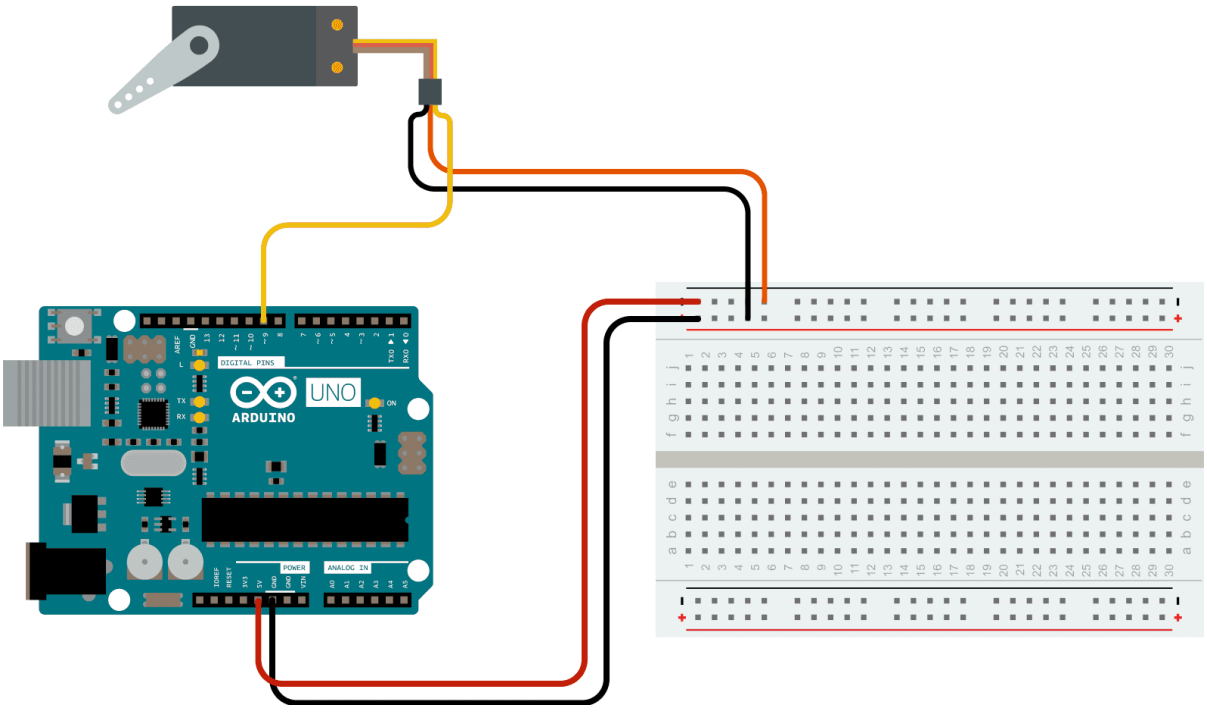

Figure 12.1 Circuit diagram for servo back and forth range of motion

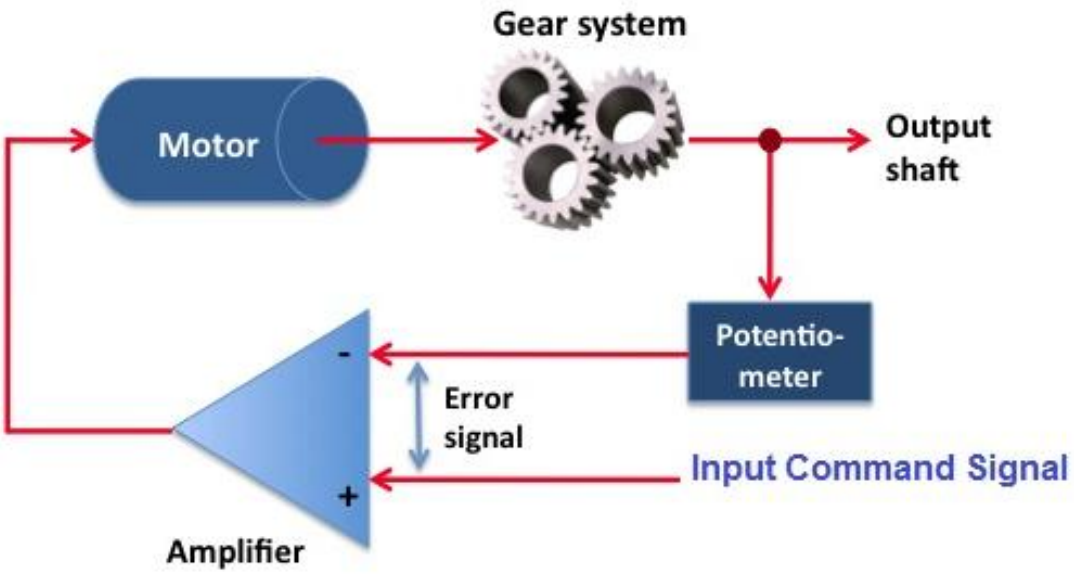

Figure 13.1 Servo motor and its mechanism

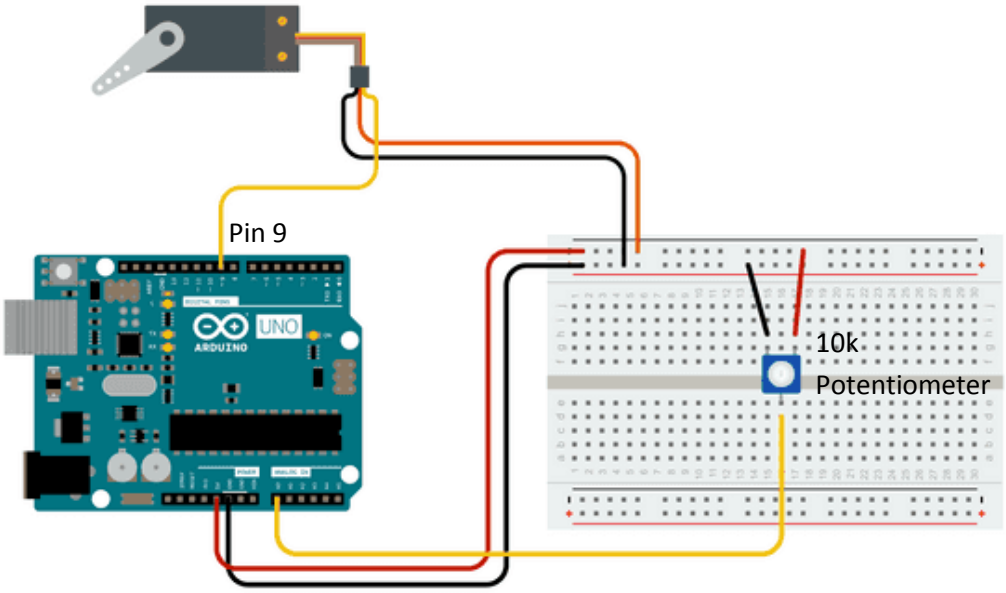

Figure 13.2 Circuit diagram for servo motor control with Arduino

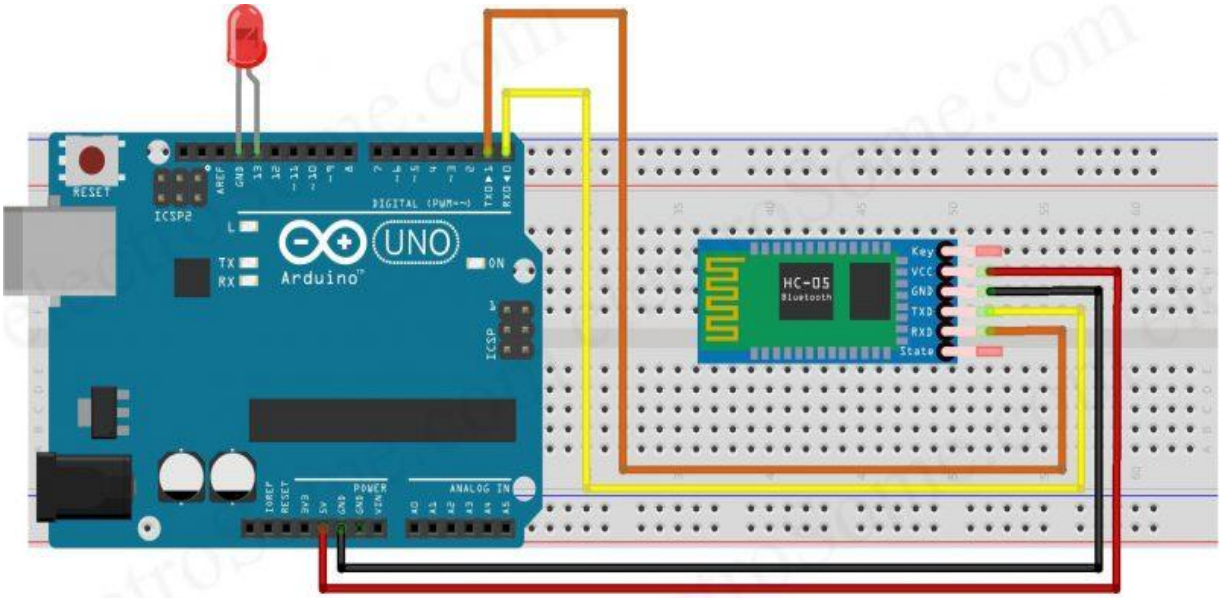

Figure 14.1 Circuit diagram for Bluetooth module with Arduino

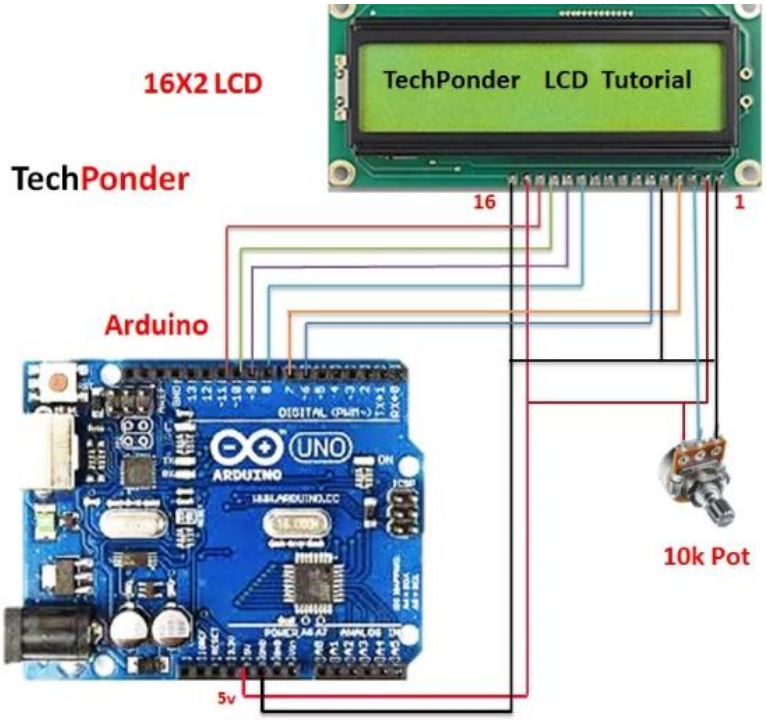

Figure 15.1 Circuit diagram for LCD display