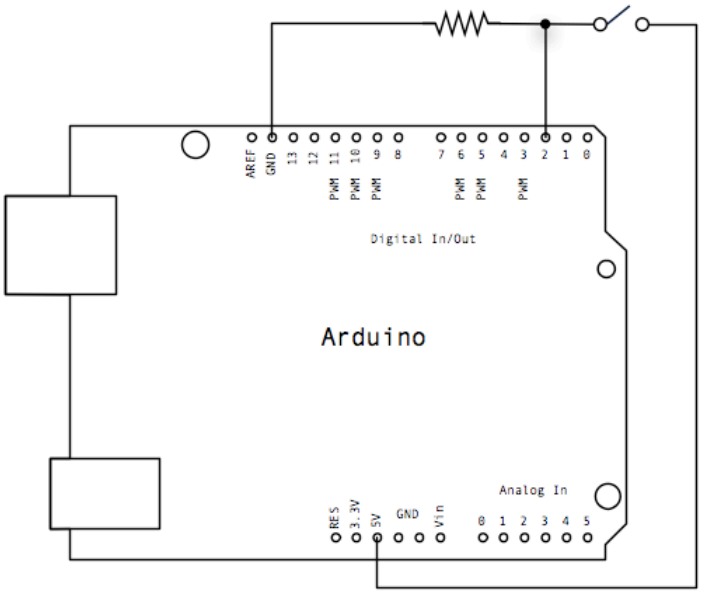
Trigger Switch

1. Basic Button



TriggerSwitch

```
const int buttonPin = 2;
void setup() {

 Serial.begin(9600);
 pinMode(buttonPin, INPUT);

}

void loop() {
  int buttonState = digitalRead(buttonPin);
  Serial.println(buttonState);

}
```

2. Get button state

TriggerSwitch

```
const int buttonPin = 2;


bool pressing = false;

void setup() {

 Serial.begin(9600);
 pinMode(buttonPin, INPUT);

}

void loop() {
  int buttonState = digitalRead(buttonPin);

  if(pressing == false){

    if(buttonState == 1){
      pressing = true;
      Serial.println("Press");
    }

  }else{

    if(buttonState == 0){
      pressing = false;
      Serial.println("Release");
    }

  }

}
```

Fix error from button by add shot delay

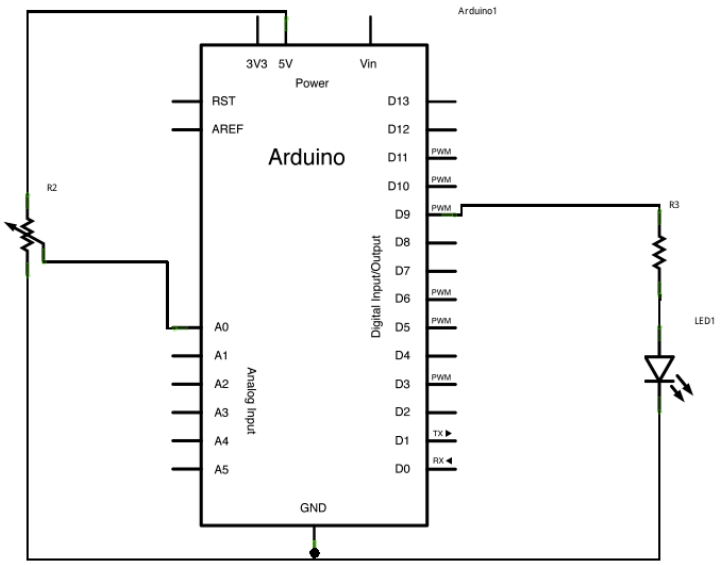
```
void loop() {
  int buttonState = digitalRead(buttonPin);

  if(pressing == false){

    if(buttonState == 1){
      pressing = true;
      Serial.println("Press");
      delay(100);
    }

  }else{

    if(buttonState == 0){
      pressing = false;
      Serial.println("Release");
      delay(100);
    }

  }

}
```

3. Add LED State

```
bool ledState = false;



void loop() {
  int buttonState = digitalRead(buttonPin);

  if(pressing == false){

    if(buttonState == 1){
      pressing = true;
      Serial.println("Press");

      ledState = !ledState;

      delay(100);
    }

  }else{

    if(buttonState == 0){
      pressing = false;
      Serial.println("Release");
      delay(100);
    }

  }

  digitalWrite(ledPin, ledState);

}
```

Down light

Arduino has an `analogRead` range from 0 to 1023, and an `analogWrite` range only from 0 to 255



1. analogWrite

```
const int analogOutPin = 9;

void setup() {
  Serial.begin(9600);
  pinMode(analogOutPin, OUTPUT);

}
```

```
void loop() {

  analogWrite(analogOutPin, 0);
  delay(1000);

  analogWrite(analogOutPin, 85);
  delay(1000);

  analogWrite(analogOutPin, 85);
  delay(1000);

  analogWrite(analogOutPin, 170);
  delay(1000);

  analogWrite(analogOutPin, 255);
  delay(1000);
}
```

2. analogRead

```
const int analogOutPin = 9;
const int analogInput = A0;

int sensorValue = 0;

void setup() {
  Serial.begin(9600);
  pinMode(analogOutPin, OUTPUT);
  pinMode(analogInput, INPUT);

}

void loop() {
  sensorValue = analogRead(analogInput);
  Serial.println(sensorValue);

}
```

3. Mapping value

```
int mapValue = 0;



int myMap(int sensor, int sMin, int sMax, int outMin, int outMax){
  int valuse = 0;

  double deltaIn = sMax - sMin;
  double deltaOut = outMax - outMin;

  double k = deltaOut/deltaIn;

  valuse = (k * sensor) + outMin;

  return valuse;
}




 void loop() {
   sensorValue = analogRead(analogInput);

   mapValue = myMap(sensorValue, 0, 1023, 0, 255);
   Serial.println(mapValue);


 }
```

4. Combine code

```
void loop() {
  sensorValue = analogRead(analogInput);

  mapValue = myMap(sensorValue, 0, 1023, 0, 255);

  analogWrite(analogOutPin, mapValue);

  Serial.println(mapValue);


}
```