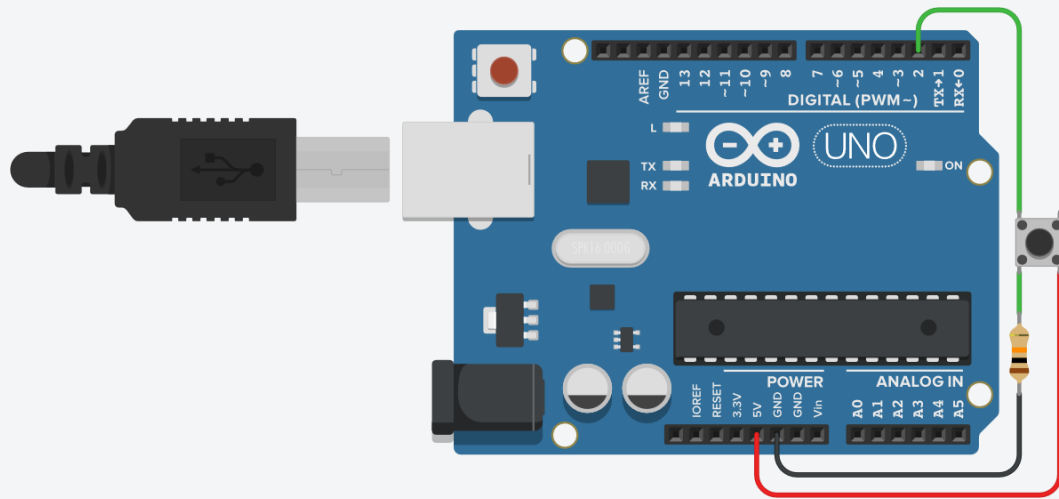


voorbeelden

Enkele eenvoudige uitgewerkte voorbeelden

Drukknop met pulldown



```
int buttonState = 0;
```

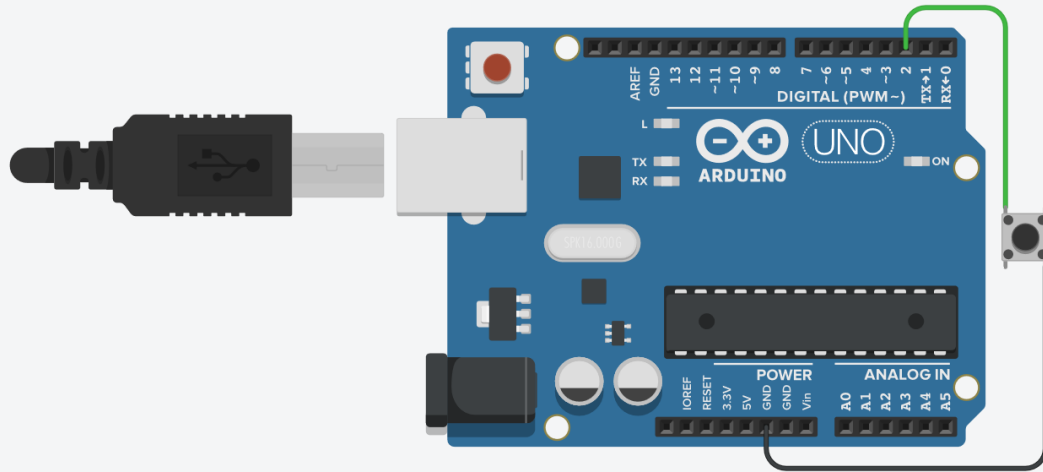
```
void setup()
```

```
{  
  pinMode(2, INPUT);  
  pinMode(13, OUTPUT);  
}
```

```
void loop()
```

```
{  
  // lees de stand van de drukknoop  
  buttonState = digitalRead(2);  
  // controleer of knop is ingedrukt  
  // indien ja is buttonstate=HIGH  
  if (buttonState == HIGH) {  
    // schakel led in  
    digitalWrite(13, HIGH);  
  } else {  
    // doof led  
    digitalWrite(13, LOW);  
  }  
  delay(10); // kleine vertraging  
}
```

Drukknop met interne pullup

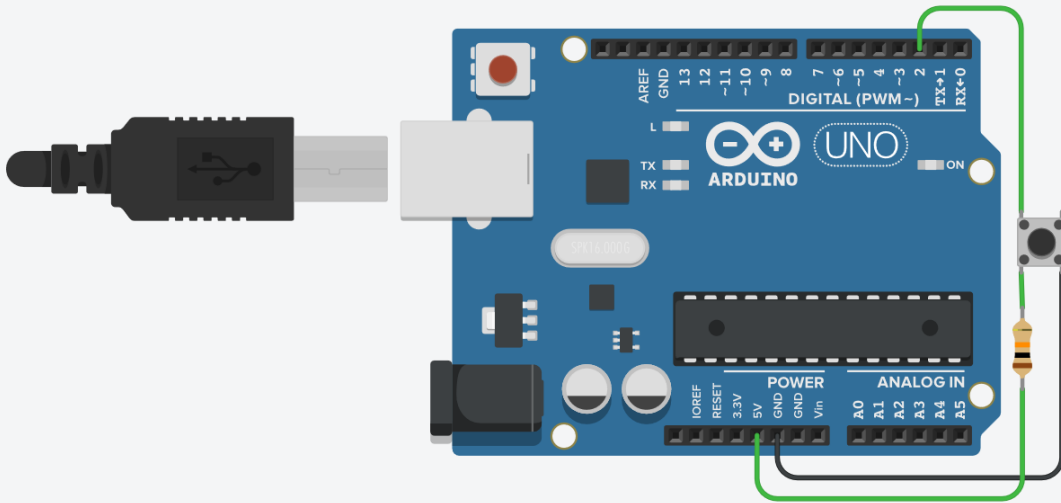


```
int buttonState = 0;
```

```
void setup()  
{  
  pinMode(2, INPUT_PULLUP);  
  pinMode(13, OUTPUT);  
}
```

```
void loop()  
{  
  // lees de stand van de drukknoop  
  buttonState = digitalRead(2);  
  // controleer of knop is ingedrukt  
  // indien ja is buttonstate=LOW  
  if (buttonState == HIGH) {  
    // schakel led in  
    digitalWrite(13, LOW);  
  } else {  
    // doof led  
    digitalWrite(13, HIGH);  
  }  
  delay(10); // kleine vertraging  
}
```

Drukknop met pullup weerstand

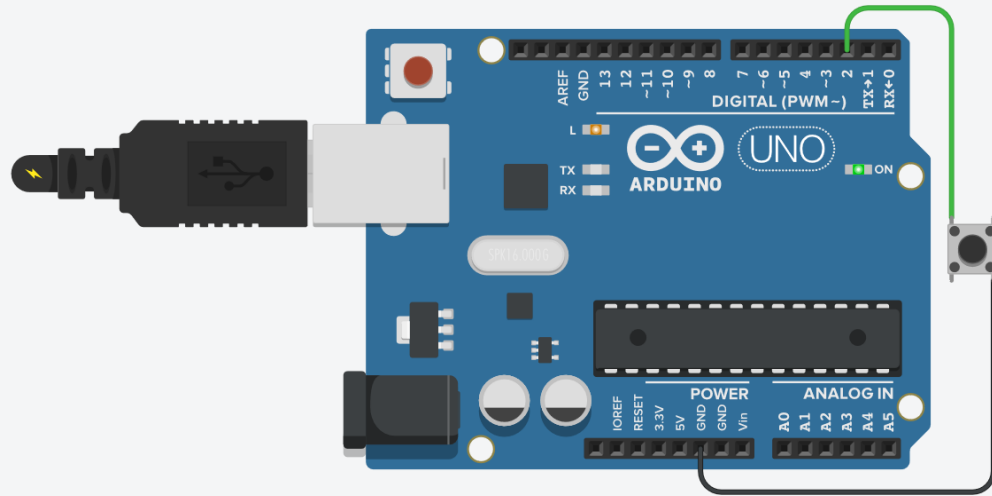


```
int buttonState = 0;
```

```
void setup()  
{  
  pinMode(2, INPUT);  
  pinMode(13, OUTPUT);  
}
```

```
void loop()  
{  
  // lees de stand van de drukknoop  
  buttonState = digitalRead(2);  
  // controleer of knop is ingedrukt  
  // indien ja is buttonstate=LOW  
  if (buttonState == HIGH) {  
    // schakel led in  
    digitalWrite(13, LOW);  
  } else {  
    // doof led  
    digitalWrite(13, HIGH);  
  }  
  delay(10); // kleine vertraging  
}
```

Drukknop als schakelaar

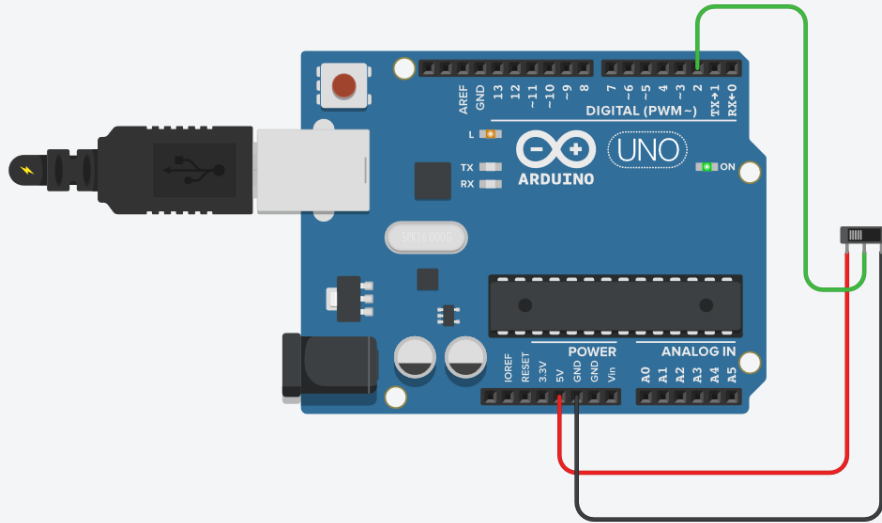


```
int buttonState = 0;  
bool ledState = false;
```

```
void setup()  
{  
  pinMode(2, INPUT_PULLUP);  
  pinMode(13, OUTPUT);  
}
```

```
void loop()  
{  
  // lees de stand van de drukknoop  
  buttonState = digitalRead(2);  
  // controleer of knop is ingedrukt  
  // indien ja is buttonstate=LOW  
  if (buttonState == LOW) {  
    ledState=!ledState;  
    do {  
      buttonState = digitalRead(2);}  
    while(buttonState==LOW);  
  }  
  
  if(ledState) {  
    digitalWrite(13, HIGH);  
  } else {  
    digitalWrite(13, LOW);  
  }  
}
```

Schuifschakelaar



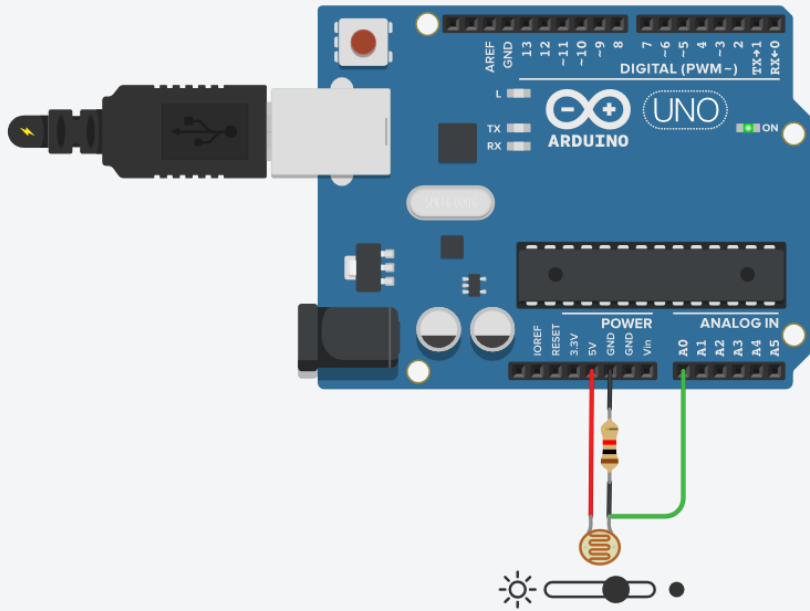
INPUT of INPUT_PULLUP?
beter, slechter of speelt geen rol?

```
int buttonState = 0;
```

```
void setup()  
{  
  pinMode(2, INPUT_PULLUP);  
  pinMode(13, OUTPUT);  
}
```

```
void loop()  
{  
  // lees de stand van de drukknop  
  buttonState = digitalRead(2);  
  if (buttonState == LOW) {  
    digitalWrite(13,LOW);  
  } else {  
    digitalWrite(13,HIGH);  
  }  
}
```

LDR als schakelaar



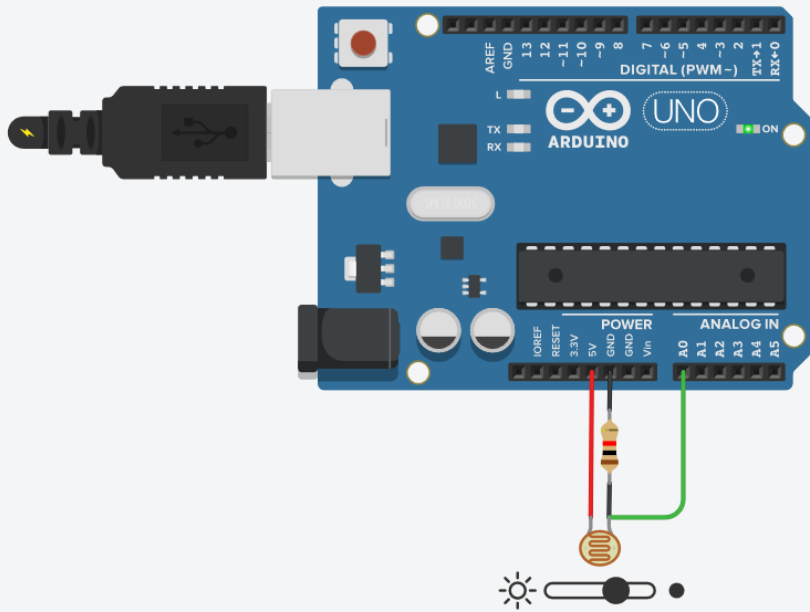
In werkelijkheid: ruis op waarde.

Oplossing? Hysteresis.

```
int buttonState = 0;
void setup()
{
  pinMode(2, INPUT_PULLUP);
  pinMode(13, OUTPUT);
}

void loop()
{
  // lees de stand van de drukknop
  buttonState = digitalRead(2);
  if (buttonState == LOW) {
    digitalWrite(13,LOW);
  } else {
    digitalWrite(13,HIGH);
  }
}
```

LDR als schakelaar

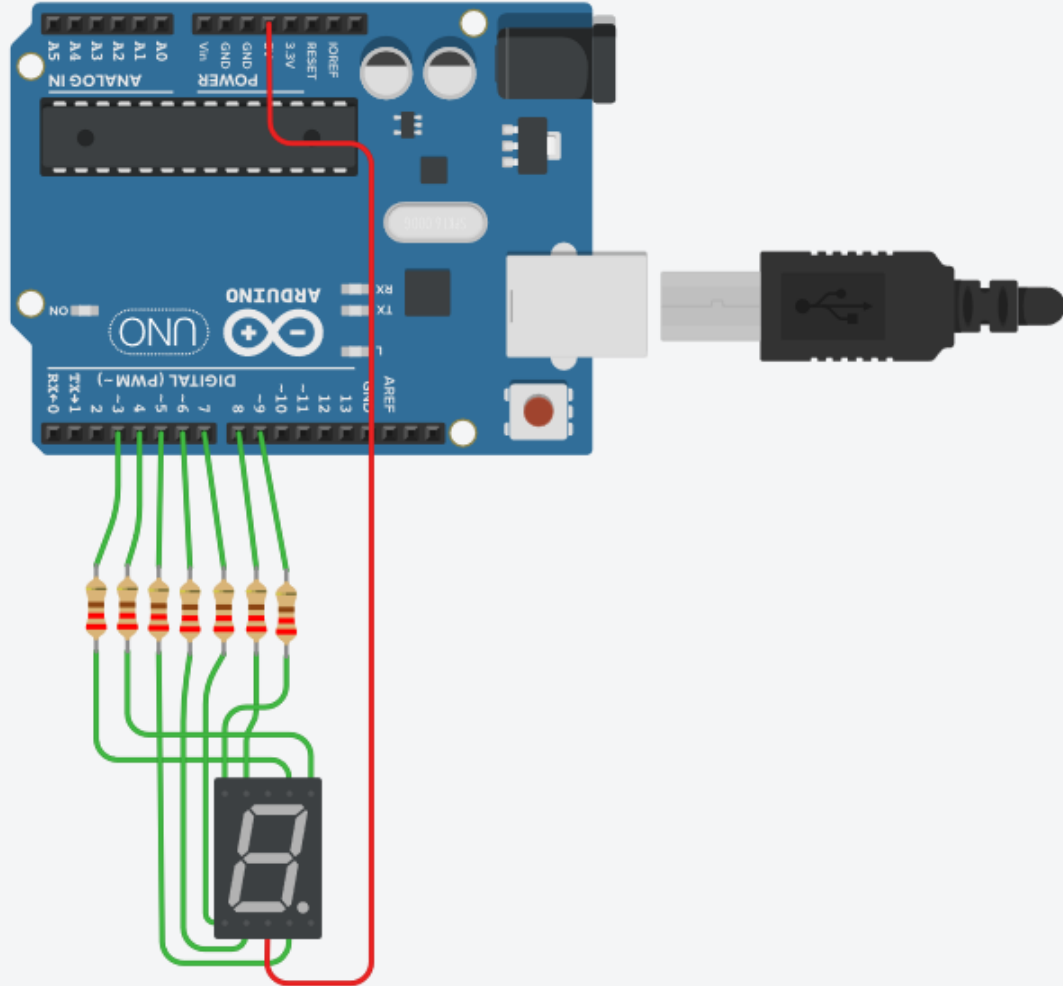


Wat is de weerstandswaarde van de LDR?
Hoe is dit te bepalen?

```
int waarde=0;
int drempel=512;
int buffer=10;
void setup()
{
  pinMode(A0, INPUT);
  pinMode(13, OUTPUT);
}

void loop()
{
  // lees de waarde van de analoge ingang
  waarde = analogRead(A0);
  // is de waarde groter dan de drempelwaarde (donker)
  if (waarde > drempel+buffer) {
    // lamp aan
    digitalWrite(13,HIGH);
  }
  if (waarde < drempel-buffer) {
    // lamp uit
    digitalWrite(13,LOW);
  }
}
```


Animatie op 7-segment



```
int pos[] = {3,4,9,7,6,5,9,8};
void setup()
{
  for(int i=3; i<=9;i++) {
    pinMode(i, OUTPUT);
  }
  for(int i=3; i<=9;i++) {
    digitalWrite(i,HIGH);
  }
}

void loop()
{
  for(int i=0; i<8;i++) {
    digitalWrite(pos[i], LOW);
    delay(250);
    digitalWrite(pos[i], HIGH);
  }
}
```