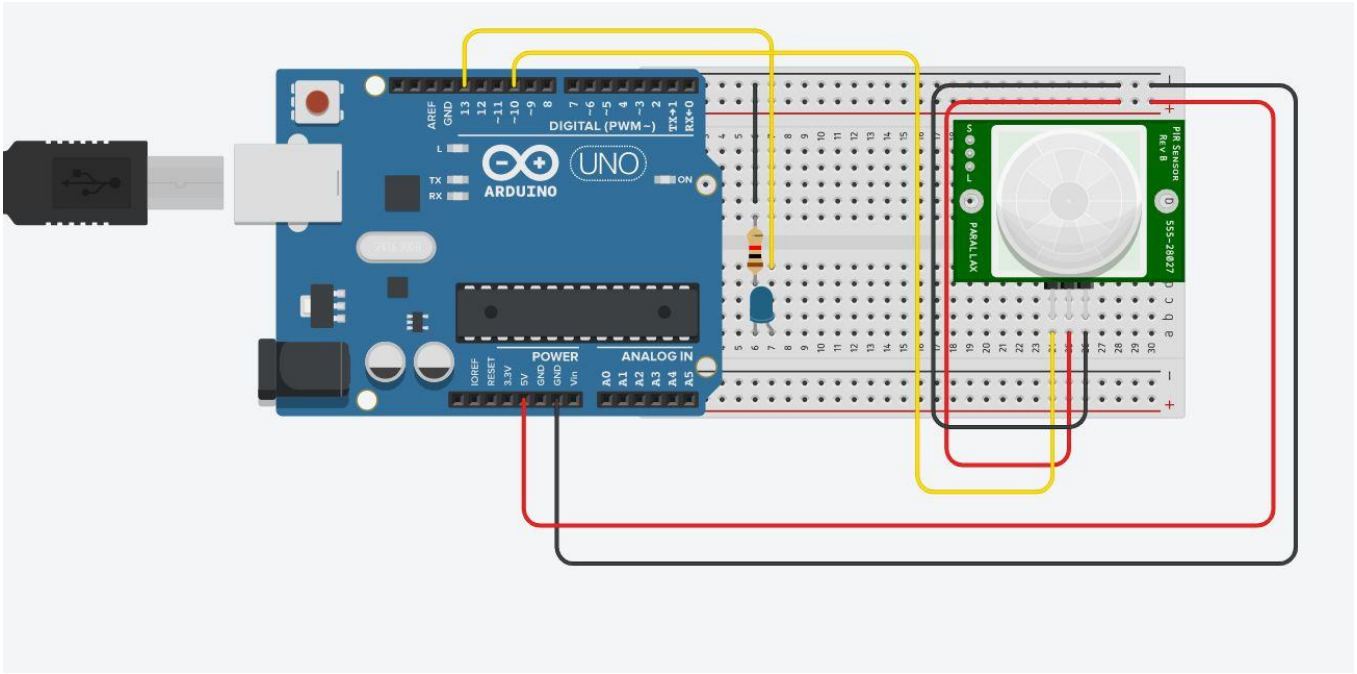
MODUL AJAR - GATH 5

Robotics Community UPN Veteran Jawa Timur

TAHUN AJARAN 2020/2021

MEKATRONIKA - PROGRAM - MENFO



Gambar 1. Rangkaian Pir LED

Code Pir LED :

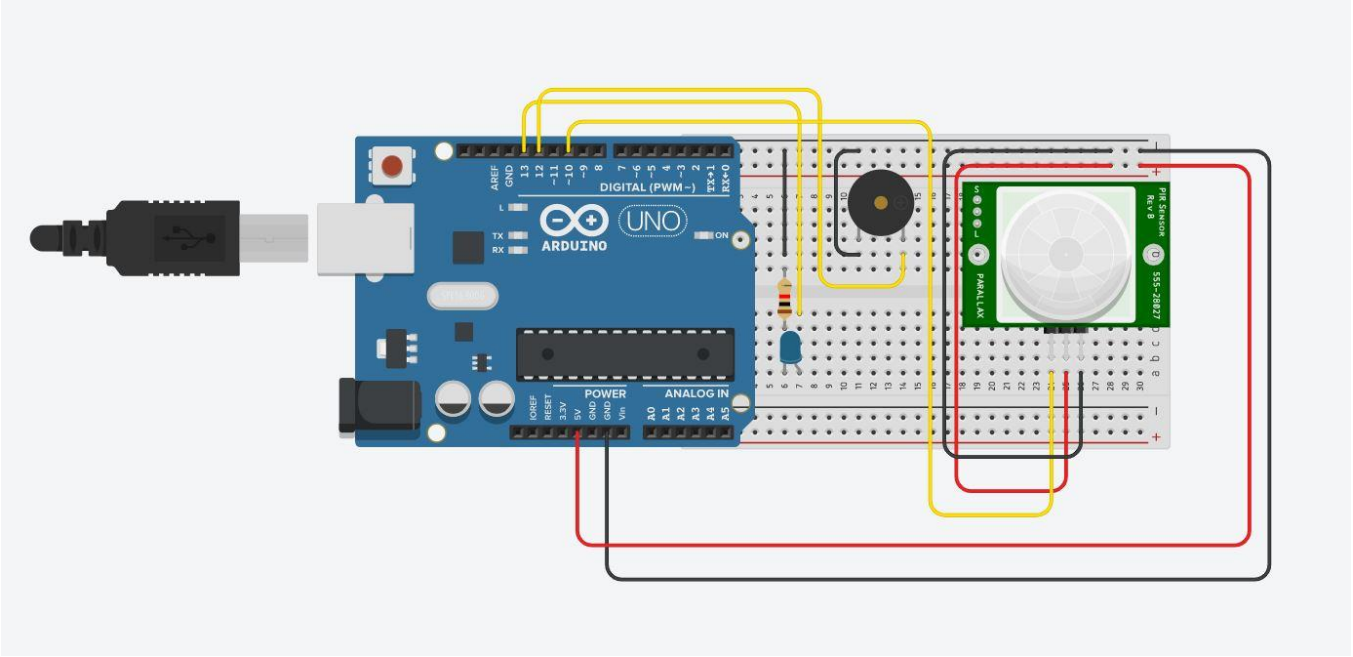
```
//deklarasi variabel global
const int pir = 10; //pin pir
const int led = 13; //pin led

//set pir -> netral = 0
int pirsetvalue = 0;

//fungsi diproses 1 kali
void setup() {
  Serial.begin(9600); //memulai serial begin port 9600
  pinMode(led, OUTPUT); //inisialisasi led
  pinMode(pir, INPUT); //inisialisasi pir
}

//fungsi diproses berkali-kali
void loop() {
  pirsetvalue = digitalRead(pir); // membaca analog pir pin
  Serial.println(pirsetvalue); // serial monitoring

  if (pirsetvalue == 1){ // jika pirset respon maka led nyala
    digitalWrite(led, HIGH); //led nyala
    delay(100); // jeda waktu
  }
  else { // selain itu semua maka led mati
    digitalWrite(led, LOW); // led mati
    delay(100); // jeda waktu
  }
}
```



Gambar 2. Rangkaian Pir LED Buzzer

Code Pir LED Buzzer :

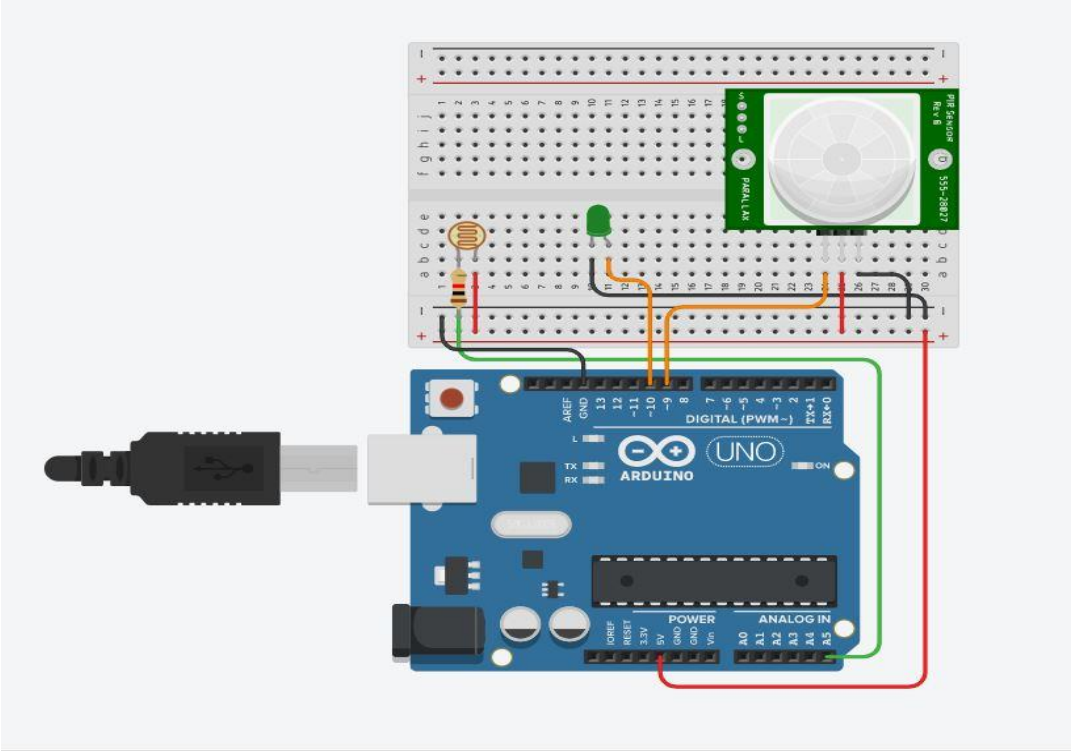
```
//deklarasi variabel global
const int pir = 10; //pin pir
const int led = 13; //pin led
const int buzzer = 12; //pin buzzer

//set pir -> netral = 0
int pirsetvalue = 0;

//fungsi diproses 1 kali
void setup() {
  Serial.begin(9600); //memulai serial begin port 9600
  pinMode(led, OUTPUT); //inisialisasi led
  pinMode(pir, INPUT); //inisialisasi pir
  pinMode(buzzer, OUTPUT); //inisialisasi buzzer
}

//fungsi diproses berkali-kali
void loop() {
  pirsetvalue = digitalRead(pir); // membaca analog pir pin
  Serial.println(pirsetvalue); // serial monitoring

  if (pirsetvalue == 1){ // jika pirset respon maka led + buzzer nyala
    digitalWrite(led, HIGH); //led nyala
    tone(buzzer,100); // buzzer nyala
    delay(100); // jeda waktu
  }
  else { // selain itu semua maka led + buzzer mati
    digitalWrite(led, LOW); // led mati
    noTone(buzzer); // buzzer mati
    delay(100); // jeda waktu
  }
}
```



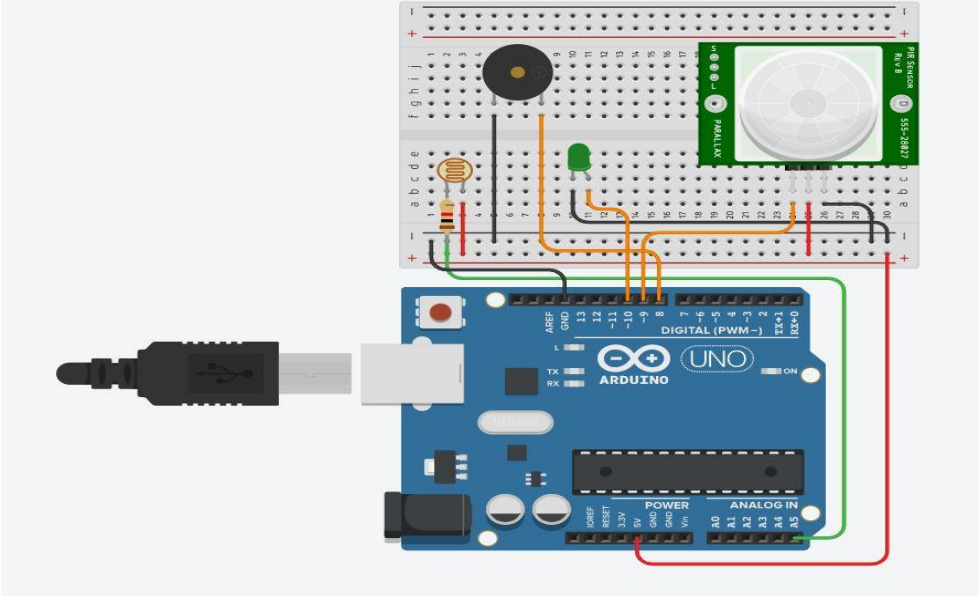
Gambar 3. Rangkaian Pir Photoresistor LED

Code Pir Photoresistor LED :

```
// deklarasi variabel global
const int pir = 9; // pin pir
const int led = 10; // pin led
const int ldr = 5; // pin pir
//set pir -> netral = 0
int pirsetvalue = 0;
//set ldr -> netral = 0
int ldrsetvalue = 0;

void setup(){
  Serial.begin(9600); // memulai serial begin port 9600
  pinMode(led, OUTPUT); // inisialisasi led
  pinMode(pir, INPUT); // inisialisasi pir
  pinMode(ldr, INPUT); // inisialisasi ldr
}
void loop(){
  ldrsetvalue = analogRead(ldr); // membaca analog ldr pin
  Serial.println(ldrsetvalue); // serial monitoring ldr
  pirsetvalue = digitalRead(pir); // membaca analog pir pin
  //Serial.println(pirsetvalue); // serial monitoring pir

  if (ldrsetvalue > 200){ // jika ldrset keadaan terang -> dianalogikan siang
          digitalWrite(led, LOW); // led mati
    delay(100); // jeda waktu
  }
  else if (ldrsetvalue < 200){ // jika ldrset keadaan gelap -> dianalogikan menjelang malam/malam
    digitalWrite(led, LOW); // led mati
    delay(100); // jeda waktu
    if (pirsetvalue == 1){// jika pirset respon maka led nyala
          digitalWrite(led, HIGH); // led nyala
          delay(100); // jeda waktu
    }
  }
  else { // selain itu semua maka led mati
    digitalWrite(led, LOW); // led mati
    delay(100); // jeda waktu
  }
}
```



Gambar 4. Rangkaian Pir Photoresistor LED Buzzer

Code Pir Photoresistor LED Buzzer :

```
// deklarasi variabel global
const int pir = 9; // pin pir
const int led = 10; // pin led
const int ldr = 5; // pin pir
const int buzzer = 8; // pin buzzer

//set pir -> netral = 0
int pirsetvalue = 0;
//set ldr -> netral = 0
int ldrsetvalue = 0;

//fungsi diproses 1 kali
void setup()
{
  Serial.begin(9600); // memulai serial begin port 9600
  pinMode(led, OUTPUT); // inisialisasi led
  pinMode(pir, INPUT); // inisialisasi pir
  pinMode(ldr, INPUT); // inisialisasi ldr
  pinMode(buzzer, INPUT); // inisialisasi buzzer
}

//fungsi diproses berkali-kali
void loop()
{
  ldrsetvalue = analogRead(ldr); // membaca analog ldr pin
  Serial.println(ldrsetvalue); // serial monitoring ldr
  pirsetvalue = digitalRead(pir); // membaca analog pir pin
  //Serial.println(pirsetvalue); // serial monitoring pir

  if (ldrsetvalue > 200){ // jika ldrset keadaan terang -> dianalogikan siang
          digitalWrite(led, LOW); // led mati
    noTone(buzzer); // buzzer mati
    delay(100); // jeda waktu
  }
  else if (ldrsetvalue < 200){ // jika ldrset keadaan gelap -> dianalogikan menjelang malam/malam
    digitalWrite(led, LOW); // led mati
    noTone(buzzer); // buzzer mati
    delay(100); // jeda waktu
    if (pirsetvalue == 1){// jika pirset respon maka led + buzzer nyala
          digitalWrite(led, HIGH); // led nyala
          tone(buzzer, 100); // buzzer nyala
          delay(100); // jeda waktu
    }
  }
  else { // selain itu semua maka led + buzzer mati
    digitalWrite(led, LOW); // led mati
    noTone(buzzer); // buzzer mati
    delay(100); // jeda waktu
  }
}
```