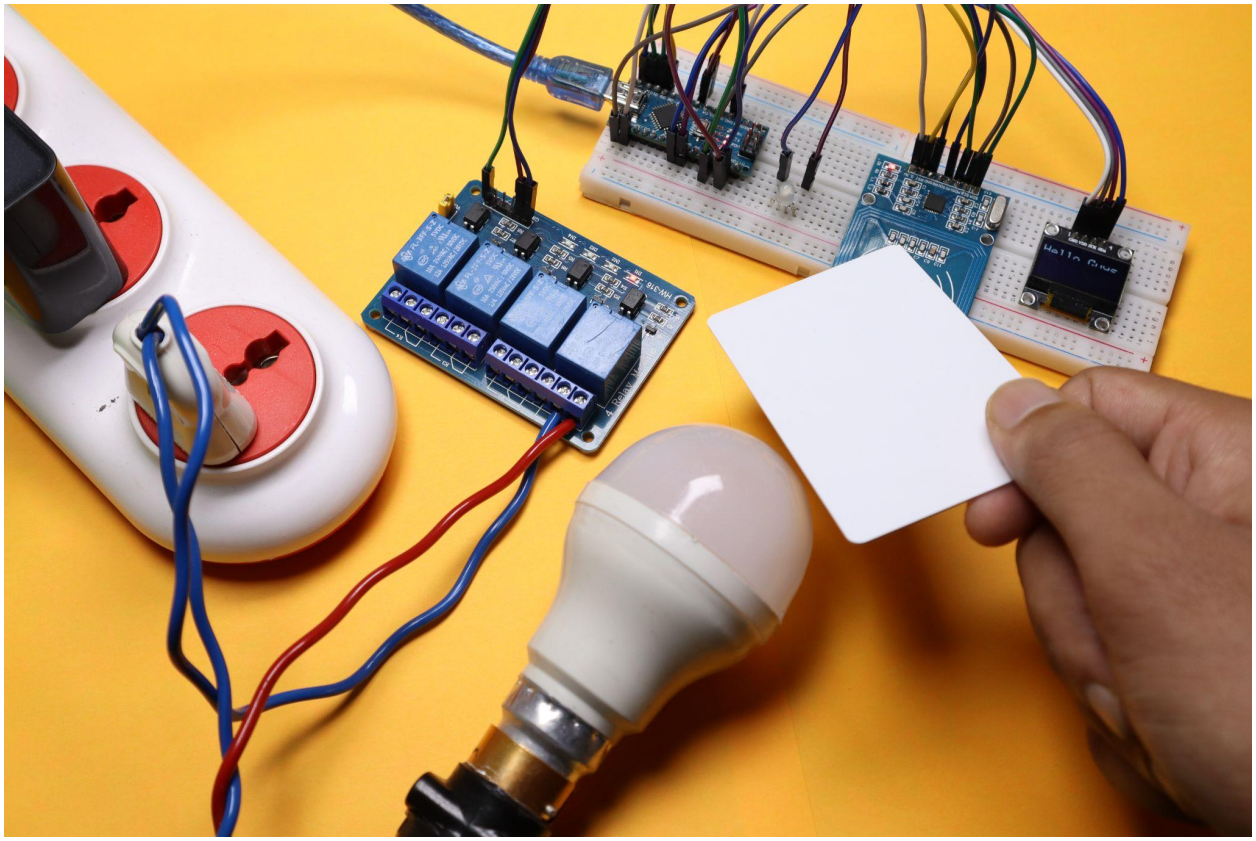
Robotix.io

*Control Bulb using **RFID Card** (Controlling home appliances using RFID Card) Arduino Project*



Material Required 🎉:

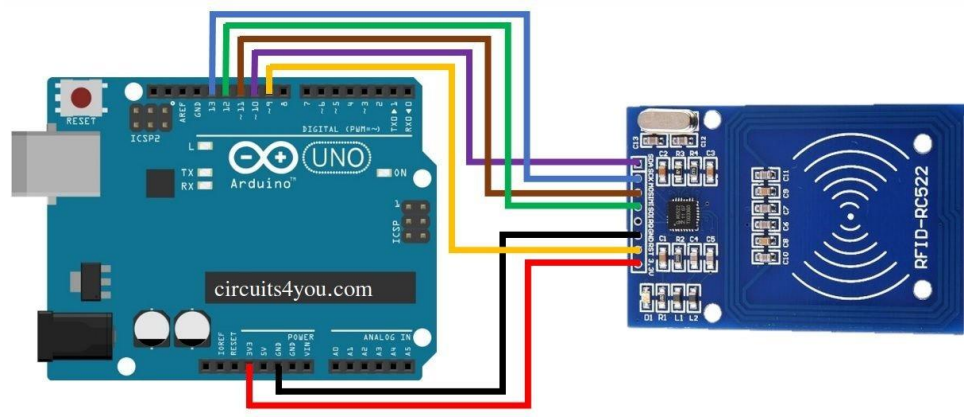
S No.	Components	Buy Components
1	4 Channel Relay	https://amzn.to/3GeH4sN
2	Arduino Nano	https://amzn.to/3R5IQPT
3	Breadboard	https://amzn.to/3QdsROy
4	OLED display	https://amzn.to/3eg9Hdt
5	RGB LED	
6	RFID Card reader module	https://amzn.to/3B8YDrH
7	Bulb	https://amzn.to/3PNr5Vy
8	Bulb holder	https://amzn.to/3jpC4Zg

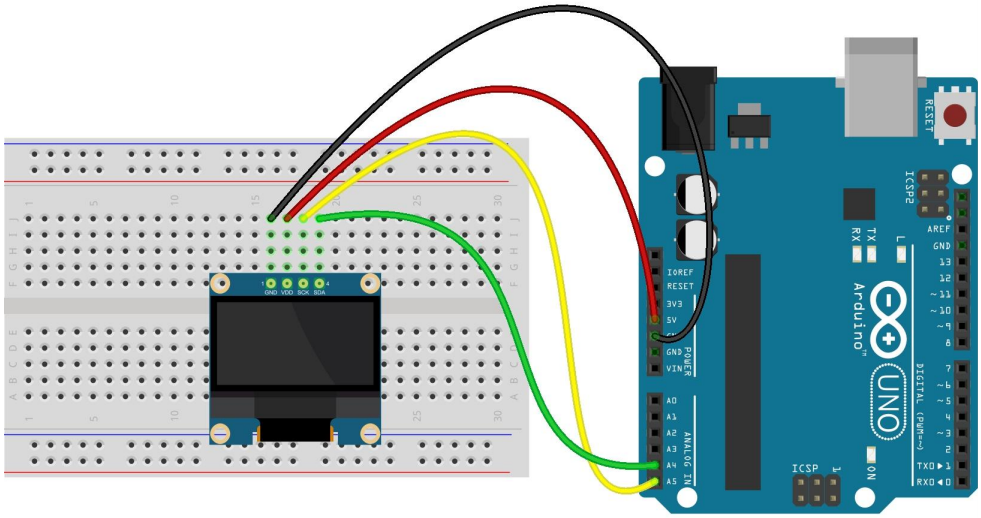
9	Connecting Wires	https://amzn.to/3cl97EY

Download this library :

```
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
#include <MFRC522.h>
```

Circuit Diagram ⚡:





OLED display :

- GND - GND
- VCC - 5V
- SCL - A4

- SDA - A5

Code 💻 :

```
#include <Wire.h>
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>

#define SCREEN_WIDTH 128 // OLED display width, in pixels
#define SCREEN_HEIGHT 64 // OLED display height, in pixels


#include <SPI.h>
#include <MFRC522.h>

#define SS_PIN 10
#define RST_PIN 9
#define led 5

// Declaration for an SSD1306 display connected to I2C (SDA, SCL pins)
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire, -1);


MFRC522 mfrc522(SS_PIN, RST_PIN);   // Create MFRC522 instance.

void setup()
{

  pinMode(led,OUTPUT);
  Serial.begin(9600);   // Initiate a serial communication
  SPI.begin();      // Initiate  SPI bus
  mfrc522.PCD_Init();   // Initiate MFRC522
  Serial.println("Approximate your card to the reader...");
  Serial.println();


  if(!display.begin(SSD1306_SWITCHCAPVCC, 0x3C)) { // Address 0x3D for
128x64
    Serial.println(F("SSD1306 allocation failed"));
    for(;;);
```

```
}
}
void loop()
{
  display.clearDisplay();

  // Look for new cards
  if ( ! mfrc522.PICC_IsNewCardPresent())
  {
  digitalWrite(led,LOW);
  display.clearDisplay();
  display.setTextSize(2);
  display.setTextColor(WHITE);
  display.setCursor(0, 10);
  // Display static text
   display.println("Hello Guys");
   display.setTextSize(1);
    display.setCursor(0, 30);
   display.println("Tap new Card!");
   display.display();
  }
  // Select one of the cards
  if ( ! mfrc522.PICC_ReadCardSerial())
  {
    return;
  }
  //Show UID on serial monitor
  Serial.print("UID tag :");
  String content= "";
  byte letter;
  for (byte i = 0; i < mfrc522.uid.size; i++)
  {
     Serial.print(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " ");
     Serial.print(mfrc522.uid.uidByte[i], HEX);
     content.concat(String(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " "));
     content.concat(String(mfrc522.uid.uidByte[i], HEX));
  }
  Serial.println();
  Serial.print("Message : ");
  content.toUpperCase();
  int a = 3000;
  int i = 0;
  if (content.substring(1) == "D0 03 D2 93") //change here the UID of the
```

```
card/cards that you want to give access
  {
    display.clearDisplay();
  display.setTextSize(1);
  display.setTextColor(WHITE);
  display.setCursor(0, 10);
  // Display static text
   display.println("Authorized User!");
  display.setTextSize(2);
  display.setTextColor(WHITE);
  display.setCursor(0, 35);
   display.println("Light ON");
   display.display();
   digitalWrite(led,HIGH);
   Serial.println("Light On");

      for(int i =0;i<a;i++)
      {
      delay(10);
      Serial.println(i);


    }

   }
   else
   {
   display.clearDisplay();
  display.setTextSize(1);
  display.setTextColor(WHITE);
  display.setCursor(0, 10);
  // Display static text
   display.println("Unauthorized");
  display.setTextSize(2);
  display.setTextColor(WHITE);
  display.setCursor(0, 35);
   display.println("USER");
   display.display();
   delay(1000);
   }
```

```
}
```