PROJECT 3

LDR sensor

1. INTRODUCTION: -

Another important category of sensors that you need to interface with ESP32 is analog sensors. There are many types of analog sensors, LDRs (Light Dependent Resistors), current and voltage sensors being popular examples.

COMPONENTS: -

1. **Led**
2. **Wemos**
3. **Ldr sensor**

APPLICATION: -

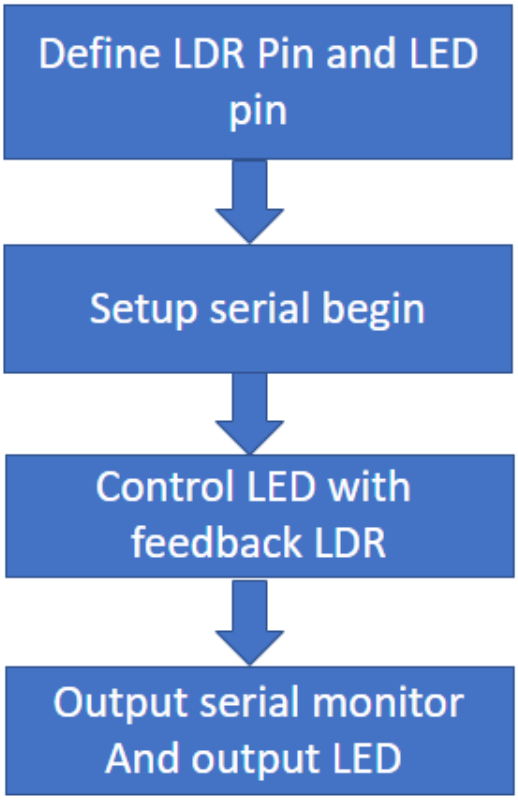
These devices are used where there is a need to sense the presence and absence of light is necessary.

These resistors are used as light sensors and the applications of LDR mainly include alarm clocks, street lights, light intensity meters, burglar alarm circuits.

OBJECTIVES: -

Light dependent resistors, LDRs, or photoresistors are electronic components that are used to detect light & change the operation of a circuit dependent upon the light levels.

FLOW CHART :-



PROGRAMMING: -

```
#include <Adafruit_NeoPixel.h>
#define NUMPIXELS 12 // Set this to the number of pixels you have

#define PIN D6
#define INPUT_PIN A0 // config for ESP8266
```

```
#define MAX_BRIGHTNESS 400.0
int r = 0;
int g = 0;
int b = 0;
float input_value;

Adafruit_NeoPixel pixels =
Adafruit_NeoPixel(NUMPIXELS, PIN, NEO_GRB +
NEO_KHZ800);
void setup()
{
   Serial.begin(9600); // config for ESP8266
   pixels.begin();
}
void loop()
{
   input_value = analogRead(INPUT_PIN);

  Serial.println(input_value);
```

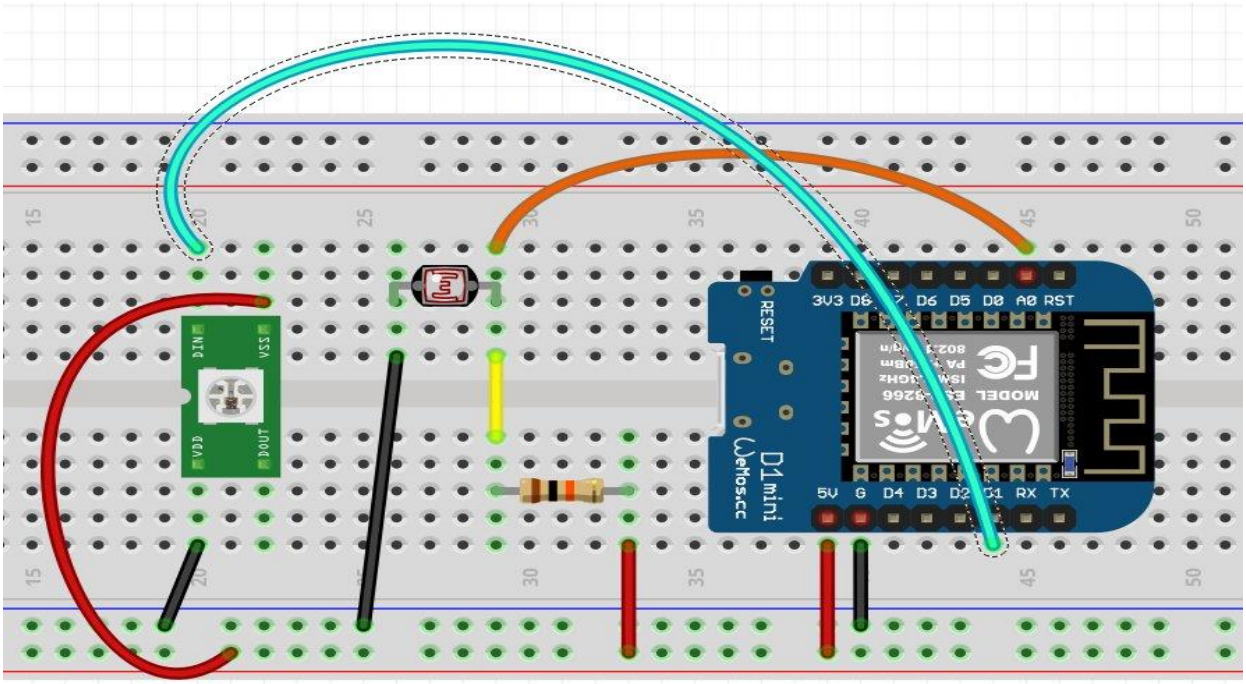
```
    input_value = ((MAX_BRIGHTNESS-
input_value)/MAX_BRIGHTNESS) * (3*(255));
    //Serial.println(input_value);
    if (input_value<255){
        r = input_value;
        g = 0;
        b = 0;
    }
    if (input_value<510 && input_value>255){
        r = 510 - input_value;
        g = input_value-255;
        b = 0;
    }
    if(input_value>510){
        r = 0;
        g = 765-input_value;
        b = input_value-510;
    }
    pixels.setPixelColor(1,pixels.Color(r,g,b));
```

```
    pixels.show();
    delay(10);
}
```

HARDWARE CONNECTION: -

1. **Connect LED to LDR**
2. **Connect D1 to AO.**
3. **Connect GND to GND.**
4. **Connect 5V to 5V.**

CURCUIT DIAGRAM: -


DIN
VSS
VDD
DOUT
RESET
D1 mini
WeMos.cc
3V3 D6 D6 D5 D0 A0 RST
5V G D4 D3 D2 D1 RX TX