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1. **Write a program to blink an LED with 1 sec delay using Arduino UNO**

int ledPin = 13;

void setup() {

pinMode(ledPin, OUTPUT);

}

void loop() {

digitalWrite(ledPin, HIGH);

delay(1000);

digitalWrite(ledPin, LOW);

delay(1000);

}

1. **To design and implement Traffic Light Controller**

int LED1 = 12;

int LED2 = 13;

int LED3 = 11;

void setup() {

// put your setup code here, to run once:

pinMode(LED1, OUTPUT);

pinMode(LED2, OUTPUT);

pinMode(LED3, OUTPUT);

}

void loop() {

// put your main code here, to run repeatedly:

digitalWrite(LED1, HIGH);

delay(200);

digitalWrite(LED2, HIGH);

delay(200);

digitalWrite(LED3, HIGH);

delay(200);

digitalWrite(LED1, LOW);

delay(300);

digitalWrite(LED2, LOW);

delay(300);

digitalWrite(LED3, LOW);

delay(300);

}

1. **To design and implement ON/OFF the light using switch button**

int switchPin = 8;

int ledPin = 13;

boolean lastbutton = LOW;

boolean ledon = false;

void setup () {

pinMode(switchPin,INPUT);

pinMode(ledPin,OUTPUT);

}

void loop() {

if(digitalRead(switchPin) == HIGH && lastbutton == LOW)

{

ledon =! ledon;

lastbutton = HIGH;

}

else

{

lastbutton = digitalRead(switchPin);

digitalWrite(ledPin,ledon);

}

}

1. **Write a simple program to read analog inputs using LDR sensor**

Int SensePin = 0;

Void setup()

{

analogReference(DEFAULT);

Serial.begin (9600);

}

Void loop()

{

Serial.println(analogRead(SensePin));

Delay(500);

}

1. **To design and implement the controlling of LED brightness using sensors**

int switchPin = 8;

int ledPin = 11;

boolean lastbutton = LOW;

boolean currentbutton = LOW;

int ledlevel1 = 0;

void setup() {

pinMode(switchPin,INPUT);

pinMode(ledPin,OUTPUT);

}

boolean debounce(boolean last)

{

boolean current = digitalRead(switchPin);

if(last =! current)

{

delay(5);

current = digitalRead(switchPin);

}

return current;

}

void loop() {

currentbutton = debounce(lastbutton);

if(lastbutton == LOW && currentbutton == HIGH)

{

ledlevel1 = ledlevel1+51;

}

lastbutton = currentbutton;

if(ledlevel1 > 255)

ledlevel1 = 0;

analogWrite(ledPin,ledlevel1);

}

1. **Design a program to detect ultrasonic sound using sound sensor**

int soundSensor = 2;  
int LED = 3;  
void setup()   
{  
Serial.begin (9600);  
pinMode (soundSensor, INPUT);  
pinMode (LED, OUTPUT);  
}

void loop()  
{  
int statusSensor = digitalRead (soundSensor);  
  
if (statusSensor == 1)  
{  
digitalWrite(LED, HIGH);  
}  
  
else  
{  
digitalWrite(LED, LOW);  
}  
Serial.println(statusSensor);  
}