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DEPARTMENT OF ELECTRICAL TECHNOLOGY

Topic: TURNING ON STREET LAMPS USING LIGHT SENSORS

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Abstract

Our project is about automatic switching of street light. In the present scenario, we will continuously illuminate of street lights using LDR as a light sensor. Therefore, this project proposes sensor based automatic switching off and on of street light. LDR is used to detect the presence of light and turn on and off the street light accordingly and is used to control the switching action of lamps or street lights depending on sun light condition. A relay is to provide isolation between the controller and the device, as we know devices that may work on both AC and DC currents always need to get a signal from the microcontroller. Therefore, a relay will be used in such case to switch from low DC current of 5V to AC current to be consumed by our street bulb lamps[1]

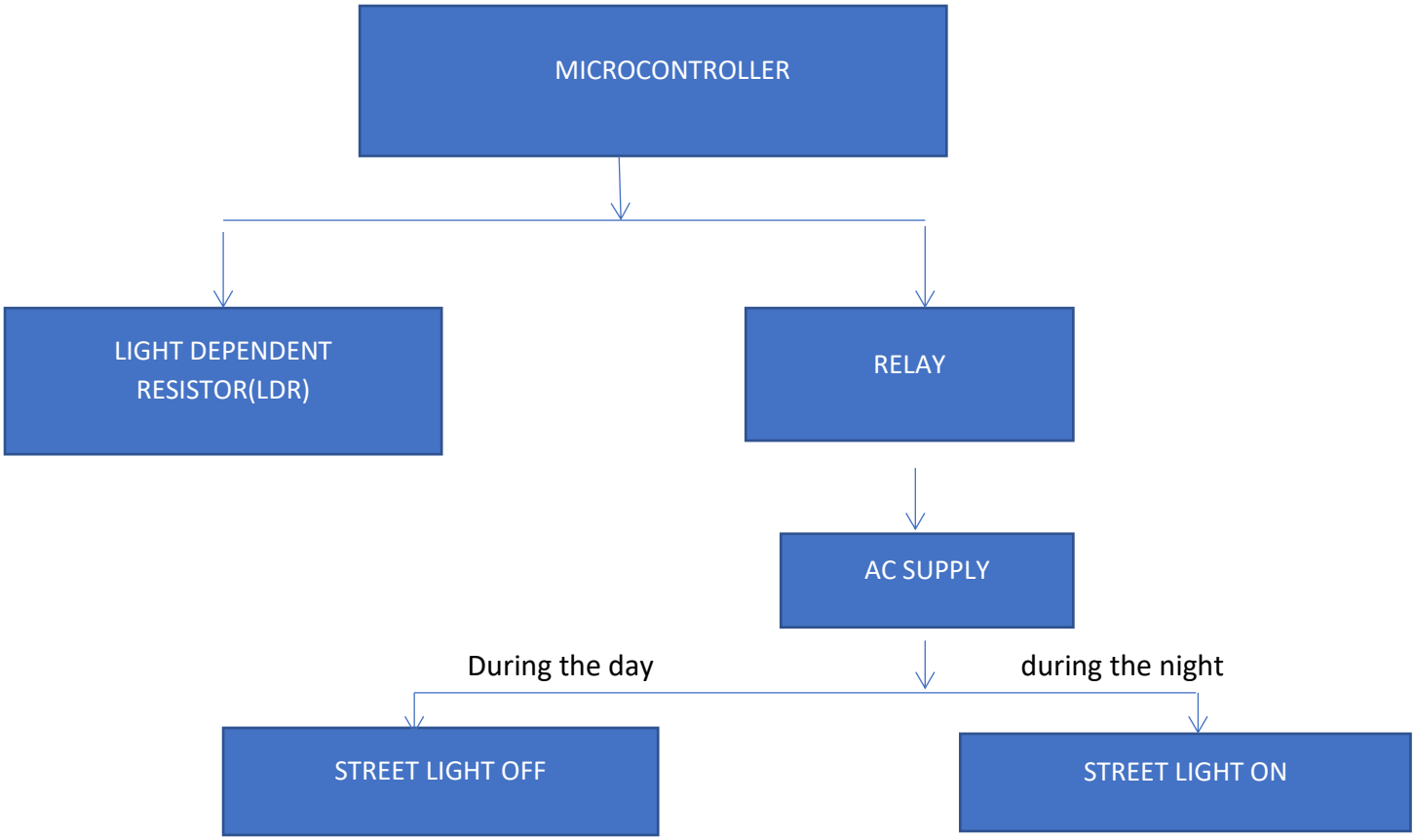
Problem statement

It is a well-known fact that in today's modern world the development in transportation system plays a big role. It consists of roads, streets, highways etc., these pathways must be illuminated brightly with the help of several types of glowing light bulbs or LEDs. It has been seen that during the night a lot of things happen on these pathways like theft, accidents due to the absence of light. The main purpose of providing the light to these highways, roads or street is to provide safety to the vehicle and number of persons crossing these paths and prevent them from any happen and track of the road or accident. Another purpose of providing lighting to these places is that during the night times when a smaller number of vehicles passes the road, the pedestrian cannot have hard time crossing due darkness on the road. Since electricity is costly due to continuous glowing for 12hrs or even more we will solve this problem by illuminating the streets with sufficient light.

DESCRIPTION

In this system mainly two devise are used a relay and a light dependent resistor (LDR). Firstly, I the Light Dependent Resistor (LDR) is used for switching ON or switching OFF the bulb lamps during day and night times by detecting the light intensity. Secondly, a relay is to switch from low DC voltage of 5V to usable AC voltage of 220V and to provide isolation between the microcontrollers as to bridge that gap. The micro controller Arduino UNO was used to automatically control the system[2].

BLOCK DIAGRAM

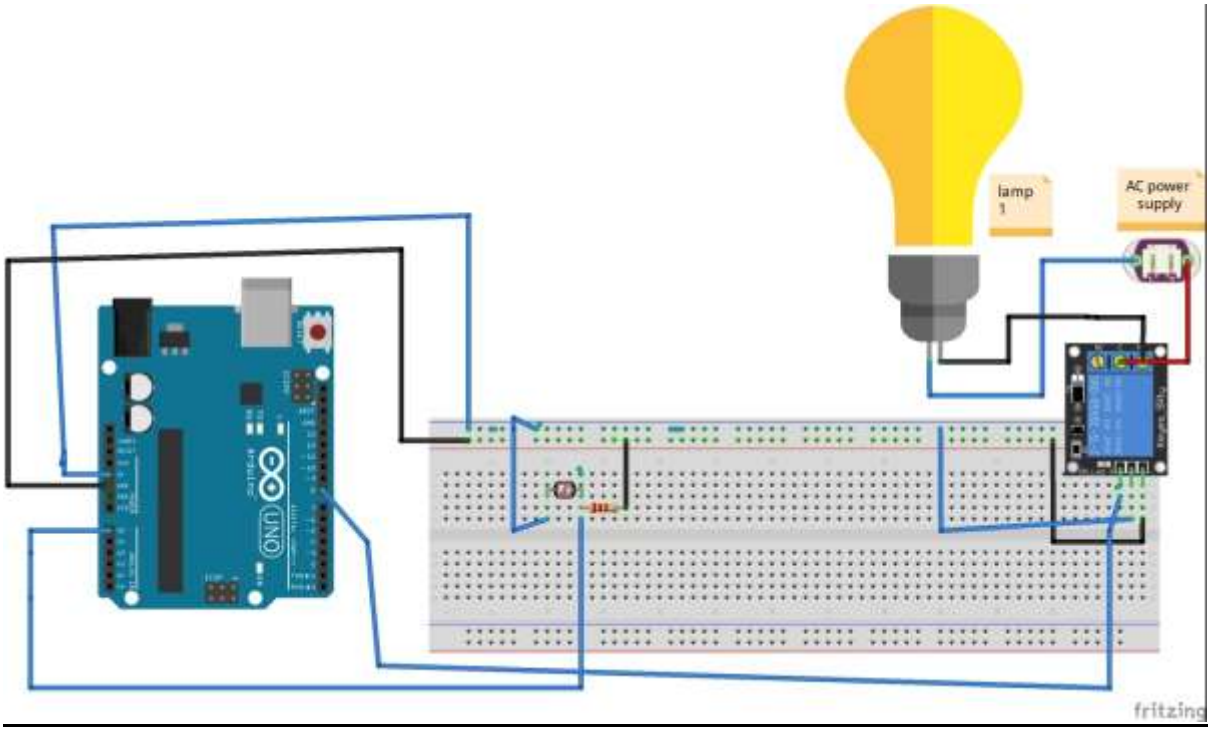


SOURCE CODES

```
int ldr=A0;
int led=8;
int value=0;
void setup()
{
  Serial.begin(9600);
  pinMode(8,OUTPUT);

}

void loop()
{
  Serial.println("Welcome to Tec ponder LDR tutorial");
  value=analogRead(ldr);
  Serial.println(value);
  if(value>100)
  {
    Serial.println("LED light on");
    digitalWrite(led,HIGH);

  }else
  {
  digitalWrite(led,LOW);
  delay(value);
```

}}

CIRCUIT DIAGRAM(drawn using fritzing)



Reference

[1] H. Katara, "Automatic Switching of Street Light," *Int. J. Innov. Technol. Explor. Eng.*, vol. 8, no. 12S, pp. 135–137, 2019, doi: 10.35940/ijitee.l1041.10812s19.

[2] "bulbulart203."