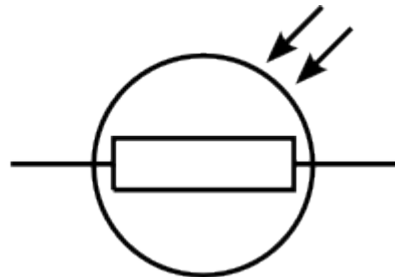
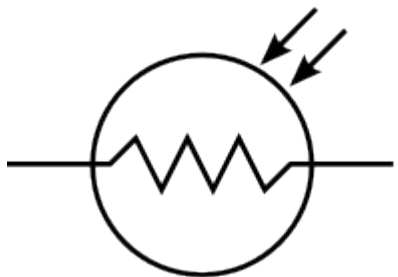




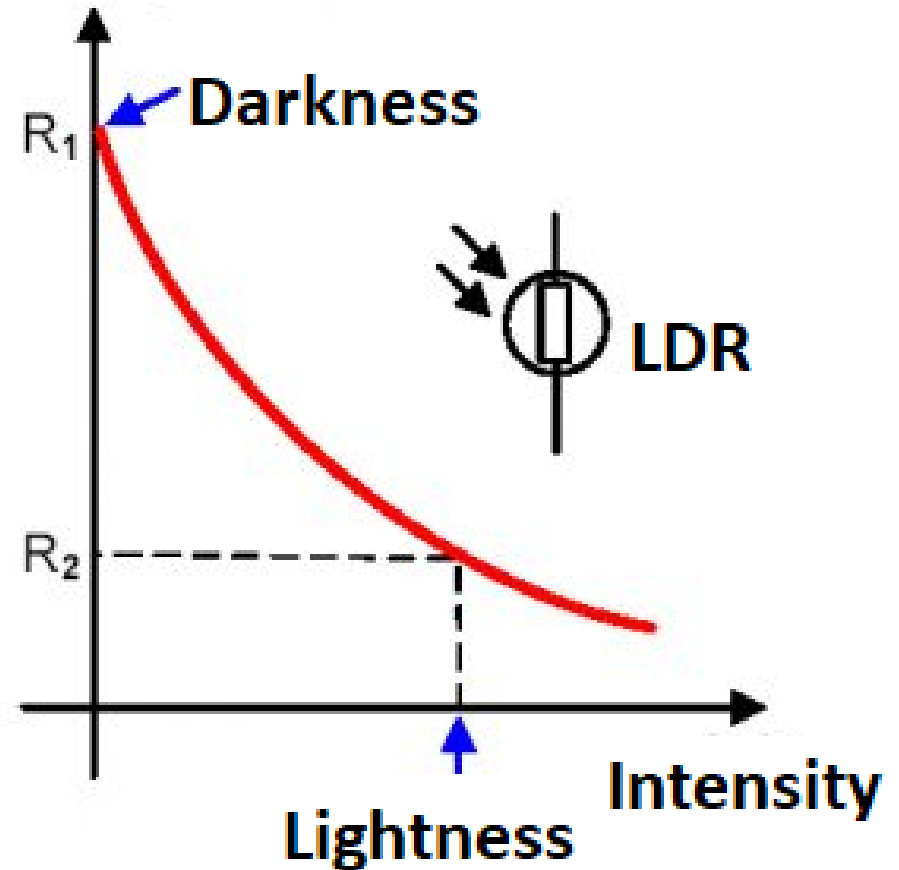
# Microcontrollers & Applications

Lecture 7.2: LDR (Light Dependent Resistor)

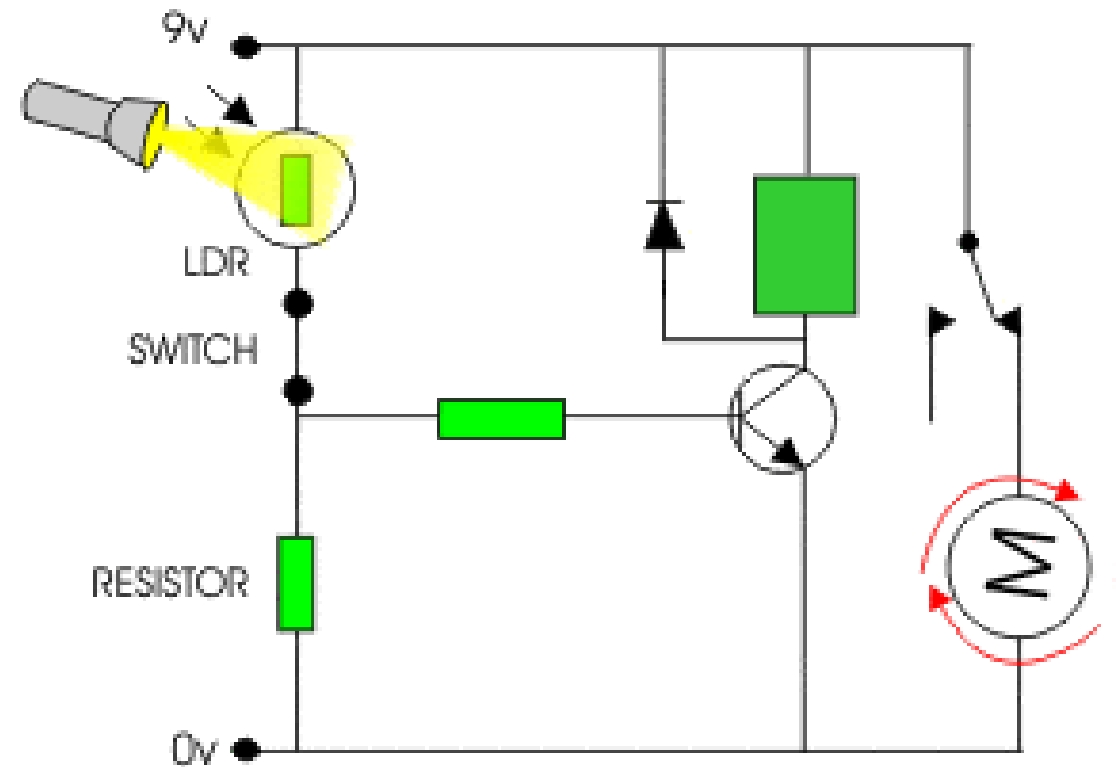
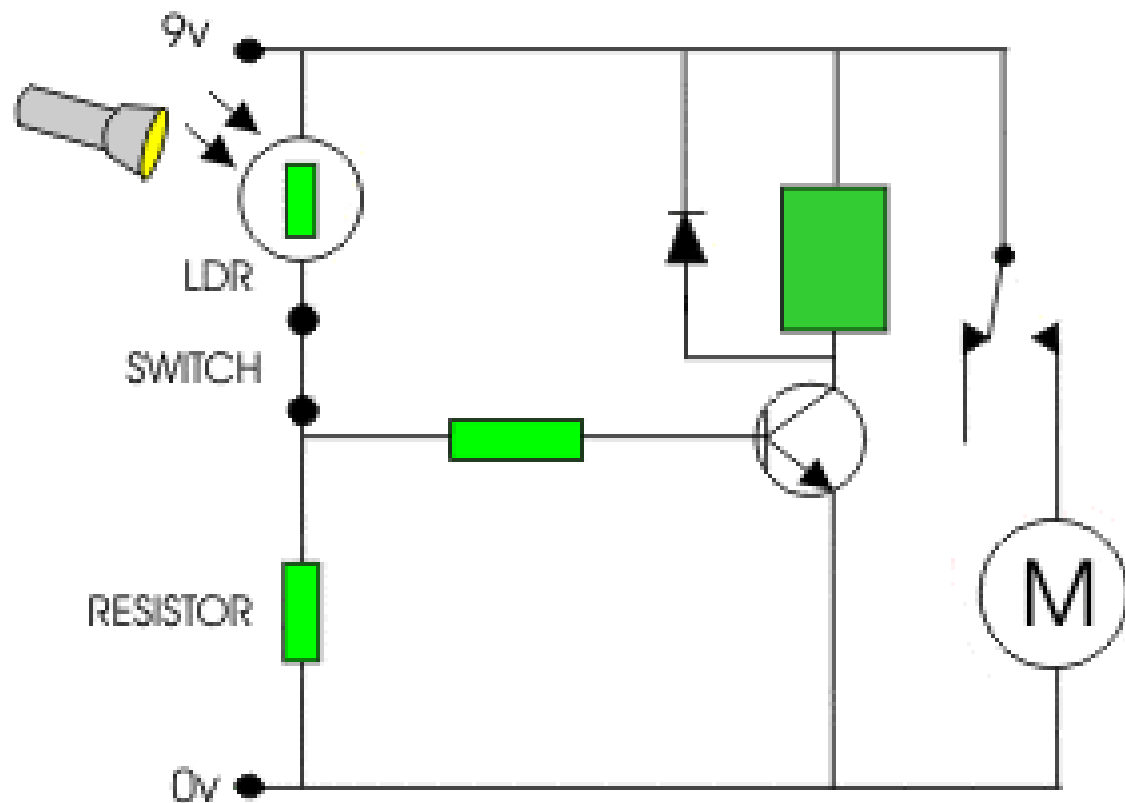
# LDR (Light-Dependent Resistor, or Photoresistor): Structure



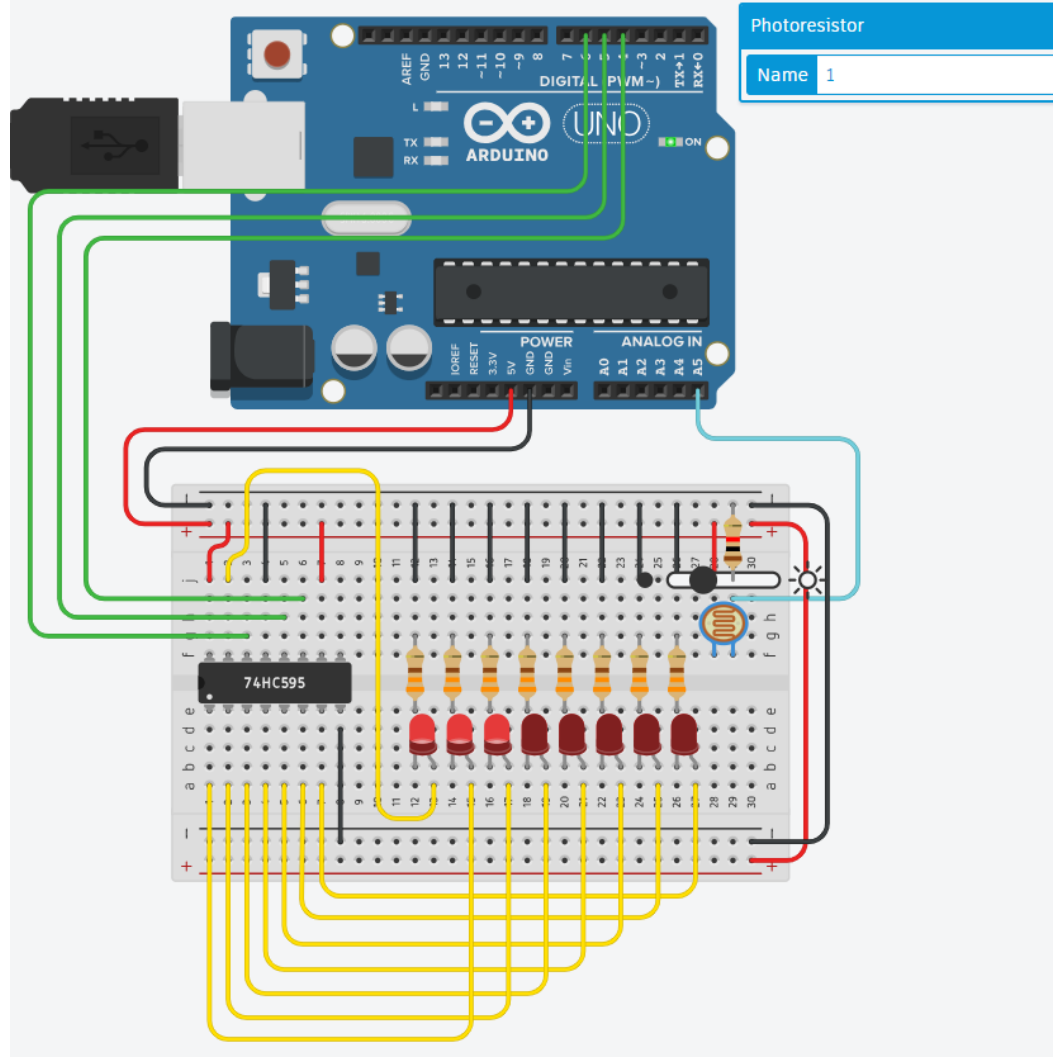
Resistivity



# LDR: Principle



# LDR: Arduino Example (1)



## LDR: Arduino Example (2)

```
#define LDR A5
#define LED_LEVEL (1023 / 9)

int latchPin = 5;
int clockPin = 4;
int dataPin = 6;

void setup() {
  pinMode(latchPin, OUTPUT);
  pinMode(dataPin, OUTPUT);
  pinMode(clockPin, OUTPUT);

  Serial.begin(9600);
}

void loop() {
  int ldrValue = analogRead(LDR);

  Serial.println(ldrValue);

  int numLeds = ldrValue / LED_LEVEL;
  int leds = 0;
  for (int i = 0; i < numLeds; i++) {
    bitSet(leds, i);
  }
  writeLatch(leds);

  delay(1000);
}

void writeLatch(int value) {
  digitalWrite(latchPin, LOW);
  shiftOut(dataPin, clockPin, MSBFIRST, value);
  digitalWrite(latchPin, HIGH);
}
```

## Left to Students

- Design an Arduino system that open backlight LED of an LCD when the light intensity is low in the environment.
- Design an Arduino-Based Sun Tracking System. You can use servo motor(s) to rotate the LDR-based Arduino board towards the sun.





Thanks for  
listening 😊

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