Home security Sensor

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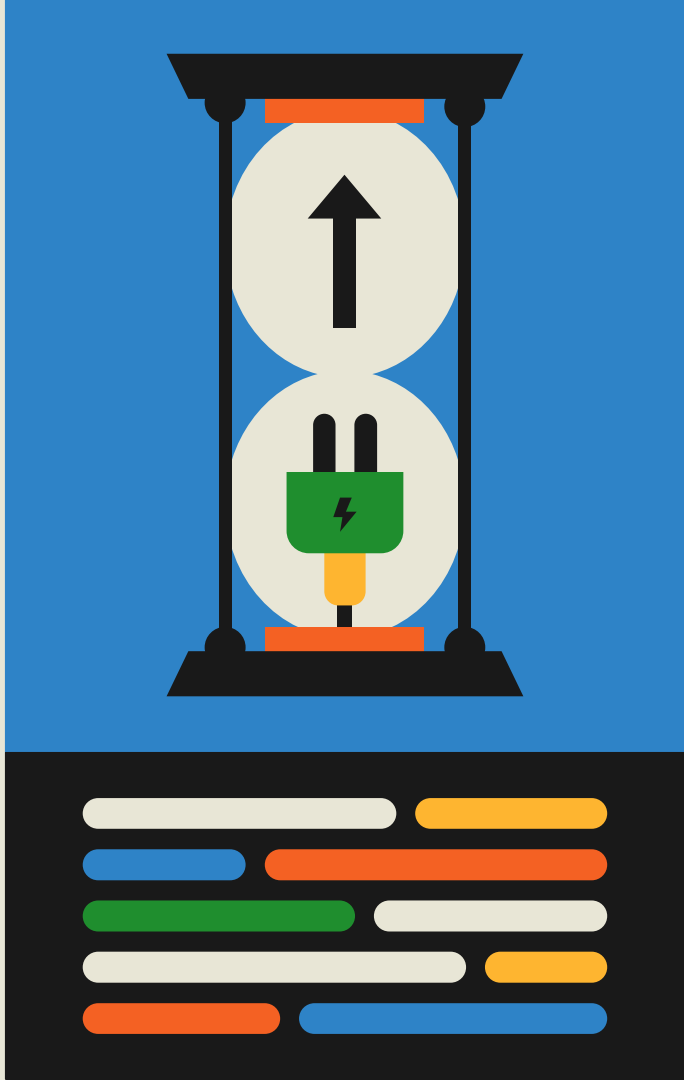
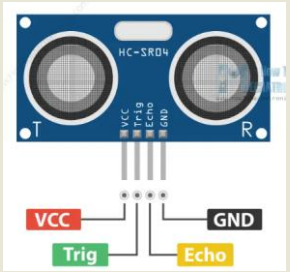


Project idea

The project idea is taken from the home security system ideas. It simulates simple security systems, which can be used at home and many other places.

A night security light only turns on when it's dark and when movement is detected. The lamp & the buzzer turns on when it's dark & movement is detected. When there's light, the lamp is turned off, even when motion is detected.

Main Components:



Ultrasonic sensor

LDR

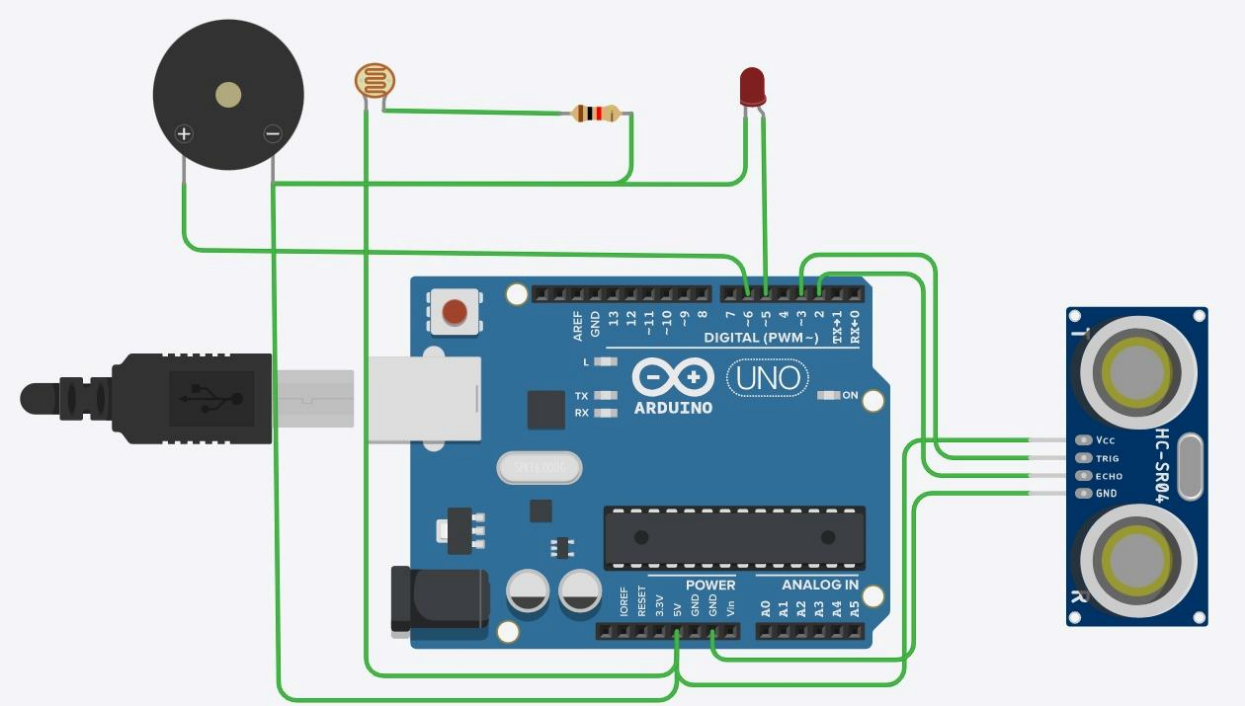
Arduino UNO

LEDs

10k Resistors

Breadboard

Project Simulation

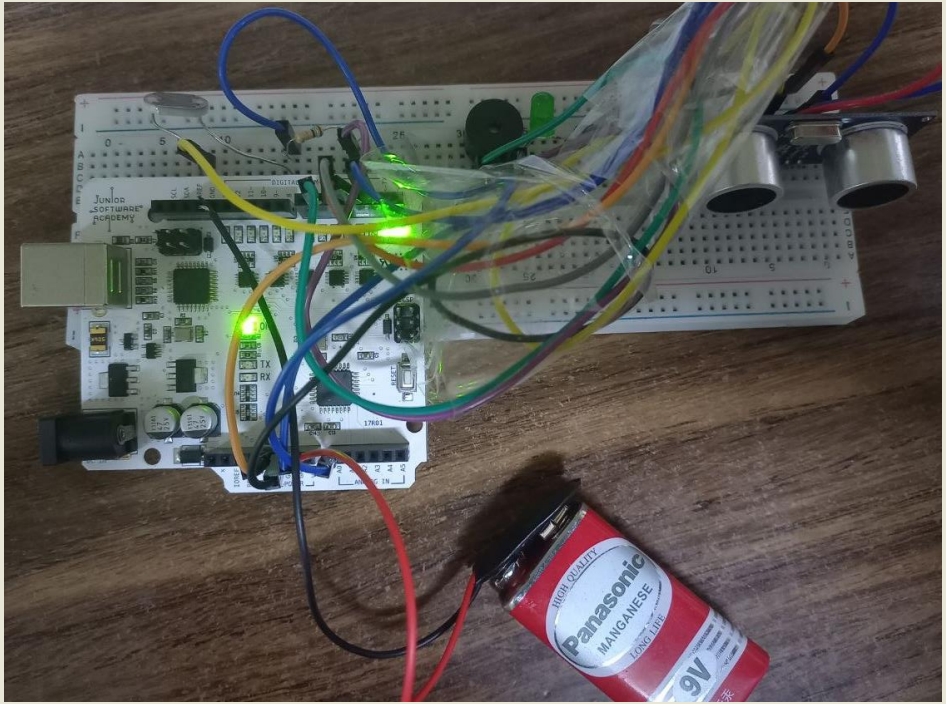


Source Code

```
int Buzzer = 6;       // choose the pin for the Buzzer
int echo =2;
int trig =3;
int val = 0;          // variable for reading the pin status
int ledPin = 5;       // choose the pin for the LED
int distance ;
int duration;
int measure(){
digitalWrite(trig,0);
delayMicroseconds(2);
digitalWrite(trig,1);
delayMicroseconds(10);
digitalWrite(trig,0);
duration = pulseIn(echo,1,15000);
distance = (duration*0.034)/2;
return constrain(distance,2,20);
delay(1000);
}

void setup() {
  pinMode(ledPin, OUTPUT);    // declare LED as output
  pinMode(Buzzer, OUTPUT);    // declare Buzzer as output
  pinMode(2, INPUT);
   pinMode(3, OUTPUT);

  Serial.begin(9600);
}
```

```
void loop() {

  int value_ldr = analogRead(A0);  // read LDR value
Serial.println(value_ldr);
Serial.println(measure());
delay(500);

  if (value_ldr <300 ) {
    if (measure()<5) {             // check if the input is HIGH
      digitalWrite(ledPin, HIGH);  // turn LED ON
      digitalWrite(Buzzer, 1);     // turn Buzzer ON
      delay(100);
      digitalWrite(Buzzer, 0);
      digitalWrite(ledPin, 0);  // turn Buzzer OFF
      delay(100);}


    } else {
      digitalWrite(ledPin, LOW);  // turn LED OFF
      digitalWrite(Buzzer, 0);    // turn Buzzer OFF
    }


  }
```

Electronic circuit



Implementation