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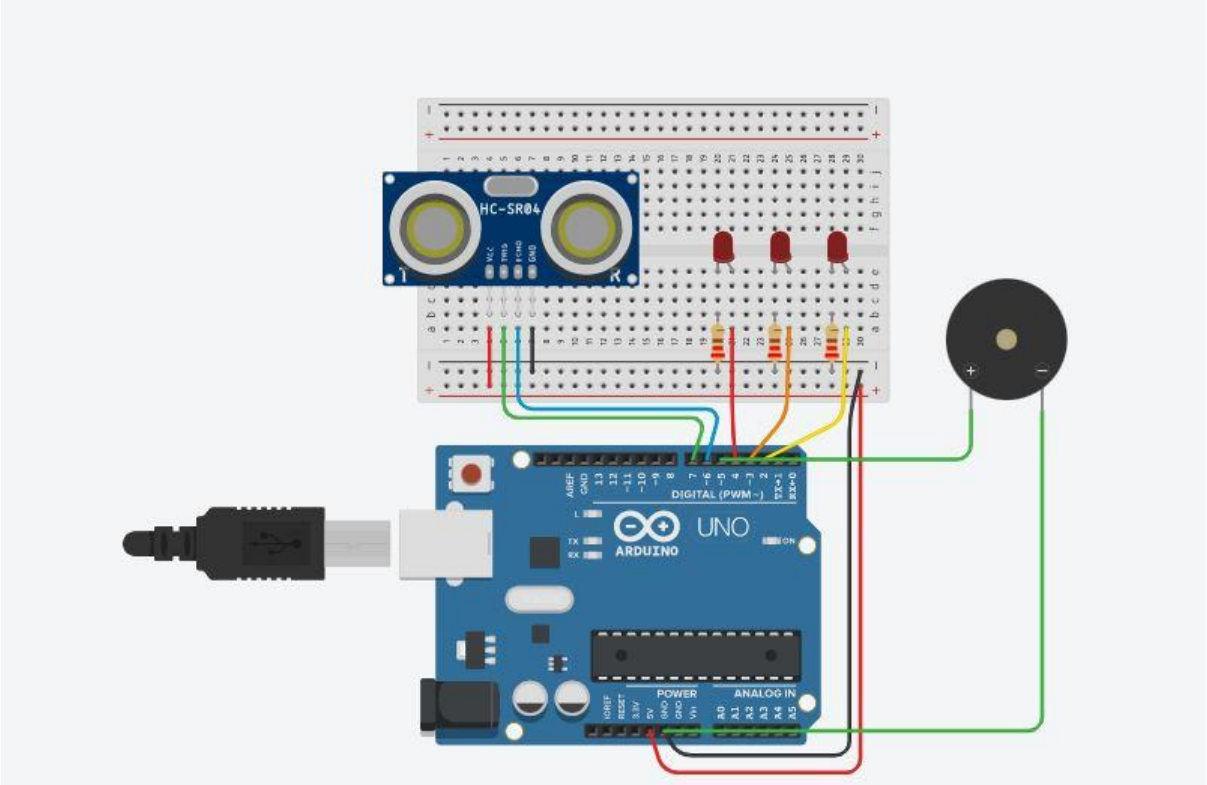
SMART HOME USING SENSOR, LED, BUZZER



BURGLAR ALERT OVER CERTAIN DISTANCE USING ULTRASONIC SENSOR

Brief description:

Using an ultrasonic sensor object in the threshold distance will get detected and the respective LED will glow depending on distance of object.Here threshold distance is set to 350cm and any object detected within the distance will get detected and buzzer will start buzzing.

Code:

```
int distanceThreshold = 0;

int cm = 0;

int inches = 0;

long readUltrasonicDistance(int triggerPin, int echoPin)
{
  pinMode(triggerPin, OUTPUT);  // Clear the trigger
  digitalWrite(triggerPin, LOW);
  delayMicroseconds(2);
```

```
  // Sets the trigger pin to HIGH state for 10 microseconds
  digitalWrite(triggerPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(triggerPin, LOW);
  pinMode(echoPin, INPUT);
  // Reads the echo pin, and returns the sound wave travel time in microseconds
  return pulseIn(echoPin, HIGH);
}

void setup()
{
  Serial.begin(9600);
  pinMode(2, OUTPUT);
  pinMode(3, OUTPUT);
  pinMode(4, OUTPUT);
  pinMode(5, OUTPUT);
}

void loop()
{
  // set threshold distance to activate LEDs
  distanceThreshold = 350;
  // measure the ping time in cm
  cm = 0.01723 * readUltrasonicDistance(7, 6);
  // convert to inches by dividing by 2.54
  inches = (cm / 2.54);
  Serial.print(cm);
  Serial.print("cm, ");
  Serial.print(inches);
  Serial.println("in");
  if (cm > distanceThreshold) {
    digitalWrite(2, LOW);
    digitalWrite(3, LOW);
    digitalWrite(4, LOW);
  }
  if (cm <= distanceThreshold && cm > distanceThreshold - 100) {
    digitalWrite(2, HIGH);
    digitalWrite(3, LOW);
    digitalWrite(4, LOW);
  }
  if (cm <= distanceThreshold - 100 && cm > distanceThreshold - 250) {
    digitalWrite(2, HIGH);
    digitalWrite(3, HIGH);
    digitalWrite(4, LOW);
  }
  if (cm <= distanceThreshold - 250 && cm > distanceThreshold - 350) {
    digitalWrite(2, HIGH);
    digitalWrite(3, HIGH);
```

```
    digitalWrite(4, HIGH);
    digitalWrite(5, HIGH);
  }
  if (cm <= distanceThreshold - 350) {
    digitalWrite(2, HIGH);
    digitalWrite(3, HIGH);
    digitalWrite(4, HIGH);
    digitalWrite(5, HIGH);
  }
  delay(100); // Wait for 100 millisecond(s)
}
```