

Smart Doorbell

Aim: - In this we learn how to make a smart doorbell for our doors.

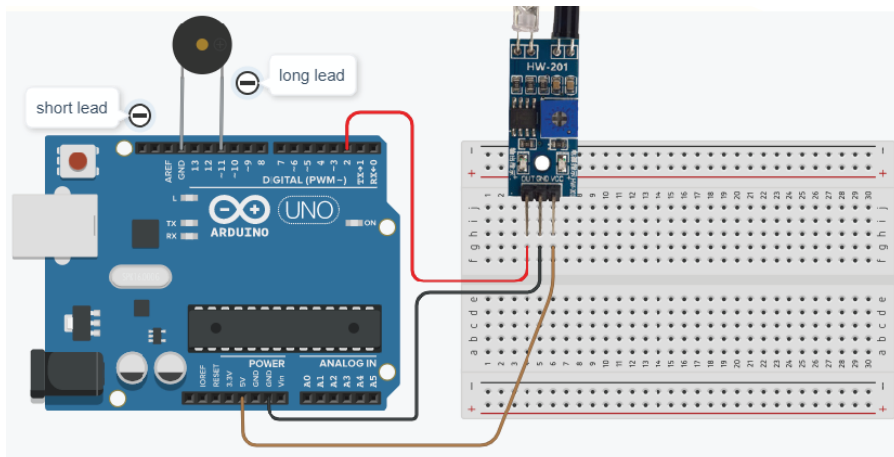


Component Requirements

Sl. No	Items	Quantity
1	Arduino Uno	1
2	Cable	1
3	IR Sensor	1
4	Jumper Wire	1
5	Breadboard	1
6	Battery 9 Volt	1
7	Battery Cap	1



Circuit Diagram



Circuit connections procedure

- Take 1 Arduino board, 1 breadboard and place it side by side
- Mount IR sensor on breadboard.
- Connect 3 male to male wires on the breadboard in front of each pin of the sensor, now connect the other ends of those 3 wires to the arduino board as per given details.

IR Sensor	Arduino
VCC	5V
OUT	Pin no. 2
GND	GND

- Connect the long lead/leg of buzzer to pin 11 of the arduino board.
- Connect the short lead/leg of the buzzer to the GND pin of the arduino board.

Procedure to upload the code

• Once you complete the circuit connections connect the arduino board to your laptop/computer system using arduino cable.

- Open arduino IDE.
- Open program file in arduino IDE. Go to **File->Open>Download>Select smart doorbell.**
- Click on the upload option.

Program

```
#define buzzer 11 // buzzer at pin 5
#define sensor 2 // ir sensor at pin 6
int sound=250; // set buzzer sound
void setup()
{
  Serial.begin(9600);
  pinMode(sensor,INPUT);
  pinMode(buzzer,OUTPUT);
}
void loop()
{
  int detect=digitalRead(sensor); // read status of sensor if(detect==LOW) // if sensor detects
  obstacle {
    tone(buzzer,sound); // buzzer sounds
  }
```



```
else
{
noTone(buzzer); //stop the sound
}
}
```

Output

1. You can put your hand on top of the sensor led, buzzer will sound. If there is no object in front of the sensor LED, the buzzer will not sound.

9V Battery connection:

1. You are powering the arduino through your laptop. You can also power the arduino through a 9v battery.
2. Disconnect the arduino cable and connect the 9v battery to the arduino board using the power jack connector. Now you can see the circuit is working.

Note: Do not connect the battery all the time to the arduino board. It will drain the battery.

Troubleshoot

Issue	Solution
Both the Led's on the sensor are not working/glowing.	Make sure that wires are connected properly, avoid loose connections.
One Led (power LED) is ON but the 2nd Led is not glowing/ sensor detects objects from very little distance.	Put any object in front of the sensor with a few distance. Take a screwdriver and try to vary the blue pot on the sensor. (Note: second LED will blink only when it detects object in front of sensor)

Conclusion: - Here we have completed the smart doorbell project successfully.