



A 3 – LEVEL INTRUDER ALERT SYSTEM

BY

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A 3-LEVEL INTRUDER ALERT SYSTEM

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A 3-LEVEL INTRUDER ALERT SYSTEM

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OVERVIEW

- Alerts the owner when a person intrudes through the door.



THINGS USED IN THE PROJECT

HARDWARE COMPONENTS

Bolt IoT Bolt Wi-fi Module – Rs. 550/-

Breadboard(generic) – Rs. 140/-

LED(generic) – Rs. 2/-

LDR – Rs. 30/-

Buzzer – Rs. 40/-

Jumper wires – Rs. 25/-

Resistor 330ohm x 2 - Rs. 4/-

Iron scale – Rs. 25/-

Wire – Rs. 50/-

THINGS USED IN THE PROJECT

SOFTWARE APPS AND ONLINE SERVICES

Bolt Cloud

Twilio

Mailgun

Ubuntu

THINGS USED IN THE PROJECT

HAND TOOLS AND FABRICATION

- Soldering iron(generic)
- Tape, Double sided

STORY

INTRODUCTION

According to a the FBI Uniform crime reporting statistics, there are 2.5 million Burglaries, and 66% of them are by house intrusions. There are 1, 495, 790 burglaries during the day. Break ins are 6% more likely to occur during the day between 6am and 6pm while people are at work or running errands.

By using the 3-Level intruder alert system we can avoid the burglaries and crimes caused by the intruders as a buzzer starts to beep so as to alert the surroundings and we get notified via SMS as well as Mail.

DEMONSTRATION

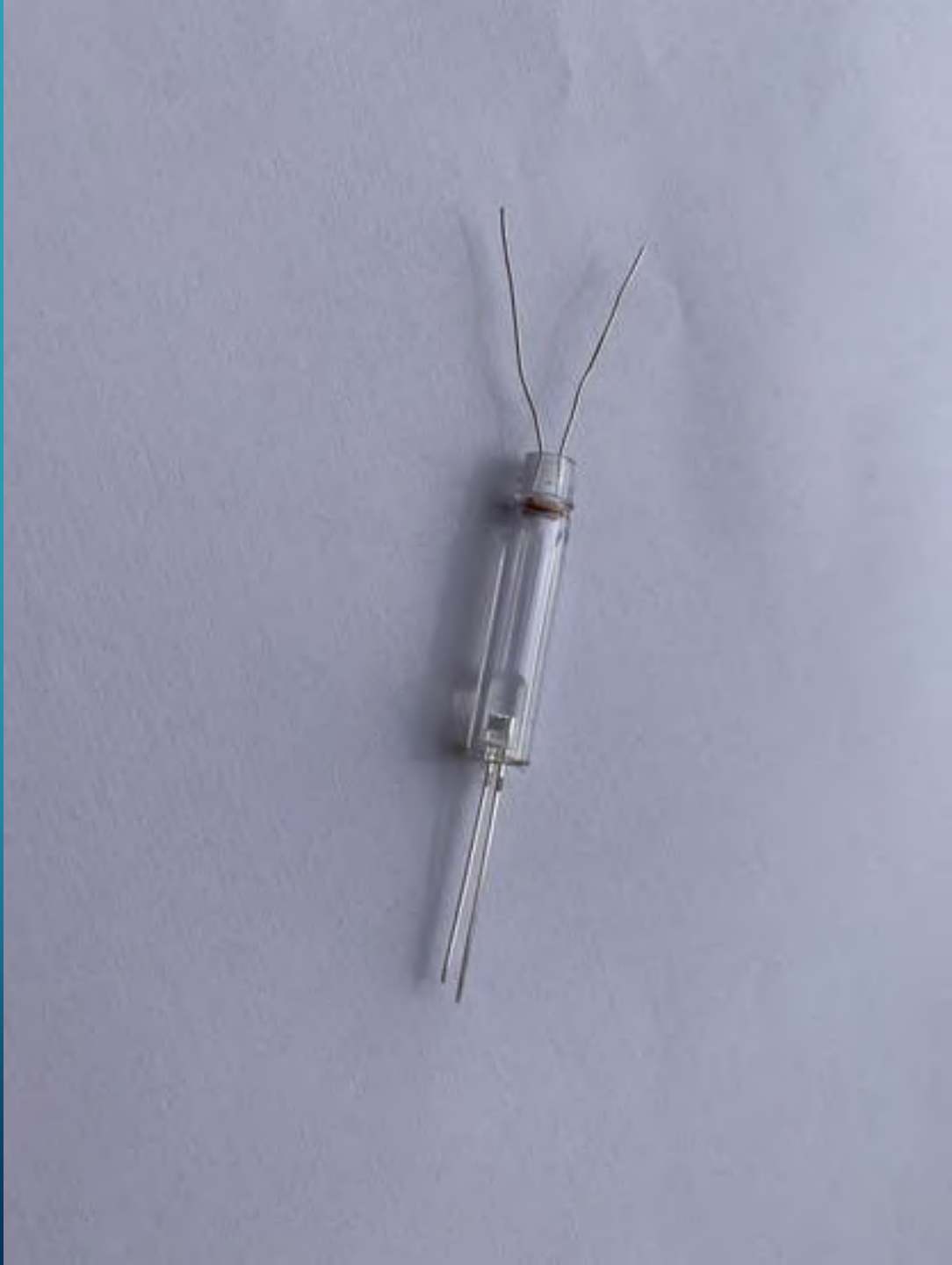
Alerting the owner of an Intruder using 3-level intruder alert system

In the 3- Level Intruder Alert system, the LDR measures the Maximum Intensity of the Light when the door is closed as it becomes a closed circuit, but, when an Intruder tries to open the door it Open circuits the LED causing LOW intensity of light, When the low light is detected the Python program developed for this system alerts the surroundings, alerts the registered owner through SMS and Mail.

The buzzer stops beeping in 20 sec after closing the door.

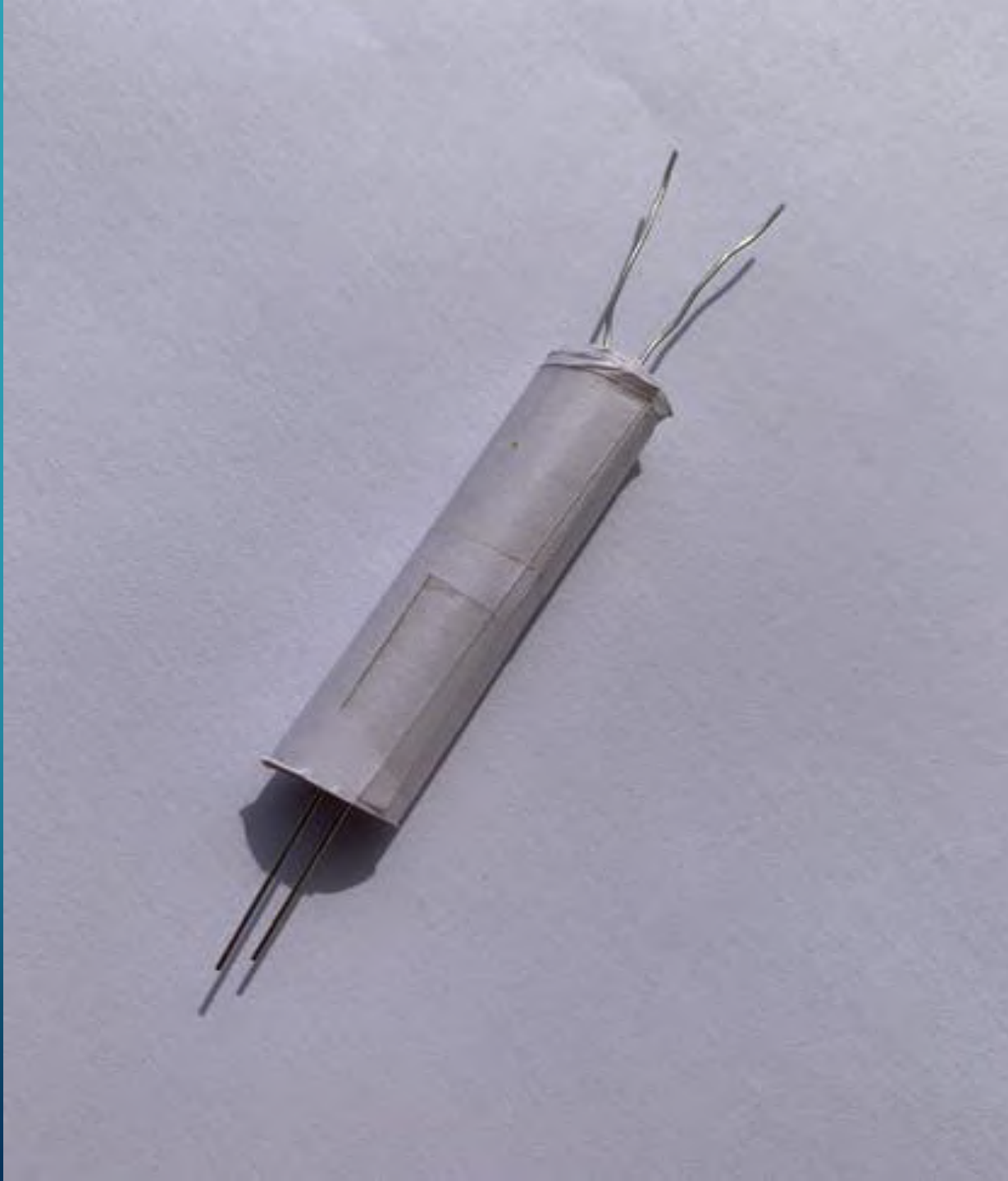
HARDWARE SETUP

- **STEP 1:-** Connect the LDR, one terminal to the A0 and other to the 3v3 pin of the Bolt wi-fi Module using jumper wires
- **STEP 2:-** Connect 2 resistors of 330 ohm parallelly and then connect one end to the Ground and other to the A0 pin of the Bolt Module.
- **STEP 3:-** Connect the Buzzer with negative end to the Ground and other to the 1 digital pin of bolt module.



HARDWARE SETUP

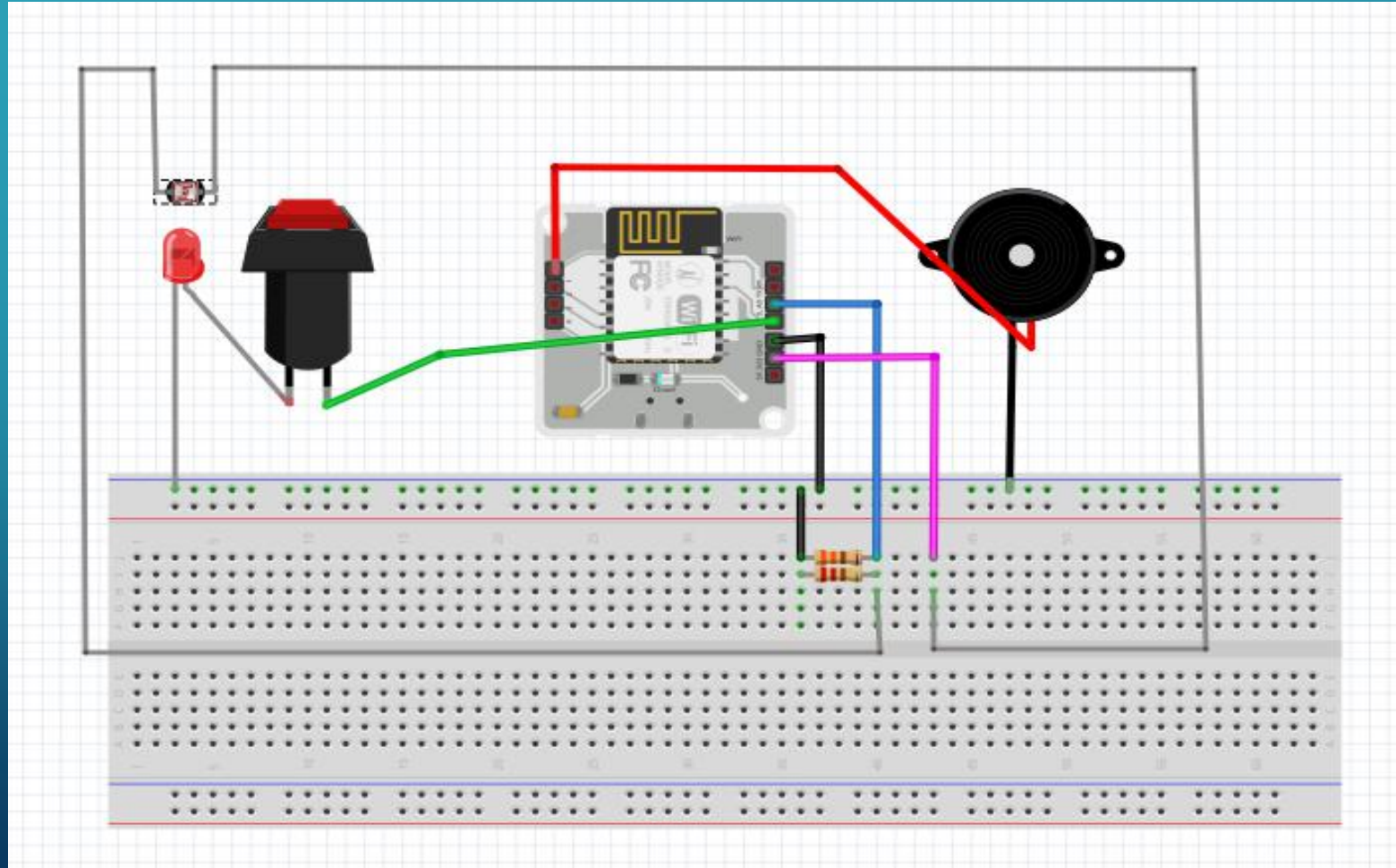
- **STEP 4:-** Take a pen barrel and cut half. Now, Insert the LDR at the one end inside such that the terminals come out. Insert the LED to the opposite end, so that when the LED glows the light emitted directly falls on the LDR and it detects maximum light intensity.



HARDWARE SETUP

- **STEP 5:-** Also wrap it with paper to prevent the surroundings light into the barrel.
- **STEP 6:-** Now, Connect the negative end of LED to ground and positive end to an iron clip which is made to contact the metal scale that in turn is connected to the 0 digital pin of the module using a wire.(Note that the metal scale and clip acts as a switch of the LED circuit).
- **STEP 7:-** Connect the USB cable to the bolt wi-fi Module for power.
- (The circuit and schematic diagrams are attached below)

SCHEMATICS



CODE

keysandids.py

```
bolt_api_key = "XXXXXXXXXXXXXX"  
bolt_device_id = "BOLTXXXXXX"  
twilio_auth_token = "XXXXXXXXXXXXXX"  
twilio_sid = "XXXXXXXXXX"  
from_number = "XXXXXXXXXX"  
mailgun_api = "XXXXXXXXX"  
mailgun_domain_name = "XXXXXXXXXXXXX"  
sender_mail = "XXXXXXXXXXXXX"  
rec_mail = "XXXXXXXXXXXXX"
```

CODE

Intruder_alert.py

```
import keysandids, json, time
from boltiot import Email, Bolt, Sms
mybolt = Bolt(keysandids.bolt_api_key, keysandids.bolt_device_id)
isOn = myboly.isOnline()#to check the status of the system
print(isOn)
c = 0#this constant is used to turn off the buzzer
if isOn[-2] == '1':#isOn[-2] gives 1 if the system is online and 0 the other case
print("Turning ON Intruder Alert System")
mybolt.digitalWrite('0', 'HIGH')#to turn on the LED
```

CODE

Intruder_alert.py

```
while True:
    if c >= 2:#to turn off the buzzer after 20 sec
        print("Turning Alarm OFF")
        mybolt.digitalWrite('1', 'LOW')
        c = 0
    elif c == 1:
        c = c + 1
    response = mybolt.analogRead('A0')#getting response from the bolt A0 pin
    data = json.loads(response)
```

CODE

Intruder_alert.py

try:

```
light_intensity = int(data['value'])
if light_intensity < 1024:#if the LED is turned off
    c = c + 1
    print('Intruder Detected')
    print('Turning ON ALARM')
    mybolt.digitalWrite('1', 'HIGH')#turns on the buzzer
    print('Alerting through SMS and Mail')
    sms = Sms(keysandids.twilio_sid, keysandids.twilio_auth_token, keysandids.from_number)
    response = sms.send_sms("Alert!There's an Intruder in the house")
    print('Status of SMS at twilio is '+ str(response.status))
```

CODE

Intruder_alert.py

```
mailer = Email(keysandids.mailgun_api,keysandids.mailgun_domain_name,keysandids.sender_mail, keysandids.rec_mail)
response = mailer.send_email('Alert!',"there's an intruder in the house")#getting the response
response_text =json.loads(response.text)#loading response json format
print('Status of Mailgun is '+str(response_text))#printing the status of the mail

except Exception as e:
    print('An Error Occured')
    print(e)
    time.sleep(10)
else:
    print('The Intruder Alert system is OFFLINE')
```

CONCLUSION

- The 3- Level Intruder Alert system alerts in three different ways when an intruder is detected. It also Alerts the people in surroundings. The buzzer also stops beeping in 20 seconds after the door is closed

The background is a dark teal gradient. In the corners, there are white line-art illustrations of circuit boards or neural networks, consisting of lines and small circles.

THANK YOU