# Doorbell Alert System

## A doorbell alert system is a device designed to notify individuals inside a building or home when someone is at the door. It serves as an essential communication tool, allowing visitors or delivery personnel to announce their arrival and gain attention from the occupants.

## This is a Python script that uses a Bolt IoT module and an ultrasonic sensor to detect when someone is close to the door and trigger a buzzer and green LED. The script also sends a ping to ntfy to alert the user that someone is at the door.

# Prerequisites

## To use this script, you will need:

## A Bolt IoT module

## An ultrasonic sensor

## A buzzer

## A green LED

## Jumper wires to connect the components

## A ntfy API token

# Installation:

## Connect the ultrasonic sensor, buzzer, and green LED to the Bolt IoT module according to the pinout described in the code.

## Install the Bolt IoT Python library by running pip install boltiot in the terminal.

## Clone or download the doorbell\_alert.py file to your computer.

## Open the doorbell\_alert.py file in a text editor and replace the placeholders for the Bolt IoT API key, device ID, and ntfy API token with your own values.

## Save the doorbell\_alert.py file.

# Usage:

## Open a terminal and navigate to the directory where the doorbell\_alert.py file is located.

## Run the script by typing python doorbell\_alert.py in the terminal and pressing Enter.

## The script will start running and will detect when someone is close to the door. When someone is detected, the buzzer and green LED will be triggered and a ping will be sent to ntfy to alert the user.

## Notifying occupants: The primary purpose of a doorbell alert system is to notify occupants when someone is at the door. Whether it's a visitor, delivery person, or even an emergency situation, the doorbell alert system ensures that individuals inside the building are aware of someone's presence at the entrance.

## Enhancing security: Doorbell alert systems contribute to building security by providing a means of monitoring and identifying visitors. With the integration of video doorbells or doorbell cameras, occupants can see and communicate with individuals at the door, allowing them to verify their identity before granting access. This helps prevent unauthorized entry or potential security threats.

## In summary, doorbell alert systems serve multiple purposes, including notification, security, accessibility, convenience, and integration with smart home systems. They provide peace of mind, enhance communication, and contribute to overall safety and convenience for occupants..

# To stop the script, press Ctrl+C in the terminal.

# Customization

## You can customize the script by changing the following variables:

# Distance\_threshold: The distance in centimeters at which the ultrasonic sensor should trigger the alert.

# delay\_time: The time in seconds to wait before triggering the alert to prevent false triggers.

# ntfy\_title: The title of the ping sent to ntfy.

# ntfy\_priority: The priority of the ping sent to ntfy. Set to "normal" by default, but can be changed to "high" if multiple instances are triggered at once.

# ntfy\_tags: The tags to include in the ping sent to ntfy.

# Pinout

# Ultrasonic sensor:

## VCC pin to 5V pin on the Bolt IoT module

## GND pin to GND pin on the Bolt IoT module

## Trig pin to digital pin 0 on the Bolt IoT module

## Echo pin to digital pin 1 on the Bolt IoT module

# Buzzer:

## Positive pin to digital pin 2 on the Bolt IoT module

## Negative pin to GND pin on the Bolt IoT module

## **Green LED**:

## Positive pin to digital pin 3 on the Bolt IoT module

## Negative pin to GND pin on the Bolt IoT module