



FPT POLYTECHNIC

# Research Festival 2019

## IoT Showcase Contest



# Home Automation

SMART HOME - CHANGE YOUR LIFE COMPLETELY

PRESENTED BY FPOLYDN TEAM  
TRAN QUOC TUAN  
NGUYEN NGOC DUY

# INFORMATION

## FPOLYDN TEAM



**Nguyen Ngoc Duy**

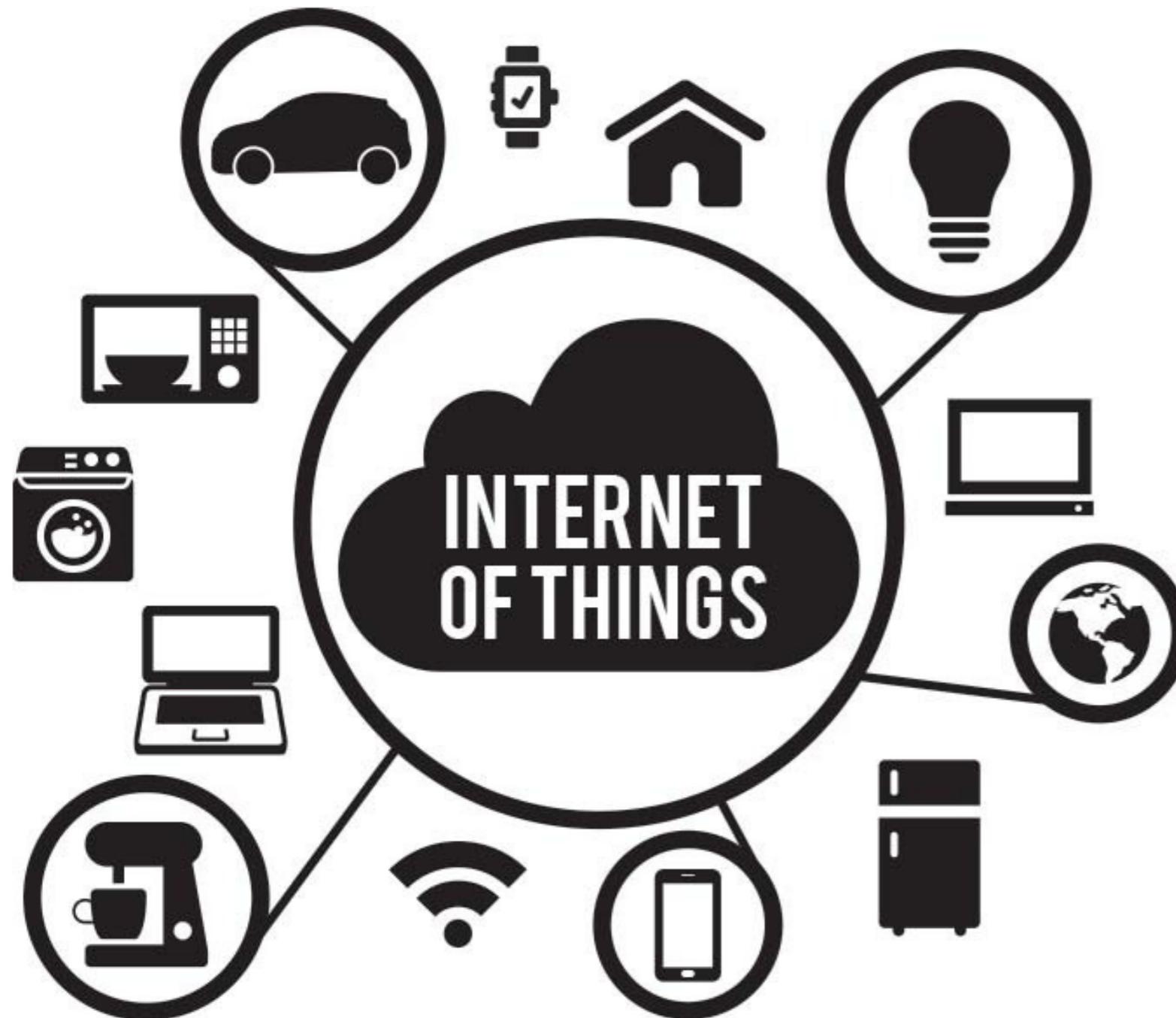
- Programming Mobile Devices
- The college of FPT Polytechnic in Da Nang
- Hoa Minh - Lien Chieu - Da Nang City - Viet Nam



**Tran Quoc Tuan**

- Programming Mobile Devices
- The college of FPT Polytechnic in Da Nang
- Hoa Minh - Lien Chieu - Da Nang City - Viet Nam

# INTRODUCTION



**TECHNOLOGY 4.0**

Why we choose home automation topic  
for IoT project?



**Trend of technology and modernization**

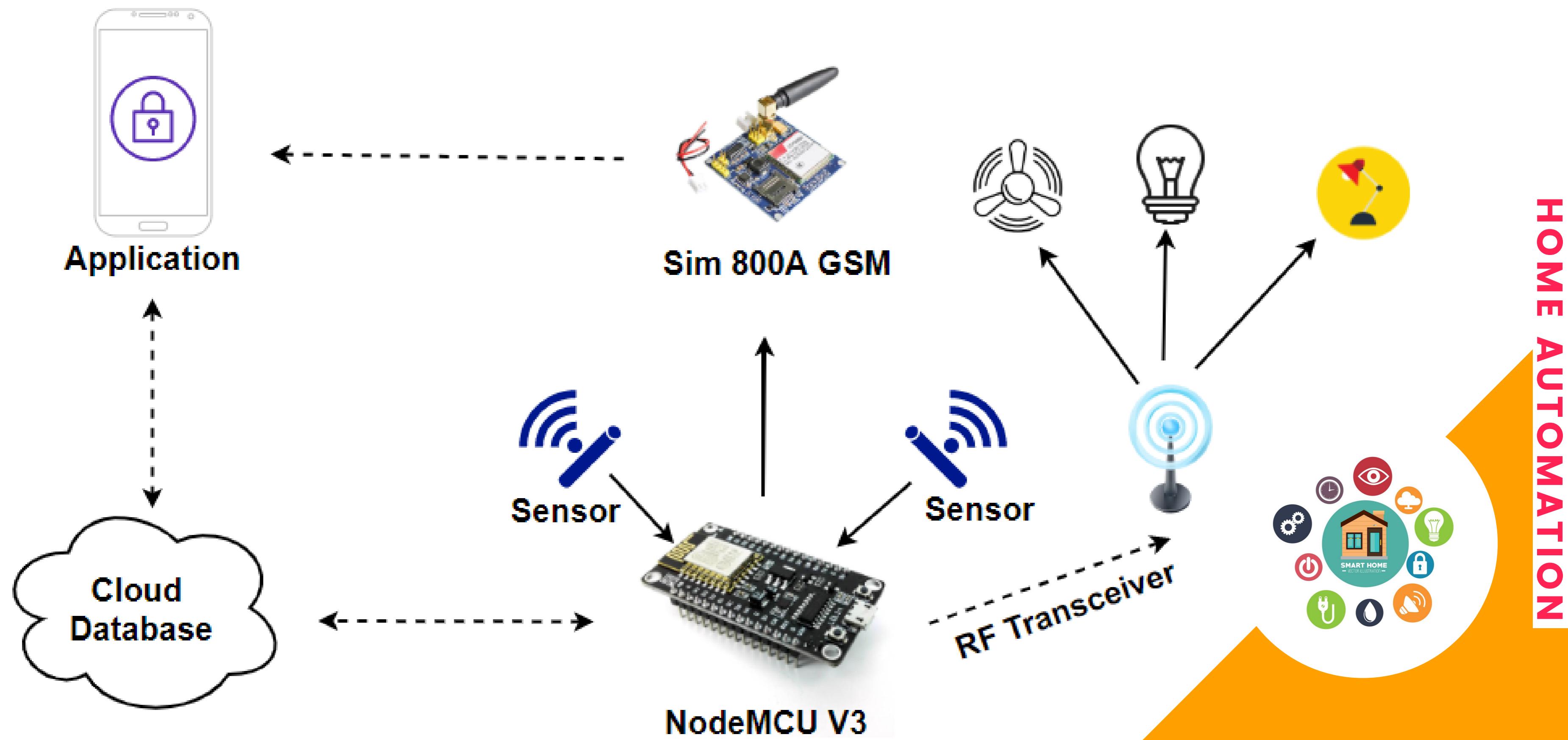
**Luxury living space and suitable price.**

**Meet users' need**

**Save time, be safe for family**

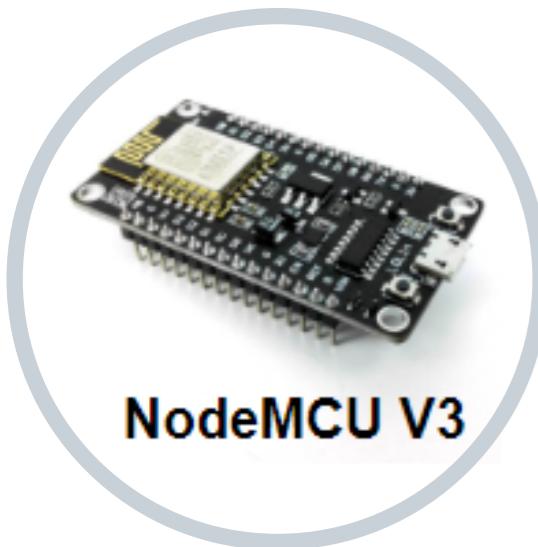
# System Architecture

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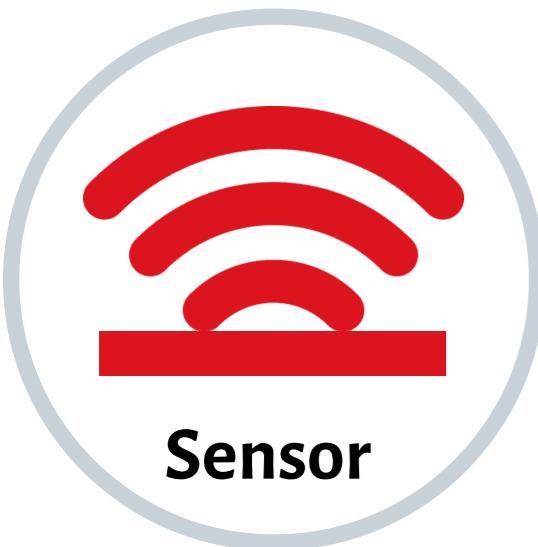
# Hardware Implementation

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NodeMCU V3

- SOFTWARE TO WRITE PROGRAMS : ADRUINO IDE
- PROGRAMMING LANGUAGE: C/C++
- CONNECT: INTERNET WIFI/3G/4G/GSM BAND
- PROTOCOL: MQTT CLOUD



Sensor

- PASSIVE INFRARED SENSOR (PIR HC-SR501)
- HUMIDITY AND TEMPERATURE SENSOR (DHT11)
- GAS SENSOR FOR AIR QAULITY (MQ135)
- MH-SENSOR SERIES FLYING FISH
- LUMINNOSITY SENSOR (GY-2561 TSL2561)



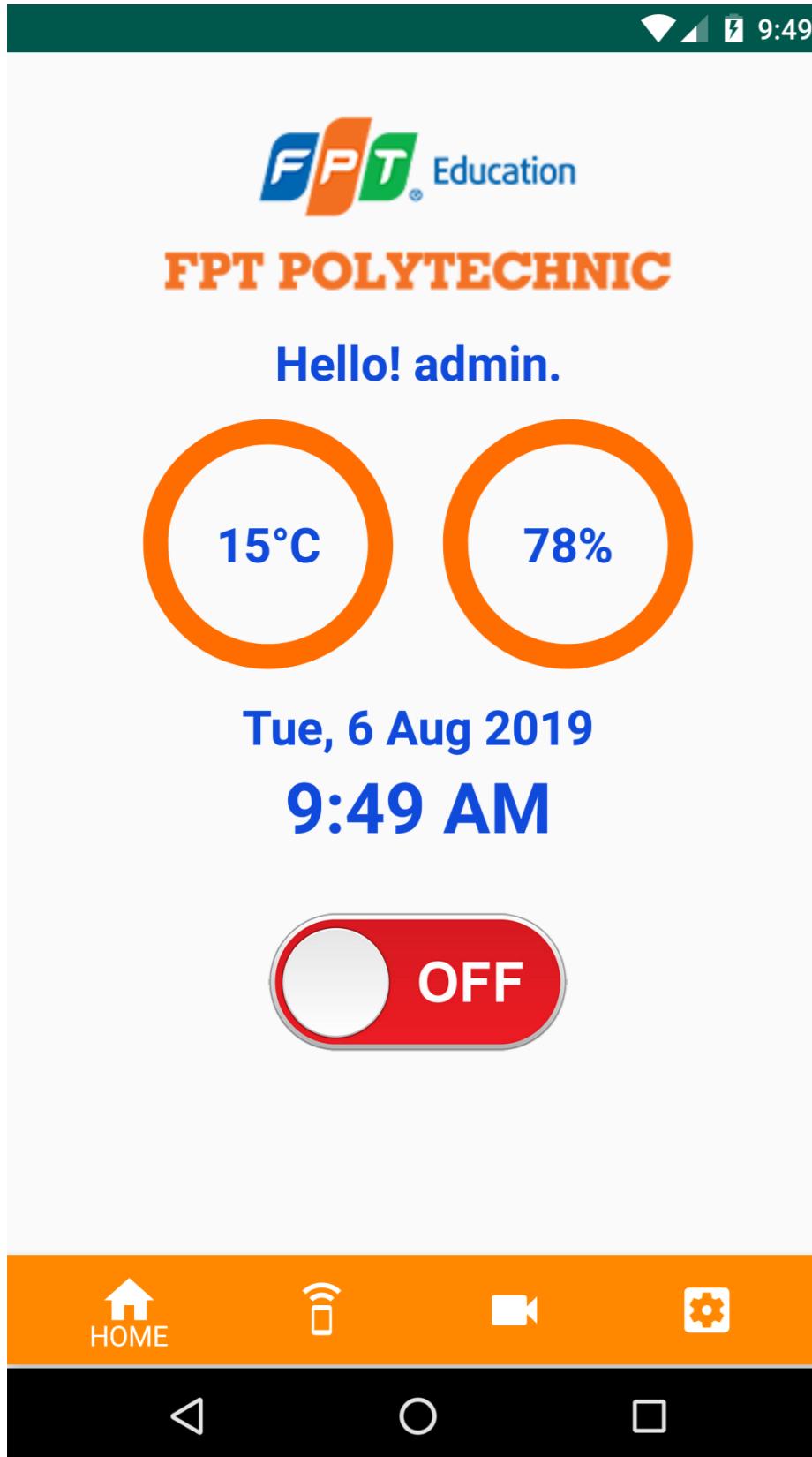
HOME AUTOMATION

# INTRODUCTION



- TEMPERATURE MONITORING
- FIRE ALARM SYSTEM
- ANTI-THEFT SYSTEM
- AUTOMATIC CONTROL
- OTHER.....

# TEMPERATURE MONITORING

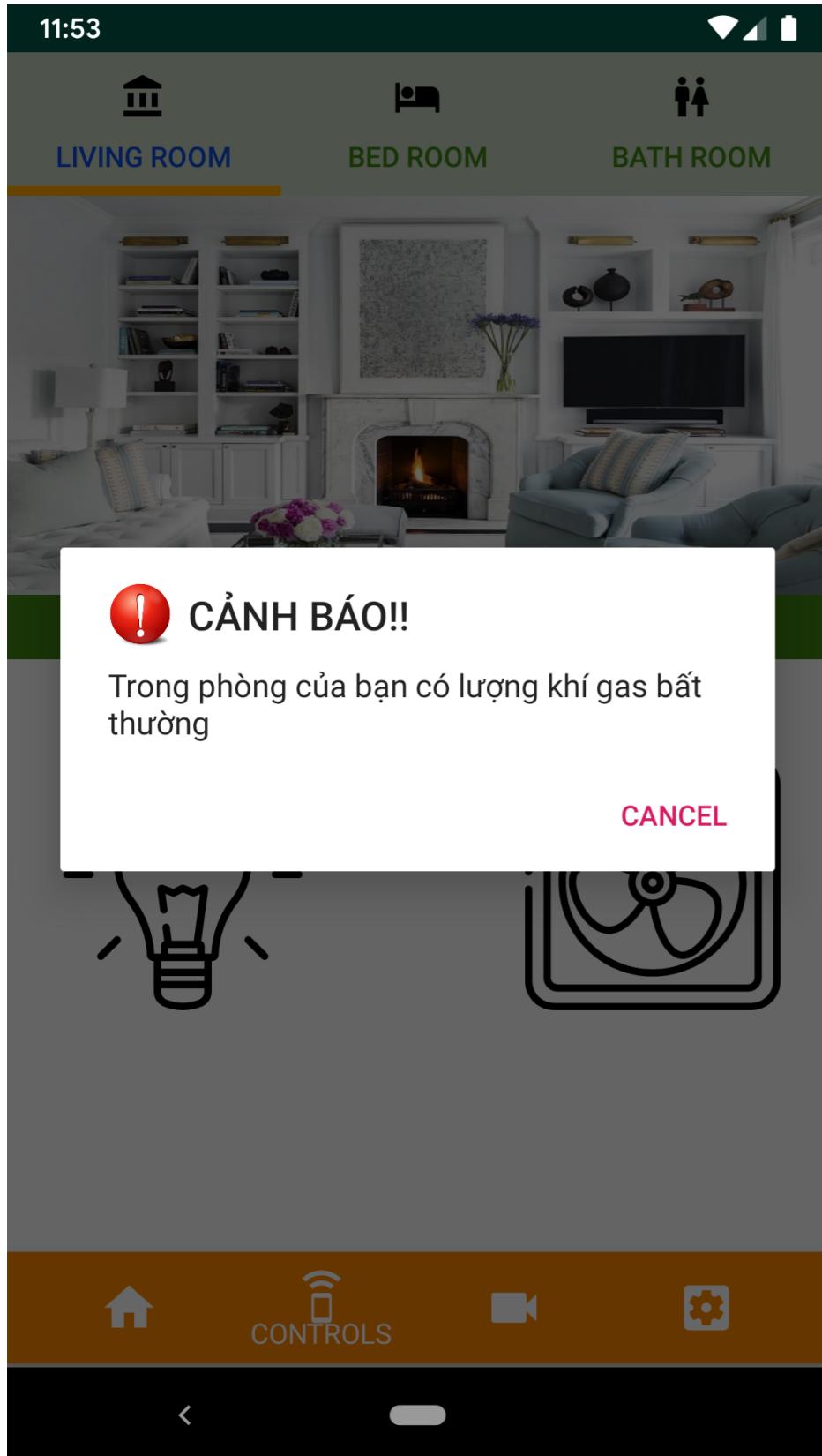


- **Show the temperature information, humidity.**  
It's constantly upgraded, rapidly, precise.
- **Hint when the temperature, the humidity changes.**
  - Do you want to turn on the fan if the temperature is too high,?
  - Temperature in the room is too low, do you should turn off the fan?

PRODUCE FEATURES



# FIRE-ALARM SYSTEM



## Control toxic gas in the room

Send the information to a server, update continuously

## To announce when it have any abnormal signs

- Announcement information on your application.
- Sending SMS to register your phone number
- Perform virtual call to notice.

## PRODUCE FEATURES

Nhiệt độ vượt ngưỡng: 29.00 °C

Canh bao phat hien ro ri khi GAS trong nha

15:14, Hôm kia

Canh bao phat hien ro ri khi GAS trong nha

Canh bao phat hien ro ri khi GAS trong nha

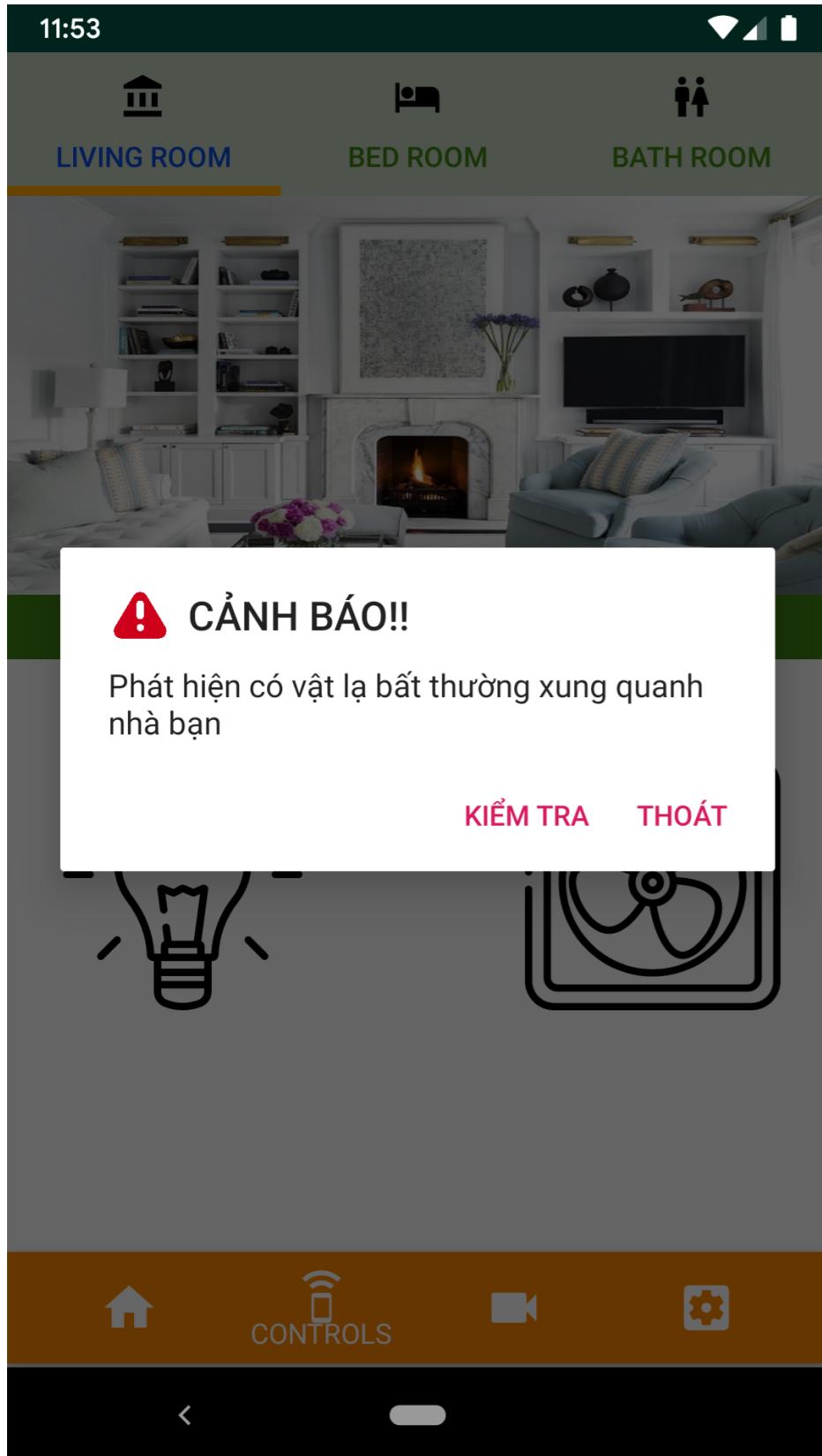
Canh bao phat hien ro ri khi GAS trong nha

18:48, Hôm kia

Canh bao phat hien ro ri khi GAS trong nha



# ANTI-THEFT SYSTEM



## Control of the house when a stranger appear

Automatically turn on the alarm when the sensor detects no strangers around your house.



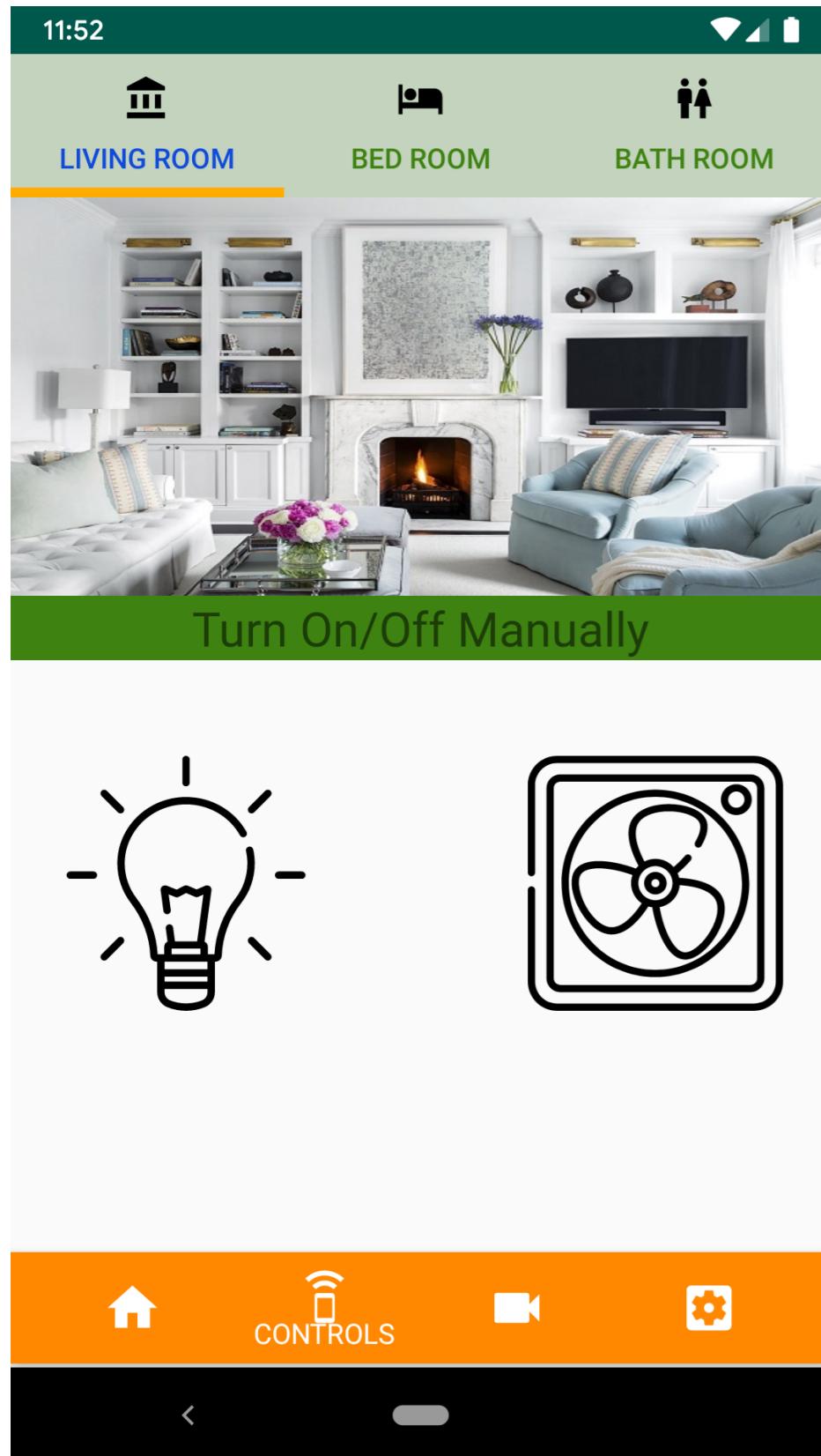
## CCTV around the house

Help you can know around is no problem, you do not have to move too much to observe

## PRODUCE FEATURES



# AUTOMATIC CONTROL



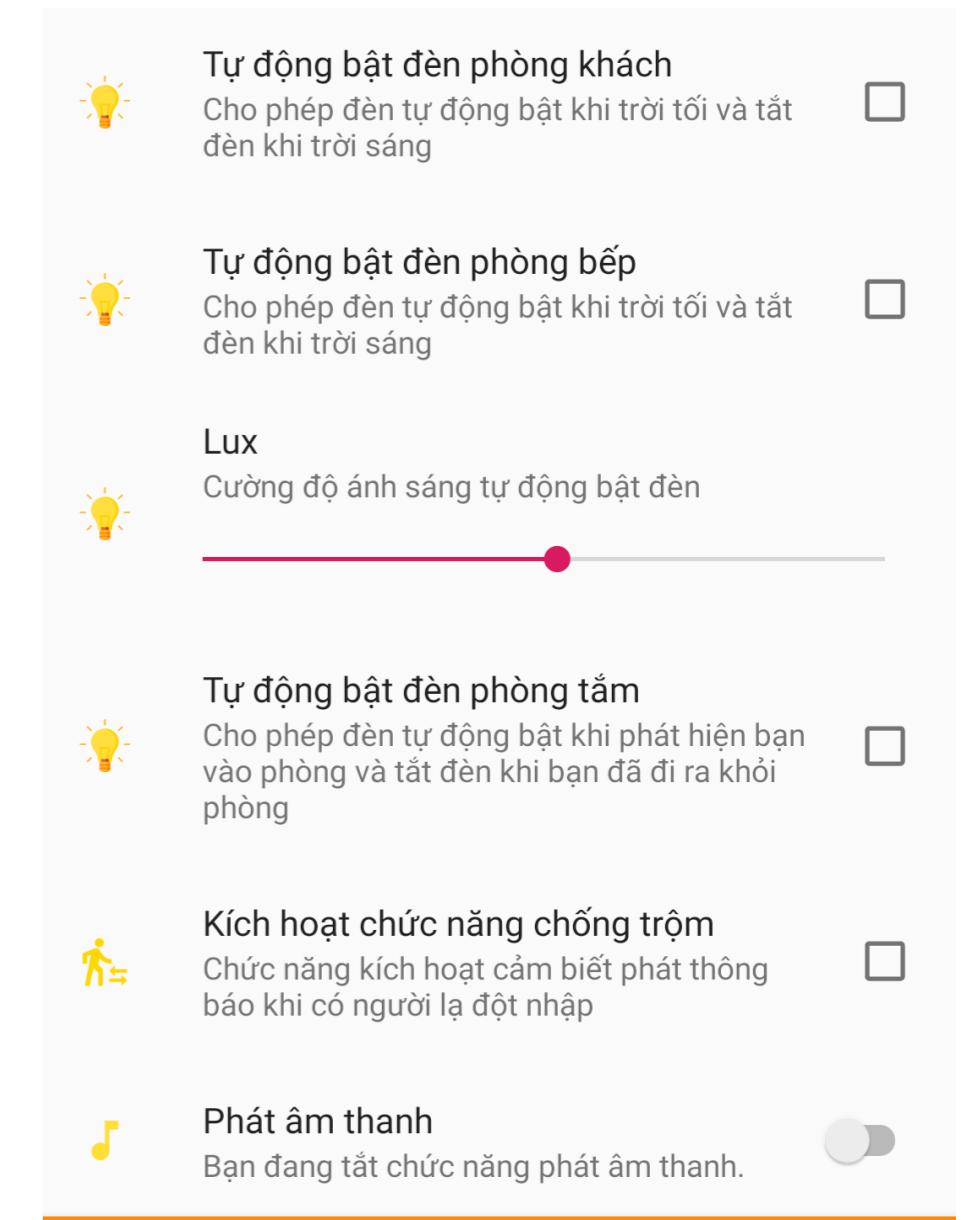
## Mode manually toggle

- Turn off electrical equipment.
- Turn off the alarm.
- Turn off the anti-theft function

## Mode automatically

- Automatically turn on the lights in the room.
- Change the light intensity of the lights
- Automatically turn on lights when people enter the room

**PRODUCE FEATURES**





# FUTURE SCOPE

- **APPLICATION**  Optimize the interface of the application

- **UPDATE**  Additional version for iOS / Website

- **PRODUCT** Deploy the construction of actual products.



# CONCLUSION

## HOME AUTOMATION

**EASY TO USE**

The interface is intuitive, anyone can use it.

**MULTI DEVICES**

It's integrated running on mobile apps and website to support you conveniently

**MANY FEATURES**

There are many good features to serve today's needs.

**DEVELOPMENT POTENTIAL**

It is the most applied product in the IoT field.

# THANKS

## ACKNOWLEDGEMENTS

- Mr. Nguyen Khanh  
Deputy Director of FPT Polytechnic College in Da Nang

Mr. Nguyen Van Nam - Mrs. Vu Thi Thanh  
Teacher IT - FPT Polytechnic College in Da Nang



# THANKS

## ACKNOWLEDGEMENTS

# THANKS FOR WATCHING