Voice Controlled Appliances

Ajit Hande(31422)
Yash Hiran(31423)
Atharv Jagtap(31425)
Nikhil Jain(31427)
Keshav Kadam(31428)

Prototype

- We are developing and designing an IOT system which involves interactions between various components (like lights and fan) through the mobile or web controlled application over the internet.

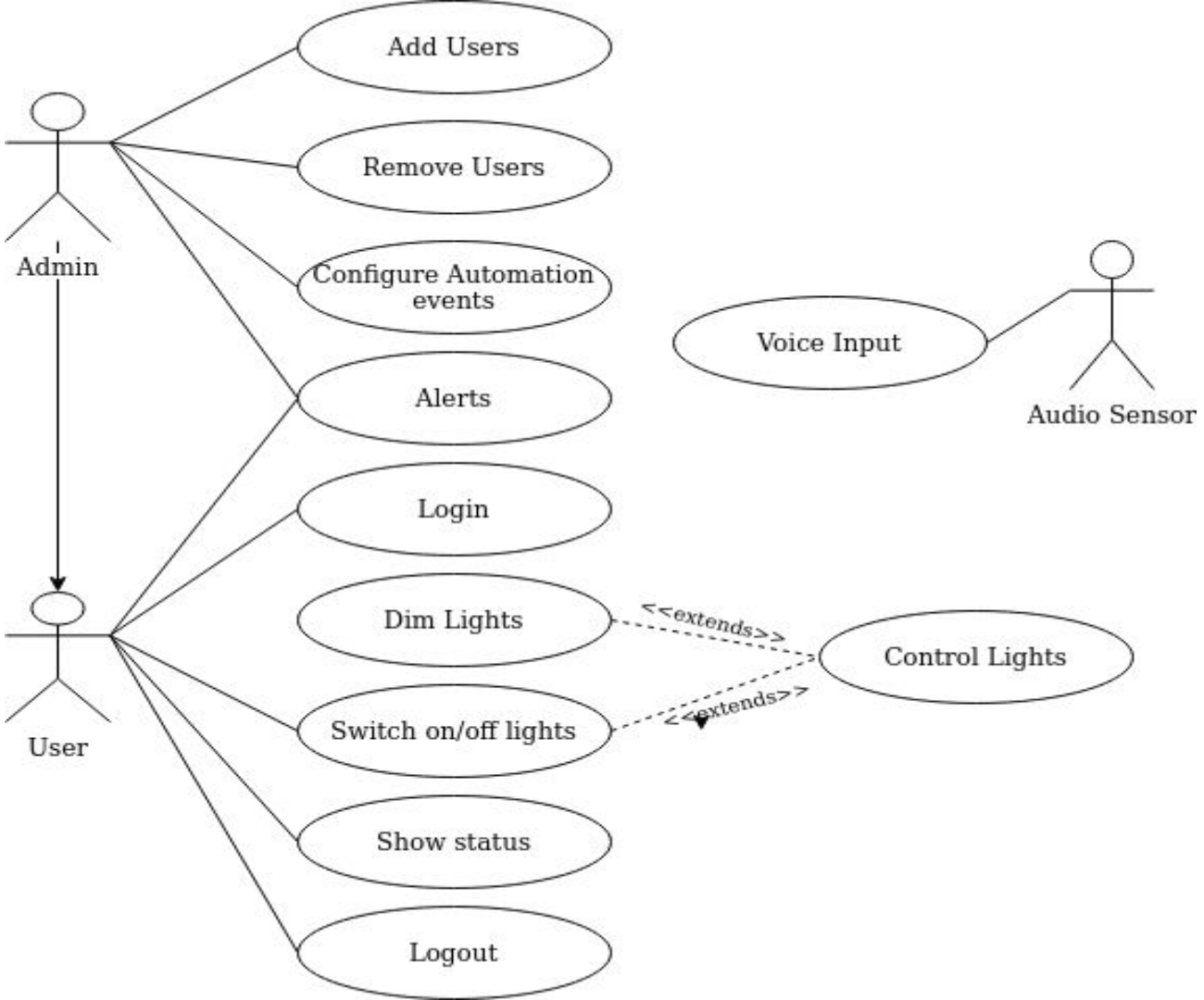
INTRODUCTION

Internet of Things (IoT) heralds a vision of the future Internet through a network where connecting physical things, will let them take an active part in the Internet, exchanging information about themselves and their surroundings. The central element of the IoT is data discovery and exchange. IoT has M2M, RFID, WSN, SCADA as its four pillars. Iot has become very useful in making life of human beings easier. We have designed a system which can be useful in controlling home appliances like tubelight(to turn it ON/OFF) etc. This home automation system will help the elderly, disabled people and reduce their efforts. Home automation may include centralized control of lighting, HVAC (heating, ventilation and air conditioning), appliances, and other systems, to provide improved convenience, comfort, energy efficiency and security.

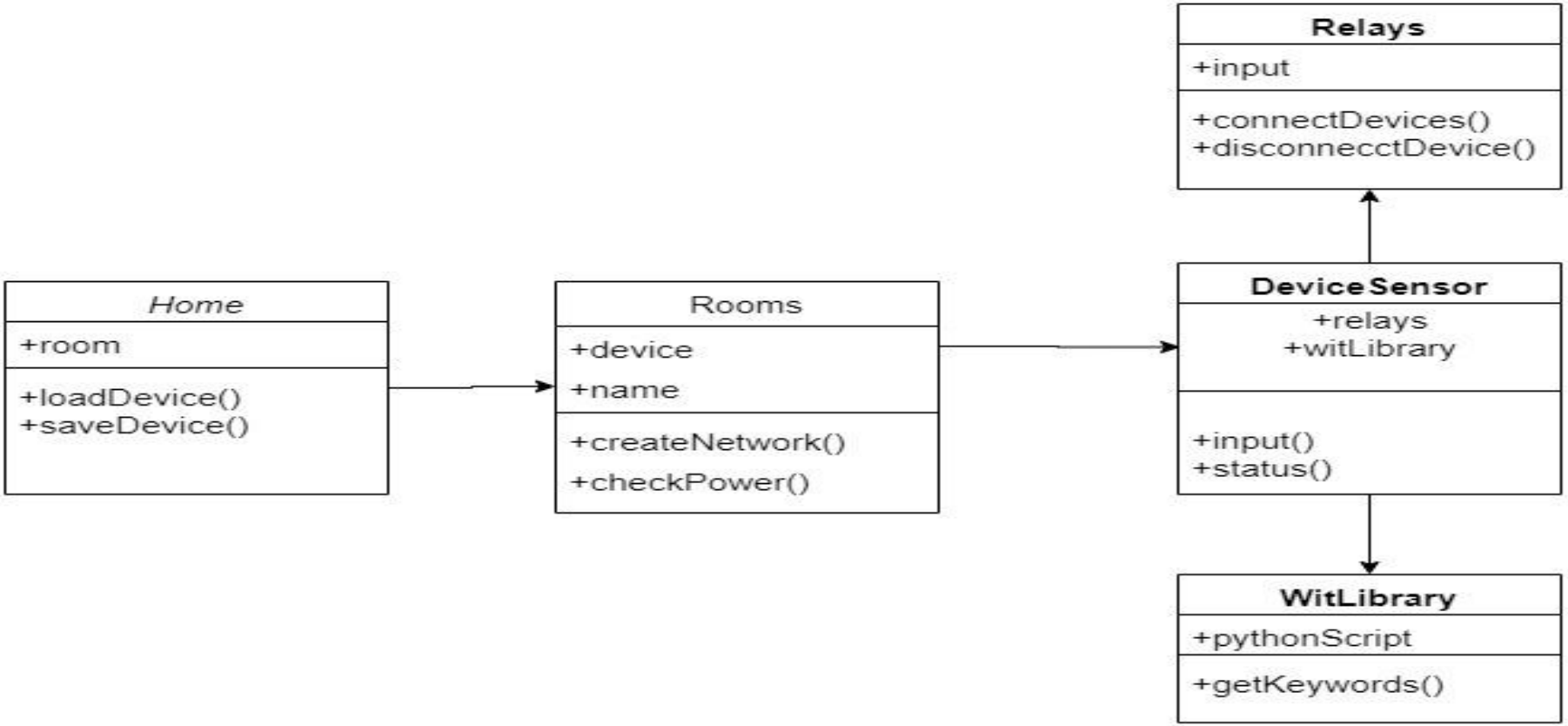
Process Specification-

1. Switch on the devices
2. Login
3. Connect relay model to raspberry pi
4. Listen to user voice
5. Convert speech to text using python scripts(Wit API)
6. Grab keywords from the text and trigger the corresponding action.

Use Case-


Add Users
Remove Users
Configure Automation events
Alerts
Login
Dim Lights
Switch on/off lights
Show status
Logout
Admin
User
Voice Input
Audio Sensor
Control Lights
<<extends>>
<<extends>>

Class Diagram



Requirements-

1. Microphone
2. Raspberry Pi 3
3. Jumper wires
4. Android application
5. LED’s, etc.
6. PC
7. Relays

ADVANTAGES-

1. Flexibility

2. Wireless smart home

3. Cost effective

4. Voice control

5. Time saving

6. Effort reducing

APPLICATIONS-

Following are the applications of Voice Controlled Home Automation-

1. Detection of fire, gas leaks and water leaks.

2. Safe blind and deaf control: Blind people can get alert with the buzzer/alarm and deaf people can alert by seeing the LCD display view.

3. Smoke detector can detect a fire or smoke condition, causing all lights in the house to blink to alert any person of the house to the possible emergency. The system can send message alert to the homeowner on their mobile phone to alert them.

4. In terms of lighting control, it is possible to save energy when hours of wasted energy in both residential and commercial applications by voice command light on/light off at night time in home and all major city office buildings, say after 10pm

CONCLUSION-

Smart home automation is very interesting and that much useful. Controlling home appliances with the help of an Android application helps in saving time and efforts. People can now sit at one place and just give a command to achieve their requirements. The voice controlled home automation using Raspberry Pi is projected for the easy use and control of electronic devices by old age and disabled people. Hence, home automation system is a better, effective, efficient system.

FUTURE SCOPE-

The future scope of this project is:

1. Authentication: In future use, we can give voice authentication to provide security. In this only authenticated persons' voices can access secured devices (like lockers).

2. Sensor: By using sensors we reduce the effort of declaring each and every device a particular name.
Example: If a person gives a command “lights on” the sensor will sense the person's location and only that light will get on.