

# Home Automation Chat Bot using IOT

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**Abstract**—*Home automation gives the power of accessing your home from any part of the world and it has come a long way since its inception. While many of its functions were very basic in the past, in this paper we are going to discuss a home automation system that not only controls your electrical appliances but also adds safety to your home and can be accessed using Telegram. Users can use a telegram application and chat with the system to control their home appliances by choosing their corresponding bot.*

**Keywords**-*Home Automation, Raspberry pi, Chat bot, Telegram, IOT.*

## I. INTRODUCTION

Home Automation is otherwise called the Domotics. The term Domotics comes from the Latin word „Domos“. The rise of the Information Technology industry and electronic industry is making home smart. Home Automation enables us to ON or OFF the home appliances which are used frequently. Home Automation is advancing now-a-days and automation is often seen in several fields. Now-a-days many technology platforms are available for the home automation process. With the

help of those platforms, the sensible home is often built in the universe. The important role of this platform is to make every device in the home connected and take necessary actions when a certain command is given. There are too many common home automation protocols that enable the different devices to speak up the common language to interact with them easily. The Protocol is must because the user gets their product or devices from different brands , only with the help of protocol functions the devices can communicate with other devices. Selection of protocol is a difficult task. Choosing the right protocol will help us to connect many devices of different brands. It must also reduce the consumption of power and reduces the cost for the user. There are popular technologies which include these are : • UPB • Wi-Fi • Bluetooth • INSTEON • Z-WAVE • Thread(Connect upto 250 Devices) • ZigBee and other dependable protocols which are used for Home Automations. Home automations using the Wi-Fi and LAN makes the foremost reliable systems. Transmission lines that are designed to carry electromagnetic waves whose wavelengths are shorter than or comparable to the length of

the line. It uses radio frequency for the communication. It is generally used for connecting internet but it can be also used for Home automation. The LAN uses cables, so it works slightly faster than a wireless connection. The Wi-Fi Based systems are a bit slower, but it provides a convenience of using it within range.

The Chatbot application is making the world even better and smart and it will be very easy for the users to communicate. It is changing the usage of other small devices. It will be more convenient for the user to use a chatbot rather than using a traditional handheld device. Chatbot is replacing the customer care and BPO industry as well. Using machine learning and AI is making chatbots smarter and making intelligent decisions. Nowadays people's are preferring to use chatbots and it has a huge market in the upcoming world. This is reducing the employees' work and many people will become unemployed. The Protocol is must because the user gets their product or devices from different brands, only with the help of protocol functions the devices can communicate with other devices.

## II. PROPOSED SYSTEM

A general Home Automation System does not add security to our home, but our system has security alerting systems that help us to take necessary actions before anything serious happens. Using a chatbot to control our home

makes it easy and brings interest for the users to use home automation systems, rather than using mobile or web applications. Using Telegram to chat with the system, users can access their home appliances from anywhere around the world and will be safe and secure such that nobody hackers can intrude.

### ADVANTAGES OF PROPOSED SYSTEM:

- Password Secured.
- Stores the data in cloud
- Many users are able to control the home.

### Software Requirements:

- Python: Python is a powerful multipurpose high level programming language. It is generally used to develop software solutions. In this paper we use python for creation and communication of chatbots.
- MQTT: MQTT is an OASIS standard messaging protocol for the Internet of Things (IoT). It is designed as an extremely lightweight publish/subscribe messaging transport that is ideal for connecting remote devices with a small code footprint and minimal network bandwidth.

### Hardware Requirement



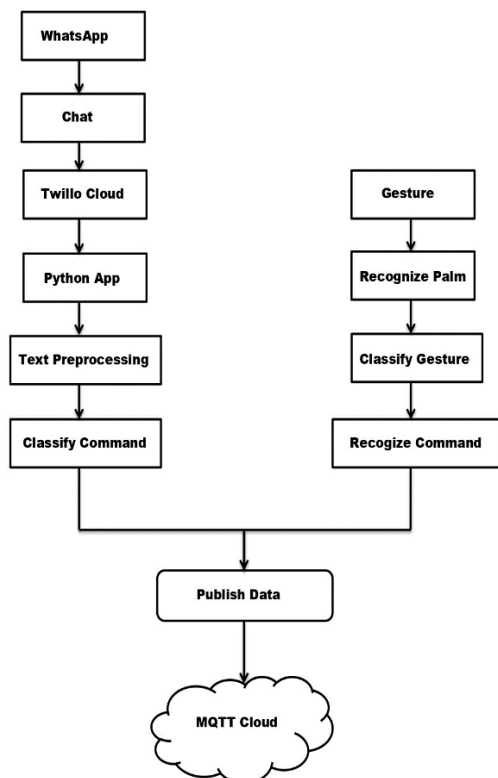
- Nodemcu Controller: The NodeMCU (Node MicroController Unit) is an open source software and hardware development environment that is built around a very inexpensive System-on-a-Chip (SoC) called the ESP8266.

- Relay: A relay is an electronic component that uses an electro-magnet to act as a mechanical switch. The main purpose of a relay is to switch on and off a high powered circuit from a low powered circuit. A relay switch can be seen in many different shapes, sizes, colors, electrical ratings and capabilities.



IV. OUTPUT

## Block Diagram



## II. SETTING UP BOT IN WHAT'S APP

**Step 1:** Search and select BotFather in What's App.

**Step 2:** Give the start/Hi command to My Bot by typing /start .

**Step 3:** You'll see a list of commands that help you create, edit, and manage your bots. Since it's your first time, you'll want /newbot .

**Step 4:** After giving the /newbot command, you get to pick a name and username for your bot. The name is what your users will see the bot as in their contacts list, and the username is how they'll find it.

**Step 5:** With that done, you'll be given your bot's API key. The API key is how Whatsapp knows the code you write is associated with this particular bot. Every bot has its own API

key.

## CONCLUSION

Thus, in this work we have successfully developed a chatbot that controls various appliances in the home. The user will have access to his/her home from anywhere in the world just by sending a message to the system. This system helps users to be more interactive with their home appliances and helps in saving electricity and it also helps in emergency systems.

For future work:

- Machine Learning & AI
- Voice Command
- Natural Language Processing
- Other chat applications like Telegram & Facebook Messenger.

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