

## Smart Home Automation System Using Raspberry Pi 3+

S.Manikandan<sup>1</sup>, Dr.S.Sujatha<sup>2</sup>

<sup>1</sup>(PG Student, Department of computer Applications/ University college of Engineering, Tiruchirappalli, India)

<sup>2</sup>(PROFESSOR & HEAD, Department of computer Applications/ University college of Engineering, Tiruchirappalli, India)

Corresponding Author: S.Manikandan

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**Abstract:** Internet of Things(IOT) conceptualize the idea of remotely connecting and monitoring real world object

(Things) through the internet. It's a comparatively recent concept of systems where internet-enable "Things" in the physical world equipped with sensors actuators and capable of interacting with the environment are connected to the Internet for monitoring and control of the "Things". Nowadays door locking system assigned in manual process and thump impress identification process and also face detection. This paper proposed to develop door locking system using the voice control access to help of USB mic with of raspberry pi 3+ kit and servo motor using relay processing via the Internet.

**Keywords:** Raspberry pi 3+, Tower Pro Sg servo motor, USB mic, relay.

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Date of Submission: 29-03-2019

Date of acceptance: 13-04-2019

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### I Introduction

Today, Internet application development demand is very high. So IoT is a major technology by which we can produce various useful internet applications. Basically, IoT is a network in which all physical objects are connected to the internet through network devices or routers and exchange data. Introduced in 2016, Raspberry Pi 3 Model B comes with a quad core processor that shows robust performance which is 10 times more than Raspberry Pi 1. And speed exhibits by Raspberry Pi 3 is 80% more than Raspberry Pi 2. Raspberry Pi 3 is tiny single board computer, introduced by Raspberry Pi Foundation, which comes with CPU, GPU, USB ports and I/O pins and capable of doing some simple functions like regular computer. Nowadays door locking system assigned in manual process and thump impress identification process and also face detection. This paper proposed to develop door locking system using voice control access via the internet.

### II Objectives

i Voice control accessing the door. ii To identify the unauthorized person via the alert message in our smart phones. iii To access the authorized person voice control only

### III Existing System

Initial process of door locking system assigned in

- i. Manual process.
- ii. Thump impress identification process.
- iii. Face detection.

### IV Literature Review

#### A. International Conference on Computing, Communication and Automation (ICCCA 2016) IOT Based Smart Security and Home Automation System. (DOI: 10.1109/CCAA.2016.7813916)

This IOT paper focuses on building a smart wireless home security system which sends alerts the owner by using Internet in case of any trespass and raises an alarm optionally. In existing system is that alert and the status sent by the Wi-Fi connected the microcontroller managed system can be received by user on his phone help of Internet. The microcontroller used in the current prototype is the TI-CC3200 Launchpad board which comes with an embedded micro-controller and an onboard Wi-Fi shield making use of which all the electrical appliances inside the home can be controlled and managed. Its proposed system to connect the camera to the microcontroller to monitoring process.

**B. International Journal of Computer Application.(IJCA-2015)****Design of an intelligent voice controlled Home Automation System. (DOI: 10.5120/21619-4904)**

Automation is a trending topic in the 21<sup>st</sup> century making it play an important role in our daily lives. The main attraction of any automated system is reducing human labor, effort, time and error due to human negligence. This Application are being developed on Android system that are useful to us in various ways. Another upcoming technology is natural language processing which enable us to command and control things with our voice. So its combines the microcontroller based voice controlled home automation system using smartphone. The proposed system is use of a Bluetooth module assist the use of the system from various location in our house.

**V Proposed System**

The proposed system of this paper Door locking system using the voice control access to help of USB mic with of raspberry pi 3+ kit and servo motor using relay. To accessing the door using passwords.

**VI Module Description Voice Recognition**

Speech Recognition is the ability of a machine or program to receive and interpret dictation or to understand and carry out spoken commands. In this concept is command control fully based on voice recognition concept. So in this process user can command the locking device to on/off control to the help of USB mic through the Internet.

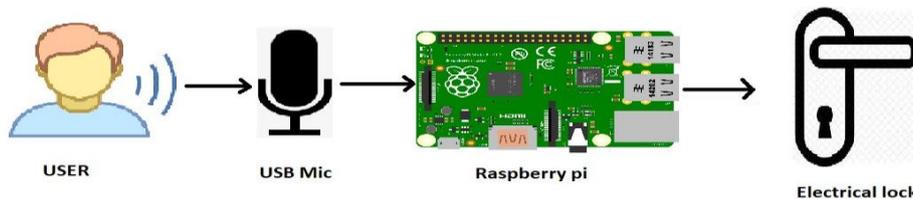
**User - USB mic - pi 3 - Lock****Raspberry Pi 3+**

The Raspberry Pi is a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse. It is a capable little device that enables people of all ages to explore computing, and to learn how to program in languages like Scratch and Python. **Tower Pro Sg Motor**

This is the most famous servo made by TowerPro.MG995 is a digital metal gear high torque servo for airplane, helicopter, RC-cars from 10 to 6-th scale and monster and many RC model.

**USB Mic**

A USB Microphone is an easy way of making high quality recordings on your computer or tablet in a snap. USB Mics are highly portable and work on PC, Mac, iPad. ... And often a USB mic will also have a headphone out, so as well as recording, you can listen directly to the sound through headphones.

**VII Architecture Diagram**

**Fig VII.1 Architecture Diagram of Door Locking Control Using Voice Security System.**

**VIII Conclusion and Future Process**

Our main goal of this paper is to ensure to secure door locking using voice security control. Implementation real time application and an upgraded device, we can solve the problems to an extent with further research and innovation, it can be use safe guard to whole family to secure purpose. The smart device which works with both hardware and software. The proposed system of this paper .To identify the unauthorized person via the alert message in our smart phones. To access the authorized person voice control only. Preferences and emergency process.

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S.Manikandan. " Smart Home Automation System Using Raspberry Pi 3+" IOSR Journal of Computer Engineering (IOSR-JCE) 21.2 (2019): 43-44.