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Telegram &Voice Controlled Home Automation on Raspberry Pi

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Abstract:
Voice Based Home Automation System using Raspberry Pi is the project which will be very useful for old age people and disabled people, basically for one's who cannot perform basic activities efficiently. It is the idea which corresponds to the new era of automation and technology. The main aim of the home automation system is to make life easier. Mobile devices are very common among everyone due to its user friendly interface and portability features. In this project we aim to control electrical home appliances by android voice commands using Wi-Fi as communication protocol between Raspberry Pi and Android device. Raspberry Pi 3 becomes a better option for home automation via internet due to its feature of inbuilt Wi-Fi and Bluetooth.

Key words: raspberry pi, Home Automation System, Voice.

1. INTRODUCTION

In today's day to day life automation can play a major role. Automation makes thing simple. The main attraction of any automated system is reducing human labor, efforts, time and errors due to human negligence.[1] A Raspberry Pi is a credit card-sized computer which can be used for developing various applications. This project is based on Internet of Things (IoT). Internet of Things is a network of devices such as electrical appliances for connectivity which enables these devices to connect and exchange data. This project represents a flexible way to control devices. In this project we are working on an android application where a user will provide voice commands for controlling devices such as "Turn light on" which will be connected to raspberry pi and according to it the required process will work via Wi-Fi. MySQL database and PHP is required for connectivity. This automation can be used majorly not only in home but offices and hospitals also user can register and authenticate himself/herself in android device and after successful login can give the input commands and operate the devices. It also provides security from third party users. It allows controlling number of home appliances simultaneously. Python is used as the main programming language which is default, provided by Raspberry Pi. This system requires micro SD card with an OS (Ubuntu Mate) for Raspberry Pi. Using this we can say a regular home is converted to smart home. technology which is in this project is natural language processing which helps to control devices. Voice controlled Home Automation System influences the power of Arduino to provide a full voice controlled automation system. With the help of NLP and the various hardware in mobile phone, it transmits voice to be used for controlling electrical devices. In this paper [2], Automation System based on ATmega328P by Arduino Uno. Various Sensors are used like Temperature Sensor (LM35 and Humidity Sensor (DHT11) which senses humidity also weather sensing is possible. The voice control system can be implemented with accuracy in voice recognition and better pitching analysis. More devices can be simulated and timer could be set for automatic operation. In this paper [3], Home Automation is done by voice recognition input to the raspberry pi .Voice command is given by the mic and a webcam is used as an input. The user could set a particular keyword which is given with the appropriate command for output. The AI present in the hardware will politely ask the user to speak the command after the keyword and will execute the command with audio acknowledgement. In this paper [4], Home Automation is done by the raspberry pi. It uses speech Recognition module microphone. The detected voice command makes system to switch the relay turn on off the lights and sound the buzzer when disabled person need help.

2.DATA FLOW DIAGRAM[DFD]:

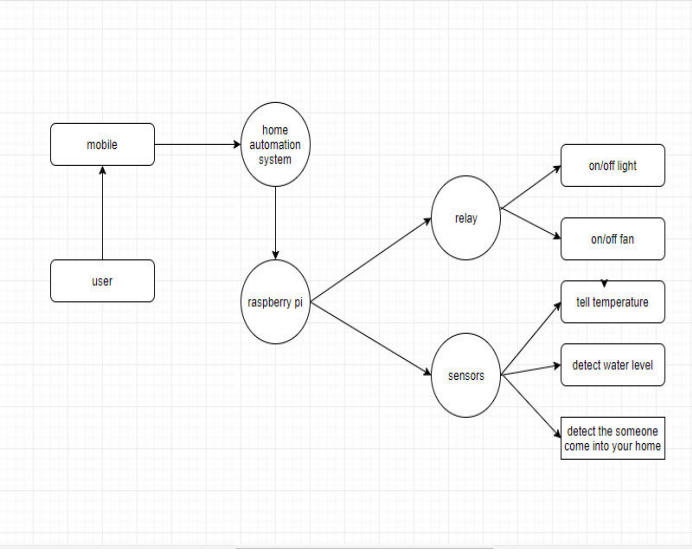

Figure.1.data flow diagram of telegram & voice controlled home automation

3. WORKING

In this project we are use the different sensors such as temperature sensor, water level sensor, relays, micke for the

recognition of the voice by using relay we have connected different devices such as light, fan, etc. when we run the program they firstly ask the question the say some command which is inbuilded such as on light it will work perfectly .it is also connected to chatting application like telegram. By using that we can control the light and fan which are connected to it. it will give the temperature to us and when temperature is high then it will automatically on the fan. in this way our project is run.

4. 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 person voice can access secured device (like locker).

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 person location and only that light will get on.

3. Smart Doors: The smart Doorbell can be made by implementing voice and video calls with the person standing right outside the door and the owner remotely. Thereby increasing the safety quotient of the system.

5. CONCLUSION

This project covers most important feature, in which it could provide the complete smart home environment. The voice controlled home automation using Raspberry Pi is proposed for the benefit of easy use and control of devices by elderly and disabled people. This project provides a basic system of home automation which can be easily implemented and used effectively. This system allow user to take decisions and to regulate the home appliances with the help of an android application , thus making one's life comfortable and at the same time remotely accessible through portable devices like android phones.

6. REFERENCES

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