Olive Spy (Smart Doorbell)

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Abstract - *This project is revolution in the technology of home security System. Most of the smart home systems try to bring solutions for this security problem, but many of those systems use numerous sensor devices. With the increasing security issues, it is necessary to use new technologies. We Have Created a Video based smart home security systems Which has recently became an efficient approach in field of video technology. Raspberry Pi is a strong and reliable embedded system device for the complex and challenging tasks bringing all the work done by a standard CPU under the roof of one single chipset. Using this technology in the proposed system will bring several advancements in providing safety and security in terms of visualizing and identifying the person who visits your home. In the overall proposed system, there will be two different significant techniques to provide home security. One is to use video technology to see the front door in real time even if no one is at home and another is to provide communication between the system and smart phone device. By connecting the system with the mobile phone through the cellular network, the owner of the house may have several opportunities such as getting instant video streaming, receiving and sending message and talking to the visitor. The experimental results indicate that the proposed system may provide a consistent support and assistance for a Safe and secure life.*

Key Words: **SMTP (Simple Mail Transfer Protocol), Raspberry PI 3, Internet of things (I0T), GPIO(General Purpose Input Output), M2M(Machine To Machine)**

1.INTRODUCTION

IOT (Internet of Things) and Machine to Machine Interpersonal Communication technologies which were developed for smart home system are becoming well known over the world. The system is developed by using Supported Mobile Communication and Safety Enabled Multifunctional Smart Security System. The proposed system will allow to communicate between visitors and owners of the house. Video camera system (the photo of visitors will be sent to the members of the house), instant message notification and dual audio process will be provided with videophone. In addition, system storage of image data will be provided using the system with increasing safety and security issues, the use of smart door system increased consistently with the advent of security related electronics, such as digital door locks, advanced video conversation devices, and wire-less home security networks. The system is integrated to the door for the recognition of people. In this project, we have built an IOT doorbell using Raspberry Pi with the help of Raspian OS platform. Once the visitor presses the doorbell, it will trigger

and an alert message will be sent using the platform by Email, so we know someone is at our doorstep no matter where we are. Visitors no longer need to call us and simply let the IOT doorbell to do the talking. To make it more advanced, Pi Camera is added so our IOT doorbell will take a picture of visitor, upload it using SMTP and attach the link in the email sent. If you want, you can add voice/video call capability on Raspberry Pi so you can talk to your visitor over the phone.

2. HARDWARE DESCRIPTION

The hardware of the proposed system is mainly consisting of the Raspberry pi and Bread Board Connections synced.

Raspberry pi is used as a tool to promote the code for accepting the input from the door bell and sending the message and picture of the stranger at the door to the house member's email. This is the major hardware tool used for this project.
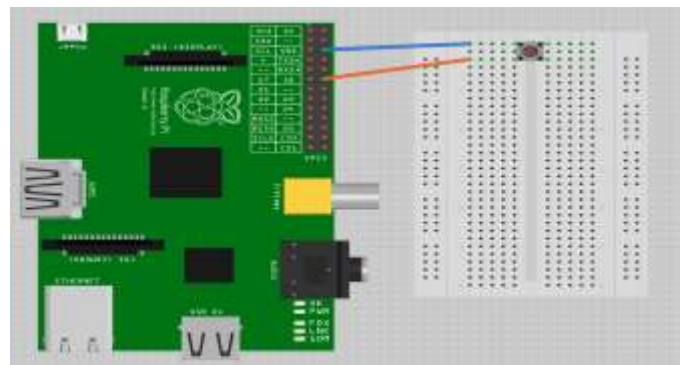

Fig 1: Raspberry Pi with Pi Camera Attached

Fig 2: Raspberry Pi Connected with Bread Board

PI & BREAD BOARD CONNECTIONS

The GPIO Pins On the Pi Are Connected with The Female Ports On the Bread Board. For Our Connection, We Need Two Male to Female Wires Whose One End Is Connected On the Bread Board and The Other End Is Connected On the Raspberry Pi. Then We Need to Connect Our Button On the Bread Board Pressing Which Our Camera Input Will Be Triggered and an Image Will We Captured Which Will Be Straight Away Sent to The Email Using SMTP. For The Image to Be Stored in The System We Will Require a Data Storage Which Can Be Provided by a SD Card.

3. SOFTWARE DESCRIPTION

- Raspbian OS (raspberrpi.org),

- Putty (www.putty.org),

- SD card formatter (www.sdcard.org)

3.1 Steps to install OS:

- Insert micro SD card and format it using SD card Formatter.

- Extract Raspbian OS file to get image file.

- Remove the SD card and insert into the raspberry pi.

3.2 Steps for raspberry pi:

- Connect micro USB cable to the raspberry pi to power to the raspberry pi.

- Enable Wi-Fi in Your Raspberry Pi 3.0.

- Wait for one to two minutes, as raspberry will be booting after that move on to next steps.

3.3 Setting up real VNC viewer

- Go to File - new connection

- Type VNC server: - "IP address from step2" :5901 Click ok.

- Right click the icon with the name "anything" and click connect.

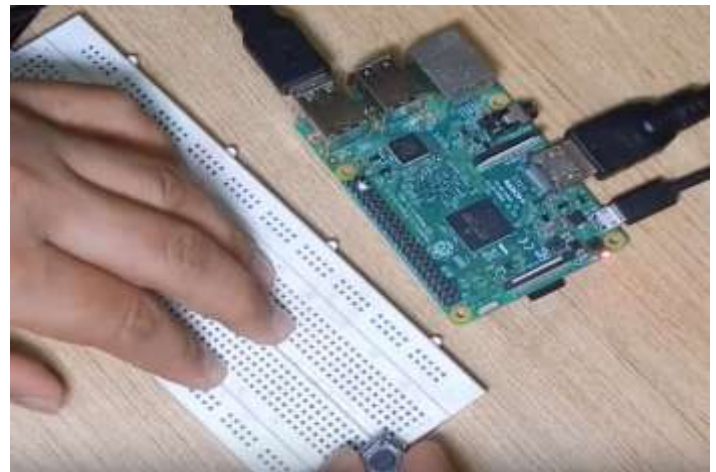- Type in the password.

- You are inside the raspbian.
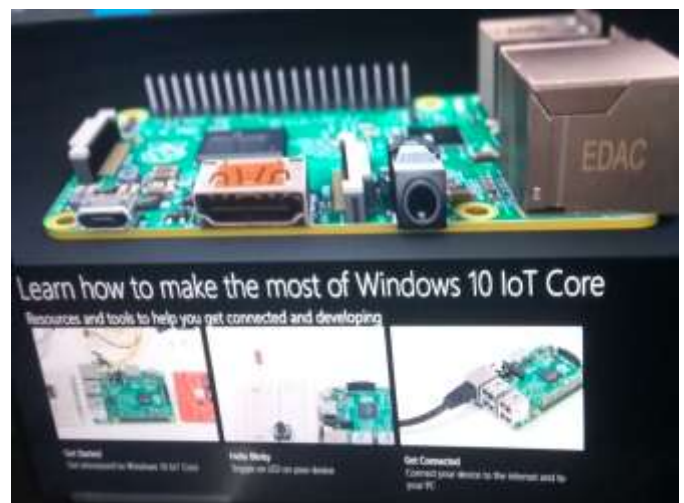

Fig 3: Establishing Connections

Fig 4: Windows OS in Pi

Fig 5: Raspberry Pi Configurations

4. CONCLUSIONS

This project comprises of a raspberry pi IOT based smart doorbell. The experimental results of the system proposed indicate that it provides a consistent support and assistance for safe and secure life with minimum cost of the system. Raspberry Pi is a strong and reliable embedded system device for the complex and challenging tasks. Using this technology in the proposed system we can bring several advantages in providing safety and security in the field of home automation.

5. REFERENCES

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