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**End-Term Project Report**

on

###### Securing Your Home with IOT: A Smart Security System

**Project Members**

PF12 Amir Shakeel

1032200623

PF24 Ankit Kumar

1032201304

PF30 Swayam Sharma

1032201710

PF43 Parth Mogadpally

1032202204

**Under the Internal Guidance of**

**Prof. Umesh Raut**

###### School of Computer Engineering and Technology MIT World Peace University, Kothrud,

###### Pune 411 038, Maharashtra - India

###### 2022-2



**SCHOOL OF COMPUTER ENGINEERING AND TECHNOLOGY**

**C E R T I F I C A T E**

This is to certify that, Ankit Kumar, Swayam Sharma

Parth Mogadpally

Amir Shakeel

of BTech.( Computer Science & Engineering) have completed their project titled “*Securing Your Home with IOT: A Smart Security System”* and have submitted this Mini Project Report towards fulfillment of the requirement for the Degree- Bachelor of Computer Science & Engineering (TY. BTech-CSE) for the academic year 2022-2023.

|  |  |  |  |
| --- | --- | --- | --- |
| **[Dr/ Prof.** | **Umesh Raut]** |  | **[Dr. Vrushali Kulkarni]** |
| Project Guide |  |  | Program Head |
| School of CET |  |  | School of CET |

MIT World Peace University, Pune MIT World Peace University, Pune

Internal Examiner:

External Examiner:

**Date:**

**Acknowledgement**

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Thank you all once again for your invaluable support and guidance.

# **Abstract**

Internet of Things (IoT) conceptualizes the idea of remotely connecting and monitoring real world objects (things) through the Internet [1]. When it comes to our house, this concept can be aptly incorporated to make it smarter, safer and automated. This IoT project focuses on building a smart wireless home security system which sends alerts to the owner by using Internet in case of any trespass and raises an alarm optionally.

Besides, the same can also be utilized for home automation by making use of the same set of sensors . The leverage obtained by preferring this system over the similar kinds of existing systems is that the alerts and the status sent by the WIFI connected microcontroller managed system can be received by the user on his phone from any distance irrespective of whether his mobile phone is connected to the internet . We are using PIR sensor to detect motion and through raspberry using internet it will notify the owner.

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Chapter 4

Introduction

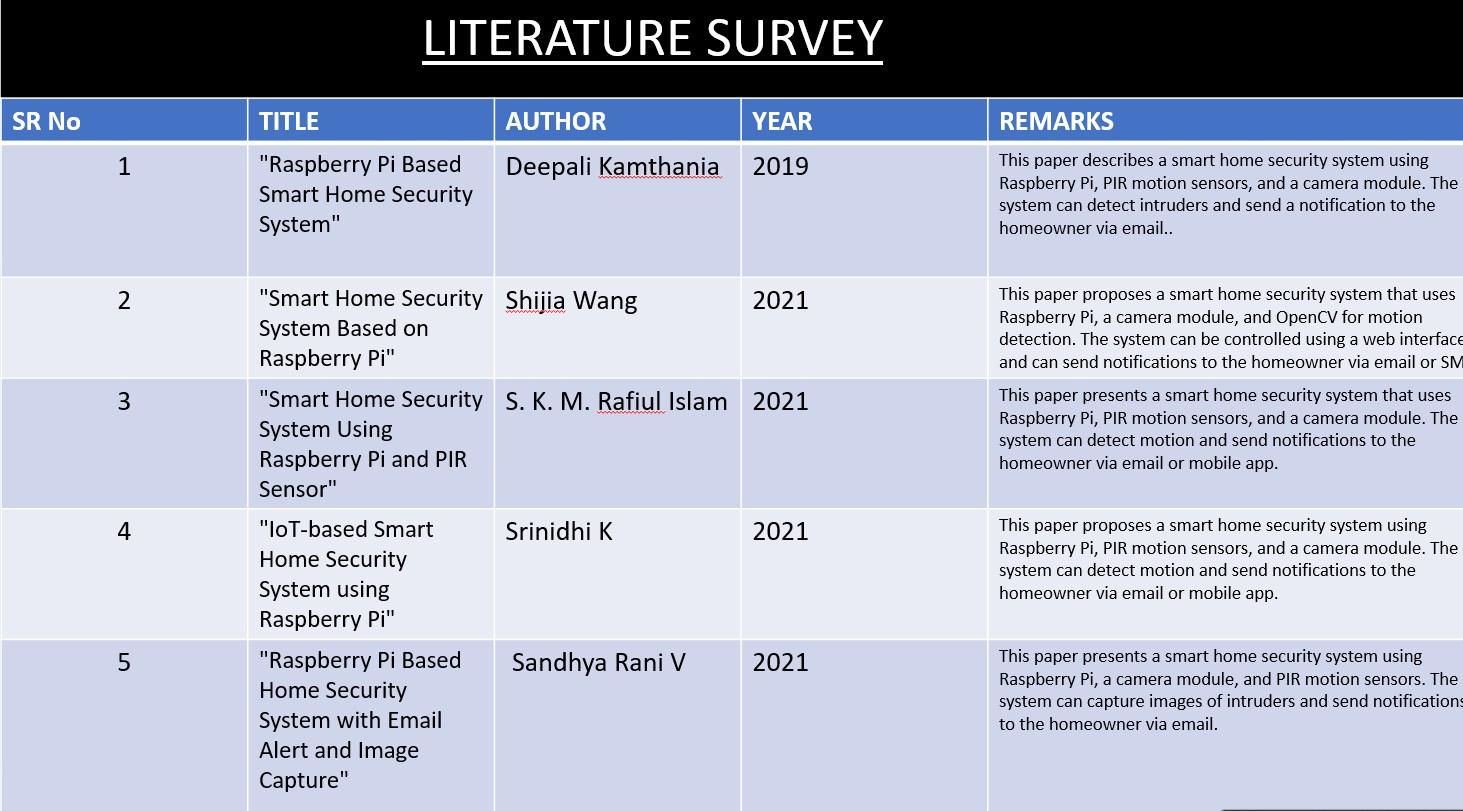
**Unlock the Benefits of IoT-Based Smart Security**

* The Internet of Things (IoT) has revolutionized the way we think about security. IoT- based smart security systems are the perfect way to keep your home safe and secure. With sensors that track movement and notify the owner of the house, you can rest easy knowing your home is being monitored. Plus, when something is detected, the system can start a live camera feed to give you a real-time view of what’s happening.
* IoT-based smart security systems are also easy to install and maintain. With a few simple steps, you can have your home monitored and secure within minutes. Plus, you can customize the settings to fit your needs, so you can be sure your home is always safe and secure.

**Stay Connected with Smart Security**

* With IoT-based smart security systems, you can stay connected with what’s happening in your home. You can receive real-time notifications when something is detected, so you can take action right away. Plus, you can access the live camera feed from anywhere, so you can keep an eye on your home even when you’re away.
* IoT-based smart security systems also offer peace of mind. You can rest easy knowing your home is being monitored and that you’ll be notified if something is detected. Plus, you can customize the settings to fit your needs, so you can be sure your home is always safe and secure.

Chapter 2 **Literature Survey**



Chapter 3

**Problem Statement**

#### Securing Your Home with IOT: A Smart Security System

##### Project Scope

* We can use commercialize it as smart doorbell system for homes . It will secure the house. IoT-based smart security systems are also easy to install and maintain. With a few simple steps, you can have your home monitored and secure within minutes. Plus, you can customize the settings to fit your needs, so you can be sure your home is always safe and secure.
* The Internet of Things (IoT) has revolutionized the way we think about security. IoT-based smart security systems are the perfect way to keep your home safe and secure. With sensors that track movement and notify the owner of the house, you can rest easy knowing your home is being monitored. Plus, when something is detected, the system can start a live camera feed to give you a real-time view of what’s happening

##### **Project Limitations**

The only demerit this system has is it will notify the user hundred of times due to movement detected of known person(not intruders) or animal or person just walking by your door.

##### **Project Objectives**

* IoT-based smart security systems offer a range of benefits for homeowners. With real-time notifications and a live camera feed, you can stay connected with what’s happening. Plus, you can customize the settings to fit your needs, so you can be sure your home is always safe and secure.
* With an IoT-based smart security system, you can enjoy peace of mind knowing your home is being monitored and that you’ll be notified if something is detected. Plus, you can access the live camera feed from anywhere, so you can keep an eye on your home even when you’re aw
* Resources

Hardware-

Raspberry pi

PIR sensor

Wifi

Camera

Memory card

Jump wires

Wifi usb modul

Chapter 4 Project Requirements

**Chapter 5**

**System Analysis Proposed Architecture**

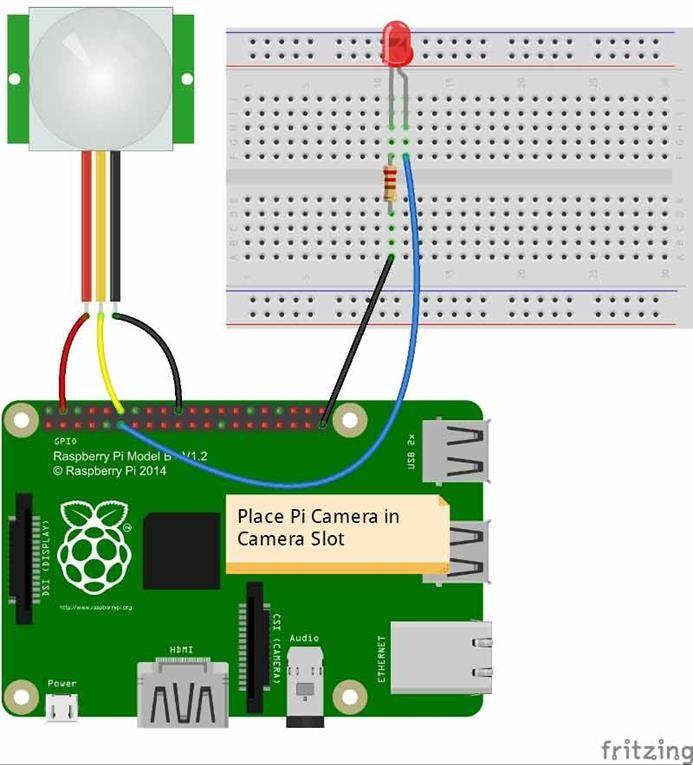


Fig1: architecture of project

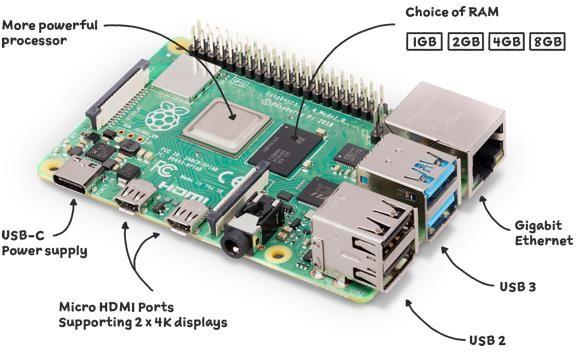
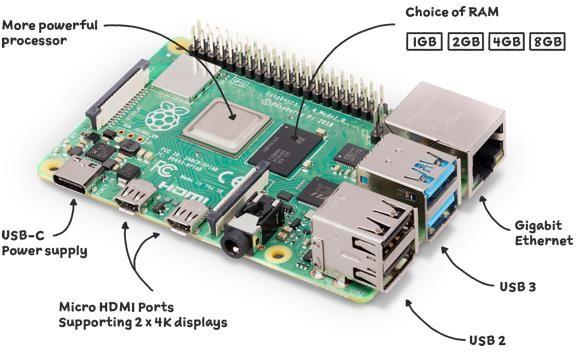


Fig2: structure of raspberry pi

CHAPTER 6: Project plan

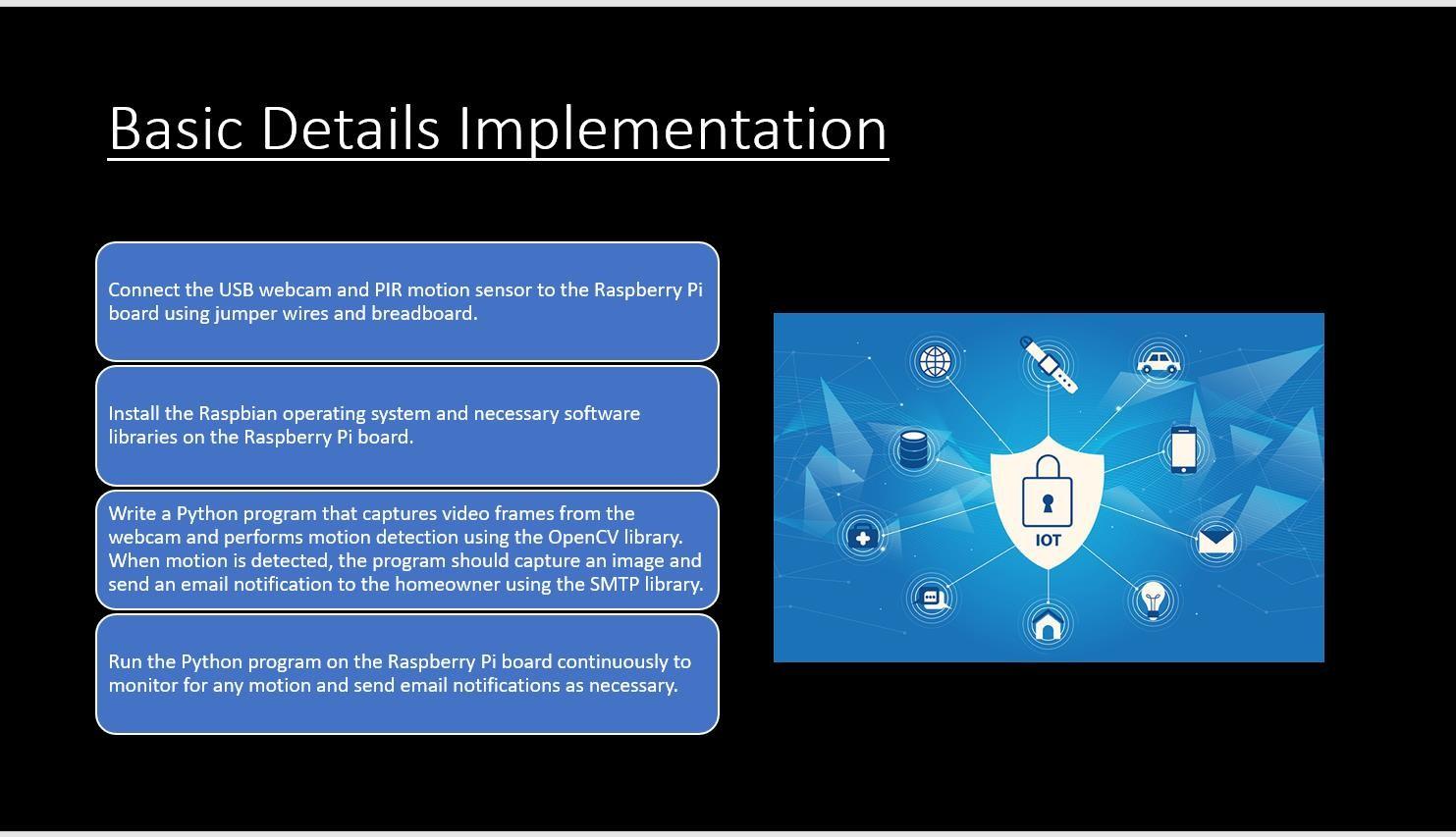


##### STEPS-

##### 1.Setting Up Your Hardware Device

##### 2.SETTING UP YOUR RASPBERRY PI WITH RASPBIAN OS like you need to install Raspbian on your micro sd card that you will be using in your Raspberry Pi.

##### 3. INSTALL OPENCV AND REQUIRED LIBRARIES



## Chapter 7: Implementation

## Fig 3: working model

Fig 3: working model

### System Architecture and Design

##### Raspberry Pi running Raspbian

##### USB Camera

##### PIR Sensor

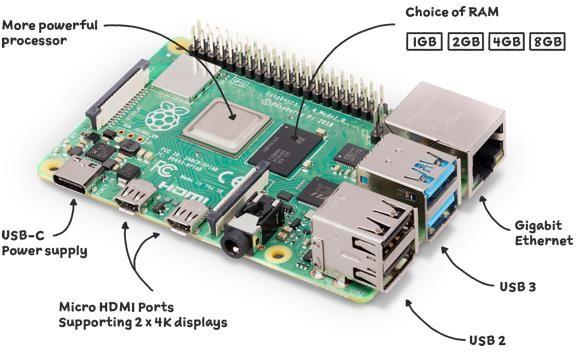
##### USB Wi-Fi Module for internet access ( optional, if you connect your Ethernet cable for internet, USB Wi-Fi Module is not needed )

##### Power Adapter to power the Rsapberry Pi

### Methodology/Algorithms used

STEPS:

* 1.Setting Up Your Hardware Device
* 2.SETTING UP YOUR RASPBERRY PI WITH RASPBIAN OS like you need to install Raspbian on your micro sd card that you will be using in your Raspberry Pi.
* 3. INSTALL OPENCV AND REQUIRED LIBRARIES



### Basic Details Implementation

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Chapter 8

Conclusion

In conclusion, an IoT-based smart security system using Raspberry Pi, webcam, motion detection, and email notification is a cost- effective, efficient, and scalable solution for improving home security. The system can be easily installed without professional help, and it can be accessed remotely from anywhere with an internet conn

**Chapter 9**

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**Plagiarism Report**

A screenshot of a cell phone

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