

# SECURE HOME AUTOMATION USING RASPBERRY PI BY TELEGRAM APP

PRESENTED BY: (1923ITP001)

**G HARSHITHA** (19K61A1215)  
**N AKANKSHA** (19K61A1240)  
**A HARIKA** (19K61A1201)

UNDER GUIDANCE OF:  
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INFORMATION TECHNOLOGY, SITE



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## G HARSHITHA (19K61A1215)

R .no	Name	Comments	Action Taken
R1	Dr K. Subhash Bhagavan	Refer more algorithms in literature survey.	More libraries are Referred.
R2	Dr A V S. Chandra Shekhar	Asked to change the literature survey with more relevancy.	More models are referred respective to system.
R3	Mr G. Nageswararao	Asked to refer methodology of the papers.	Improved presentation techniques.
R4	Mr U. Srinadh	Refer more about the block diagrams.	More techniques are referred.
R5	Dr A V S. Siva Rama Rao	Modify block diagram.	More tools are verified.

# Previous Review Comments

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**N AKANKSHA (19K61A1240)**

R .no	Name	Comments	Action Taken
R1	Dr K. Subhash Bhagavan	Refer recent papers for literature survey.	More recent papers are referred.
R2	Dr A V S. Chandra Shekhar	Refer more techniques and models used.	More models are referred respective to system.
R3	Mr G. Nageswararao	Modify algorithms diagram.	Improved presentation techniques.
R4	Mr U. Srinadh	Refer more tools for methods used.	More tools are referred.
R5	Dr A V S. Siva Rama Rao	Refer more algorithms in literature survey.	More Algorithms related to System are verified.

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## A HARIKA (19K61A1201)

R .no	Name	Comments	Action Taken
R1	Dr K. Subhash Bhagavan	Refer more libraries.	More libraries are Referred.
R2	Dr A V S. Chandra Shekhar	Asked to refer methodology of the papers.	More models are referred respective to system.
R3	Mr G. Nageswararao	Modify block diagram.	Improved presentation techniques.
R4	Mr U. Srinadh	Refer more techniques and models used.	More techniques are referred.
R5	Dr A V S. Siva Rama Rao	Refer more tools for methods used.	More tools are verified.

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# Abstract

In today's generation we are facing household security issues. So, we are resolving these issues by our proposed system. The goal of this project is to help users improve the door security of sensitive places by using face detection and recognition. If any unauthorized faces was detected automatically system will capture the image and will send the image to authorized person through telegram.

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# Introduction

- ▶ IR sensor is used to sense any motion in front door, which triggers camera to capture the image and send it to the owner through the telegram.
- ▶ Unlike existing notification systems, ours proposed system uses Telegram notification to notify the owner. The advantage of using telegram is that some of the senior citizens does not use G-mail or Twitter as it requires the account creation and find it difficult to operate.

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# Methodology

## Step by Step initialization

- ▶ **Step 1:** SD Card - This contains the faces of person who are authenticated to enter the house.
- ▶ **Step 2:** Start-up of Secure Door – The user can keep the security system ON/OFF depending on whether he is available at home or not. When ‘start’ command is typed on the Telegram then it activates the monitoring system.
- ▶ **Step 3:** Object Identification using IR Sensor -IR sensor is activated when it senses any motion near the door and activates the camera.



# Methodology...

- ▶ **Step 4:** Identification of Person - When image is clicked, face recognition is done against the image stored in the SD card.
- ▶ **Step 5:** Door Action – Authenticated person is allowed to enter the house and corresponding detail message about the person is shared with the owner.

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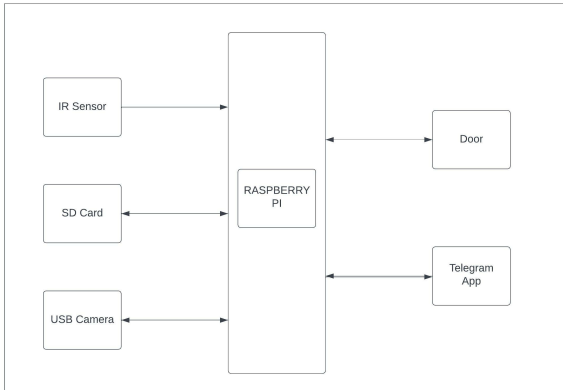
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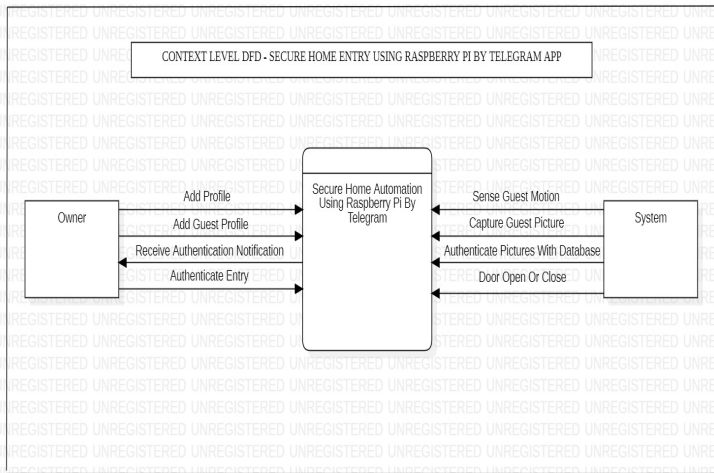
# Block Diagram

In this proposal to increase the interaction with home security system various additional modules like image processing and Telegram are used.

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# Data Flow Diagrams

## Level 0 DFD:



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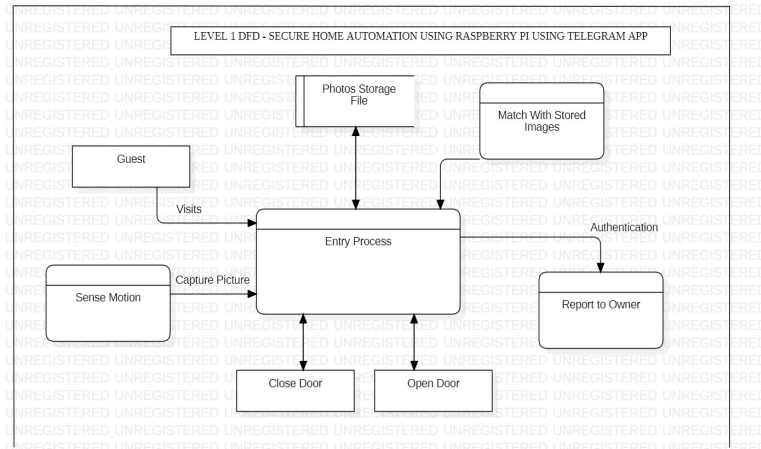
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# Data Flow Diagrams...

## Level 1 DFD:



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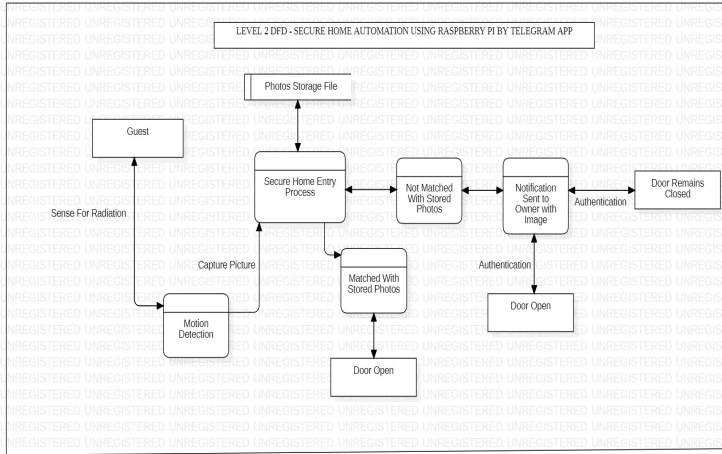
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# Data Flow Diagrams...

## Level 2 DFD:



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# (ER)Entity Relationship Diagram

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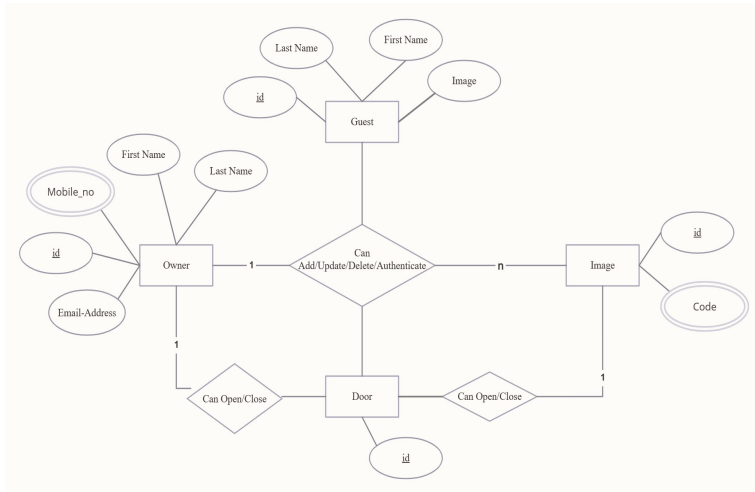
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# Control Flow

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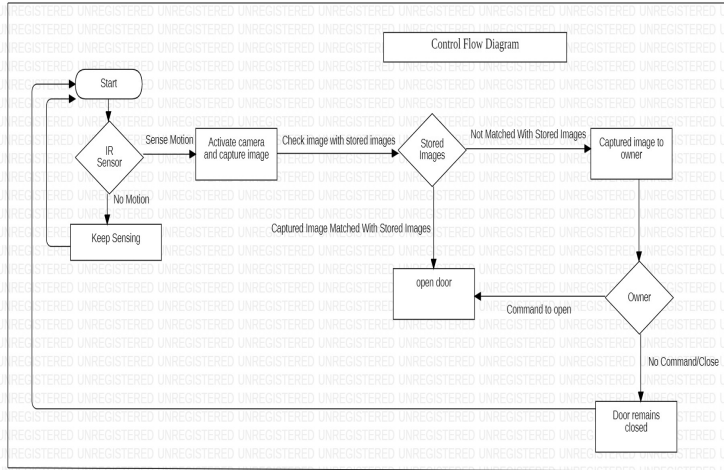
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# Literature Survey

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### IOT HOME AUTOMATION: DASHI AND DEEP

Abstract	Automation changes the way of how people live, An android app is designed to help elderly people.
Objective	This system is Implemented uses easy lot web server and WiFi which has and good future development use of the upgraded Sensors increases precision of sensor, These can be Implemented to Large Scales (like up to street Nights).
Methodology	This system includes use of LDR sensor for light intensity and IR Sensor to detect the human presence, The Raspberry pi here in this Paper is used instead of PIR sensors which are more effective than normal sensors.

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# Literature Survey...

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### IOT HOME AUTOMATION: DASHI AND DEEP

Results	This system is successfully implemented, this is a very different concept from those available in market where a WI-FI module is setup.
Conclusion	This system is easy to use,saves unnecessary power consumption, easy to implement and low compared to other systems and has more related features.
Limitations	Security, privacy, and designing, developing the system is very complex.

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# Literature Survey...

## IOT BASED SMART SECURITY AND SMART AUTOMATION: SUDHA AND PRIYA

Abstract	The IOT providing an easy way of life with comforts to human being by managing and interacting remotely control of home appliances. This proposed system contains two Node MCU.
Objective	The objective of this paper is to experimental setup of a home automation system by using IOT concept.
Methodology	The Proposed Model of home automation system contains Server, actuators. This system can control, managed remotely of room temperature.

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# Literature Survey...

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### IOT BASED SMART SECURITY AND SMART AUTOMATION: SUDHA AND PRIYA

Results	The objective of this paper is to experimental setup of a home automation system by using IoT concept.
Conclusion	This proposed home automation system can be scaled up to apartments but when it will be implemented on large scale then security issues will be occurred.
Limitations	Security has many issues during implementation.

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# Requirements

Implementation design of the proposed system requires the following requirements:

Hardware Requirements, Software Requirements and User Requirements

## Hardware Requirements:

- ▶ Raspberry Pi board
- ▶ USB Camera
- ▶ IR Sensor
- ▶ SD Card
- ▶ Door

# Requirements...

## Software Requirements:

- ▶ IDLE Software
- ▶ Open CV

## Requirements at user end:

- ▶ Telegram

# Advantages

Face recognition verifies who you are, not what you carry (key card) or what you know (PIN). Hence, it's inherently more secure for controlling access to buildings. Hands free we can simply walk up and look at the reader and the door unlocks.

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# Disadvantages

As with any technology, there are drawbacks to using facial recognition, such as the violation of rights and personal freedoms that it presents, potential data theft and the risk of over reliance on inaccurate systems.

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# Attained Outcome

- ▶ Finally, outcome of the system is a secure home entry with owner's permission.
- ▶ The intrusion to household's can be easily avoided by this system.

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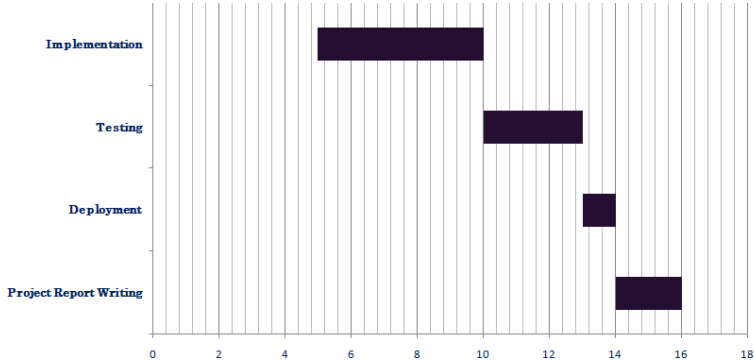
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# Plan Of Action

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# Future Scope

- By using the raspberry pi the proposed system can be used as a Smart Surveillance Monitoring security system. As we are using open CV in our project which can be used for designing an attendance system of the class. Therefore, no one can mark proxy of another student. The technology is scalable, upgrading can be done easily with the proposed work.

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# ANY QUERIES?

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# THANK YOU!

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