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# SMART SURVEILLANCE SYSTEM

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## ABSTRACT

*The project has been initialized to ensure an anti-theft home concept at minimum cost. when compared to other available systems, it is low cost and user-friendly. in this concept we are providing complete security to your home by using the existing things. So that we can afford the best security at a low cost. We can access the project from any point of the world.*

*And in this project, we provide lot of additional features such as radar tracking, double door system to provide more security to the people at the same cost.*

**KEYWORDS**: *Smart Camera, Low Cost, Radar System, IRsensor, Phone Call System, Access from Anywhere, User-Friendly, Audio Capturing Camera*

## INTRODUCTION

- In our day-to-day life, we are in the urge of earning wealth for our future and our present living. Though we earn a lot more we must be conscious about the saving and security of that wealth.

- CCTV surveillance is one such way to keep an eye on our valuable resources.

- Such cameras are mostly used only for commercial purposes, and in some houses who can afford to buy at any price.

- The main motive of our project is to take this surveillance concept to every nook and corner of the world, affordable to many people at a very low cost

## APPLICATION

CCTV (Closed Circuit Television), also known as Video Surveillance is the use of video cameras to monitor the interior and exterior of a property, transmitting the signal to a monitor or a set of monitors

Many countries now employ public video surveillance as a primary tool to monitor population movements and to prevent crime and terrorism, both in the private and public sectors.

Surveillance cameras in public places: Used to ensure public safety, rarely will anyone attempt to harm you when they know their actions are recorded and monitored. Gives additional protection in banks and other public sectors so that the police can both prevent crimes from happening and can quickly solve cases with strong pieces of evidence.

Surveillance in private sectors: CCTV is affordable to owners of private sectors and some people for their home surveillance to prevent theft and vandalism and also to collect pieces of evidence and keep records of the activities on their properties.

**When Comparing to the Normal CCTV, Our Surveillance System has Additional Features Such As:**

- Phone Call Alert

- Audio and video capture

- Radar Tracking

- Double Layer Door Protection

**Software and Hardware Used**

- Smart camera (mobile app)

- Arduino

- Processing 3

- IR sensor

- Android mobile

- Old keypad mobile

- Vibration motor

- Arduino

- CD driver mechanism

- Battery and wires

## METHODOLOGY AND SYSTEM DESIGN

**Circuit Connection**

- Place their sensor on the area where it is to be monitored.

- IR sensor senses any object which passes through its radius and gives an output.

- The output terminal of the IR sensor is divided into two connections, one connected to a button-type mobile and another one is connected to a vibration motor.

**Further, The Processing Is Divided Into Two Phases:**

**Phase 1: Phone Call Alert**

One output terminal of the IR sensor is soldered to anyone button of the keypad mobile (the only working condition required for mobile is a sim slot and anyone keypad button).

When the IR sensor captures or senses any object within its range the circuit gets connected and the button which is soldered at the other end gets long pressed (i.e. speed dial) and a call is made to the number which is stored in the sim by the user.

## Phase 2: Audio and Video Capturing

The other output terminal of the IR sensor is connected to a vibration motor.

When the IR sensor captures or senses any object within its range the vibration motor receives supply and gets vibrated. The vibration motor is placed behind an android device (maybe any base variant, no specs required).

A mobile application (self-developed) named "Smart cam" senses this vibration given by the vibrator and opens the camera automatically and starts capturing the audio and video of the surroundings.

The video recorded is directly saved to google drive and can be accessed from anywhere at any time.

In case of more advanced technology and features, some more Updates can be added to:

## Radar Sensing

When the IR sensor captures or senses any object within its range • A RADAR made of Arduino chip receives the signal given by the IR sensor and monitors the range, latitude, longitude, angle, and the direction from which the object enters into the range using the software Processor3.This feature is used for better accuracy.

## Double Layered Door System

In a CD drive, if we press the button, the drive opens and closes. • Similarly, when the IR sensor captures or senses any object within its range the signal is sensed by an additional door layer and it automatically closes, which is a surprise to the intruder who finds no way or a delay in time to escape.

This can be controlled by the user from anywhere by using GSM.

## OBJECTIVES

- To make surveillance system available for every common person

- To ensure protection and safety for everyone

- To collect records and pieces of evidence for future purpose

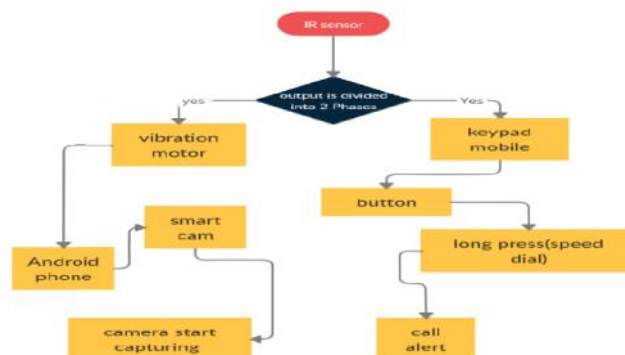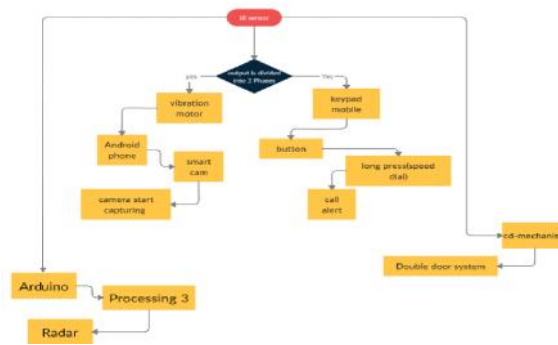- To make our country a better place to live



**Figure 1**

**Figure 2**

## ADVANTAGES

- Low cost

- Less consumption of power and storage

- No need for additional storage disks

- Records can be instantly accessed anywhere using google drive

- Double layer door protections provide less chance for the intruder to escape

- Phone call alert makes this system more efficient compared to other surveillance systems

- User friendly and only works when any object is sensed by the sensor else remains idle

## LIMITATIONS

- Separate mobile is required for working

- RADAR feature can be accessed and viewed only within a range.

## CONCLUSIONS

This project is affordable by any person and since its user friendly there is no need for any additional practice for usage. In the future, this project can be made even more advanced by applying IoT and AI Techniques to it

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