INVENTION DISCLOSURE FORM

A. GENERAL INFORMATION:

1. Title of the proposed invention

Advance Security Management System

2. Details of Applicant/s:

#	Full Name/s	Nationality	Complete address	Type: Legal Entity or Start Up or Natural Person(s)
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3. Details of Inventor/s:

a. Is/Are the Applicant/s also the inventor/s: Yes

4. Date of the proposed invention (Earliest conception date of the proposed invention):

Date: 29/03/2023

B. QUESTIONNAIRE:

1. Field and general description of the proposed invention

Nowadays, people want one sole thing that is to make them feel safe and secure. The Most commonly used security system is the CCTV (Closed Circuit Television). The cost of implementation of CCTV varies depending upon the size and use of the system. It is usually installed in hospitals, malls, parking lots etc. However, with the help Of CCTV one can monitor the area 24/7, or the footage if stored in a location can Be Retrieved when required. Although it can be used to deter crime and allows the Authorities to identify and solve a crime, it doesn't detect or recognize the person Who is involved. We have implemented a system which provides multiple features like Object Detection, Face Detection and Count Number of objects. We provide the option such as if anyone can enter who is an unknown person and take some things then our system can detect the things which are stolen. and many more. Thus, we are dealing with real time-

image processing. Open-source computer vision (OpenCV) software, a powerful library of image processing tools, is a good choice. With the help of a smart surveillance system, we have achieved a system that can record the event, detect, and recognize the person, count.

2. Existing technology

Before starting this project we have researched some existing systems which are already made and addressing them we have made the following conclusion: Network CCTV Camera - By inserting IP to the existing CCTV, CCTV can be managed individually, and as long as internet is available, remote management and remote monitoring are available. Collection of information by CCTV system that uses public IP: as the system is linked to various paths, exposure of IP address as a problem that information on the operating system and application used by CCTV system server can be collected with ease. Hackers can use this as a starting point to make different hacking attempts based on information collected from each server. Lack of data safety from nonapplication of encryption on video data: existing analog CCTV and network CDTV with relatively low hardware specifications have a problem in which real-time data cannot be encrypted. This results in easy exposure of data stored in servers. Video Steganography Application Plan for Network CCTV Monitoring Security – This proposes a method to protect the system by inserting steganography to the real-time video of CCTV monitoring system provided in open source. Though there are some demerits also like it need to have "free" space in the carrier media. This means usually deleting part of the data that is invisible such as the alpha channel in a picture and replacing it with the hidden data. Sometimes it is only possible to compress this "useless" data, not delete it. Also In a highly compressed video it might be close to impossible to embed additional, hidden information. As steganography on itself is easy to detect, the embedded data has to be encrypted. Also an uncompressed image, the maximum amount of embeddable information is usually at most 30%. In practice however it will be in the single digit range.

3. Drawbacks / Problems / Challenges in the prior art that the proposed invention addresses

CCTV systems are not enough as criminals take advantage of blackouts (zones which are not covered by cameras) and enter the premises. Also in many cases it was found that criminals disrupted the power supply to the CCTV cameras or destroyed the cameras thus leaving no trace of the crime they committed.

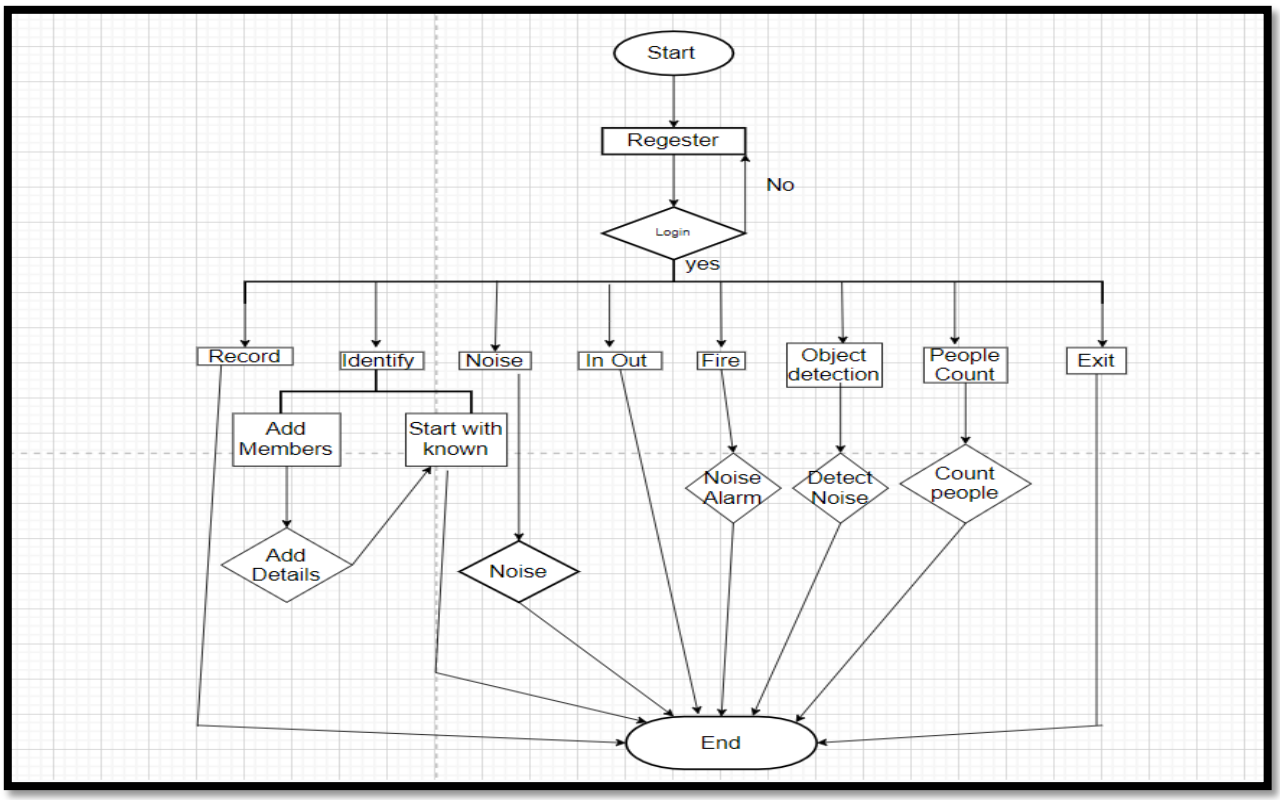
4. Solution proposed by the proposed invention

By using modern technologies like motion sensors, image recognition systems and IoT and biometrics, this can make offices and homes more secure. We design a system consisting of multiple technologies and alerts the residents far away even when there is no one in the house. Sensors, facial recognition, footprint sensors, and more to increase the security of homes, offices, and buildings. Just imagine the applications—doors can be unlocked through facial recognition, lights can be activated with motion or footprint sensors, the camera is activated, and a live feed is triggered on your smartphone, or the police can automatically be notified if an intruder breaks a lock in your home.

5. Detailed Description of the proposed invention

Security Management System and its requirement in today's time is widely understood from the fact that people throughout the country have started opting for CCTV cameras in their home, offices and business. Although only the CCTV systems are not enough as criminals take advantage of blackouts (zones which are not covered by cameras) and enter the premises. Also in many cases it was found that criminals disrupted the power supply to the CCTV cameras or destroyed the cameras thus leaving no trace of the crime they committed. The Security Management System and its requirement in today's time is widely understood from the fact that people throughout the country have started opting for CCTV cameras in their home. Although only the CCTV systems are not enough as criminals take advantage of blackouts(zones which are not covered by cameras) and enter houses. Addressing this problem statement by using modern technologies like motion sensors, image recognition systems and IoT and biometrics, we can make our offices and home more secure. Thus, there is a need to develop a robust security system which is not dependent on CCTV or any one technology but consists of multiple technologies and alerts the residents far away even when there is no one in the house. When it comes to the security of your business, home, offices, facial recognition, footprint sensors, and more to increase the security of homes, offices, and buildings. Just imagine the applications—doors can be unlocked through facial recognition, lights can be activated with motion or footprint sensors, the camera is activated, and a live feed is triggered on your smartphone, or the police can automatically be notified if an intruder breaks a lock in your home. Use of AI, motion sensors and many cutting edge technology will result in a more robust system.

6. Drawings / Flowcharts / Block diagrams / Circuit diagrams



7. Novel / Inventive features

We use or design following features in our system.

a. Monitor Feature:

This feature is used to find what is the thing which is stolen from the frame which is visible to the webcam. Meaning It constantly monitors the frames and checks which object or thing from the frame has been taken away by the thief.

a. Identify Person/Object:

This feature is very useful feature, It is used to find if the person the frame is known or not. It will identify the person in the frame and if it is known then we can see the person's name with his id number.

b. Motion Detection:

This feature helps to detect the motion that means there is a frame where no motion is detected as soon as motion is detected the alarm is raised and we can identify that there is some motion.

c. Visitors in the room:

This is the feature which can detect if someone has entered in the room or gone out. It also captures and save the images the person who entered and went out of the frame.

d. Count Number of objects/people:

This is the feature which will count the number of people that are present in the frame.

e. Record:

This is the feature which will record the live footage with current date and time.

f. Fire Detection:

This feature we give notification when the dangerous condition of fire occurred and the alarm is on at that time.

8. Utility of the proposed invention

This System can be used in many places such as:

1. Place where there is large crowd of people is present for counting the public and recording the view.

2. In Households Purposes for Security Purpose.

3. In Industries for Fire Detection.

4. In Events for Counting the public.

9. Advantages

Our system allows user to view videos even if he is at some remote place. Due to http protocol usage, the application provides online video streaming functionality so that user can view the videos from through android device as well as user's computer.

1. Our system uses image matching technique, so it gives more precise and accurate results.

2. Entire Smart surveillance can be made remote using this architecture. User can even control the system

through a remote place.

3. The user gets notified as soon as the intrusion is detected.

10. Alternative Embodiments

Alternative are not effective and efficient and impactful system.

11. List of preferred keywords pertaining to the proposed invention

- **Machine Learning**
- **Deep Learning**
- **Open CV**
- **Tkinter**