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# Realtime Authentication for Entrance with IOT Cloud Surveillance

M.Naveena[1], R.Preethi[2], J.Sashiga[3], L. Manoharan[4]

*(Department of ECE, Jeppiaarsrr engineeringCollege, padur,Chennai,Tamilnadu

Email:naveenameganathan1999@gmail.com)

*(Department of ECE, Jeppiaarsrr engineering College, padur,Chennai,Tamilnadu

Email:preethiravi1997@gmail.com)

*(Department of ECE, Jeppiaarsrr engineering College, padur,Chennai,Tamilnadu

Email:sashiga1998@gmail.com)

*(Assistant professor ,Department of ECE, Jeppiaarsrr engineering College, padur,Chennai,Tamilnadu

Email:manoharsrr@gmail.com)

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## Abstract:

This project gives an summary for automatic system to manage and secure the house,supported digital image processing with the help of Internet of Things.The need of security systems for home is considered together of the important aspects of our modern life.These systems could be motion detectors, monitoring cameras, door or window sensors, and Image analysis.

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## I. INTRODUCTION:

Even though there are various security systems consuming large power are available in market nowadays, robbery rate is extremely high. To overcome the disadvantages of existing system we propose a project, where unmanned security closed-circuit television can recognize authorized/unauthorized persons by real-time operation image input by camera, and alsoit'll automatically intimate to the Authorized person. We are proposing a totally unique system to prevent robbery in highly secure areas with lesser power consumption. this technique has face recognition technology which permit ingress to only legalized people to enter that area. If others enter the place without access using another means, then the system alerts the personnel and details are sent to the safety person and send to the authorized person through server.

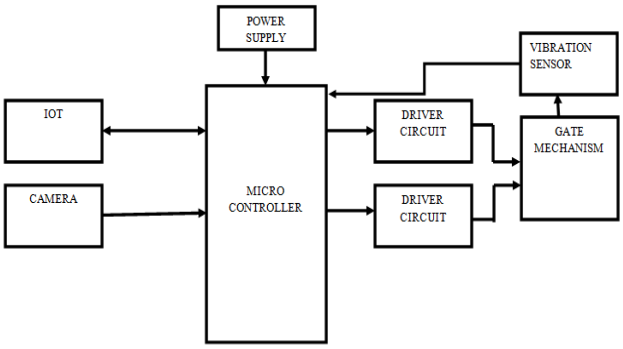
## II. PROPOSED SYSTEM:

Initially the camera is used to urge the face image of 1 that's nearer to the door section and transmit to the authorized person via control server. These data's are stored in cloud server. Then user can get the message from cloud server. Once the detail is verified the authorized can grand access to the person via the microcontroller by send the signals to door mechanism to open. In any case unauthorized activities is detected the door won't open, the system intimates thatinformation to shut by police headquarters as message with location Address. The project proposes system consists of

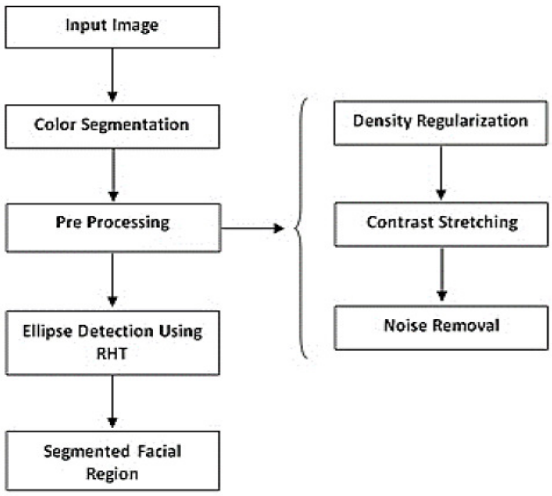
  

camera, database and the web page link. Camera to capture an image who intends to enter the house and sends the image to the database. Image analysis is performed to detect, recognize and match the image with the stored database of the authenticated people. If the image captured does not match with the dataset then an alert message and image of the person is sent to the owner of the house. Owner of the house can grant the access to that particular person. Image processing algorithms are considered for the processing spatial and time complexity of the image captured to cross check with the database stored.

## III. BLOCK DIAGRAM:




## IV. FACE RECOGNITION:




This technique is used to compute the set of geometrical features from the picture what we want to recognize such as width and length of nose,mouth position and chin shape.It is successfully done when set of features is matched with known individuals. A suitable metric of Euclidean distance can be used to find the closest match.The main advantage of this feature for face recognition is at possible even at low resolutions and noisy image. Deformable template algorithm is used for fully automated face detection of frontal view faces.It is similar with neural-network and it is used with great deal of computing time this is the reason for choosing this type of algorithm.It has one difficulty when the creation of the bright and dark intensity sensitive templates and designing an efficient implementation of the detection algorithm.Normally a manual face detection was calculated by facial proportions of the average face. When the face detection occurs by identify the locations of eye and facial proportions.This template is used for face recognition.

## V. HARDWARE REQUIREMENTS:

- Micro controller.
- Power supply.
- IoT.
- Web Camera.
- Vibration Sensor.
- LCD Display.

### ARDUINO:

Arduino Uno could also be a microcontroller board supported the ATmega328P. Totally it contains 14 digital I/O pins, 6analog pins ,16MHZ resonator, programmable with the Arduino IDE,USB connection,power jack,ICSP,reset button.It allow structuring the programs in segments of code to perform individual tasks.

**IoT:**

IoT is abbreviated as Internet of Things. IoT system is a system that consists of sensors which "talk" to the cloud through some kind of connectivity. IoT is a platform where embedded devices are connected to the internet, so that they can collect and exchange data with each other.

**LCD:**

LCD is abbreviated as Liquid Crystal Display.It is a flat type display which uses liquid crystals in its primary form of operation.It has 16 characters,2 line alpha numeric LCD display connected to a nine way D-type connector.It is made up of two pieces of polarized glass that contain a liquid crystal material between them.

**WEBCAMERA:**

A webcam may be a small digital video camera directly or indirectly connected to a Network. It feeds an real time image through the PC. Most popular use of webcam is that the establishment of video links, permitting computers to act as videophones used for video monitoring.

**BUZZER:**

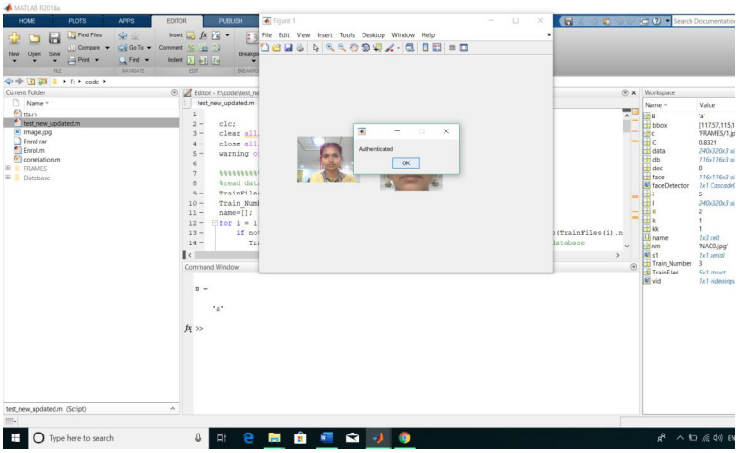
It is a electronic device that makes buzzing noise and it is used for signalling.It contains of an outside case with two pins to attach it to power and ground.When the current is applied,it causes ceramic disc to expand or contract.By changing this it causes surrounding disc to vibrate.

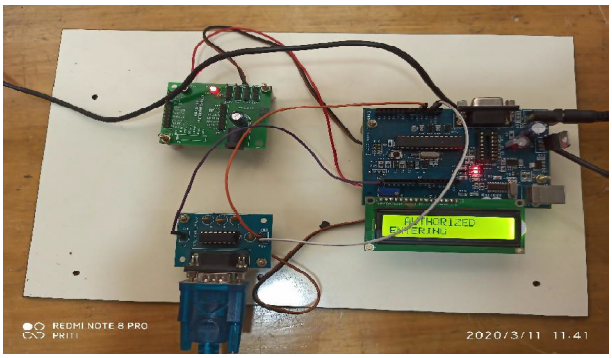
## VI. SOFTWARE REQUIREMENTS:

- Embedded C.
- MPLAB IDE.
- MATLAB.

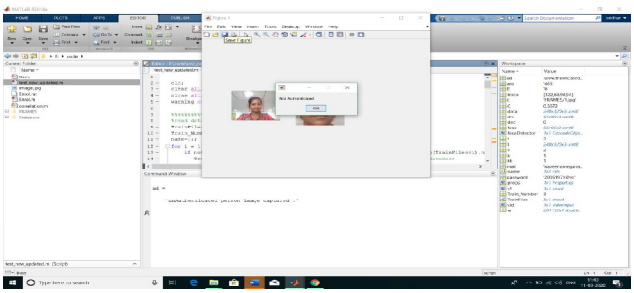
## VII.Output:

**AUTHORIZED PERSON:**

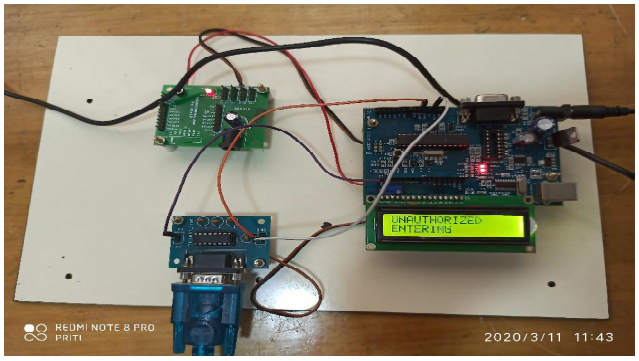





**UNAUTHORIZEDPERSON:**






## VII. RELATED WORKS:

1.Arun Cyril Jose1, Reza Malekian2, Ning Ye3,"Improving Home Automation Security; Integrating Device Fingerprinting into Smart Home", in this year 2016, during this paper explains importance of accessing modern smart home over the web and highlight various security issues. The works explains the evaluation of device fingerprint. They proposed a two stage, using fingerprint and login credential, which verifies user device and user accessing the house over the web. 2. ShervinErfani 1and MajidAhmadi 2, Long Chen 3,"The Internet of Things for Smart Homes", in this year 2017, during this paper analyzes distinct IoT security and privacy features. Further, this paper proposes an intelligent collaborative security management model to attenuate security risk.

## VIII. ADVANTAGES:

- There is no need to manual operation.
- Less power consumption.
- Highly secured.

## IX. CONCLUSION:

The main aim of the system is to make the society free from dependency without any human assistance or works. This system brings to the conclusion that the system is secure to be used in place which require low and moderate security, also places where no human is present to the manual work and places where the users can't depend completely on human.

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