IOT BASED BIOMETRIC VOTING SYSTEM

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ABSTRACT

In every election, he committee is facing lots of troubles and different style of problems throughout the election. The foremost familiar issue faced by the committee is inappropriate confirmation with relevance the arrangement of casting the votes, duplication or illegal casting of votes. During this paper, a secure and new legal system is developed to boost the present legal system using iris recognition. Iris one of the foremost secure biometric of person identification. The most goal of this text is to avoid duplication of casting votes. This project focuses on sophisticated electoral system using finger print and iris. This project focuses on sophisticated legal system using iris and Finger print technologies. The voting process is allotted on condition that the finger print matches with the stored value **,** and that we are scanning individual's iris and storing it during a voter's database by giving appropriate AADHAR card no. If an individual comes for voting, then his or her iris is detected and this detected image is compared to image in voter's database. When the iris is detected we get the knowledge about the voter in our PC, then that information is compared to the voter's finger print. If both the main points get matched, then the person is allowed to vote. The present legal system isn't, secure, there are some individuals who give dummy votes, or they're registered at over one place. During this paper the protection of the voter is discussed and normally and therefore, the focus is on making the electoral system more robust and reliable by eliminating dummy voters. After successful completion of voting the small print of voting is stored in cloud using IoT. The info are collected and calculated automatically. The full voting and data are calculated automatically and therefore, the results shown in IoT at the tip of the Day itself. It reduces the storage of mechanical device for sure now of days, and also reduce change of mechanical device by illegal person.

Keywords: *Iris and Fingerprint scanner; Fake votes; Digital image processing; Arduino; Safety*

1. INTRODUCTION:

In modern world, many new techniques such as voting process play an important role in any democratic country. Democracy is meant to allow people to vote freely and the election result is accepted by voters group. The concept of Iris Recognition was first proposed by Dr. Frank Burch in 1939.These algorithms employ methods of pattern recognition and some mathematical calculations for iris recognition. Iris recognition is a method of biometric authentication that uses pattern-recognition techniques based on high-resolution images of the irises of an individual's eyes. To get the information about the voter we need some existing database, so we are using here AADHAR card from which we get the entire information about the voter i.e.name, address, phone no, blood group etc. This voting system provides better security than the existing system. Iris scanning is considered to be the most secure than the thumb scanning or face recognition. Our system also reduces the man power that is required during the voting. It also reduces the time required to declaring the voting result. We do not need to mark an inedible ink on voter's left forefinger because ink is mark to show that this person has given vote but in our system in the database it gets updated that the particular person has given vote.

2. EXISTING SYSTEM:

Electronic voting (also referred to an as E-voting) is voting using electronic systems to assist casting and counting votes. An EVM consists of two units.

1. Control unit
2. Balloting unit.

The two units are joined by a five-meter cable. The control unit is with the presiding officer polling officer and also the balloting unit is placed inside the voting compartment. Instead of issuing the ballot paper, the polling officer accountable will press the ballot button. This may enable the voter to a caste his vote by pressing the blue button on the balloting unit against the candidate and symbol of his choice. The controller employed in electronic voting
machines has its operating program etched permanently in silicon at the time of
producing by manufacturer. No one can change the program once the controller is manufacture.

3. PROPOSED SYSTEM:

This project is extremely useful to boost the safety performance within the mechanical device. In this project finger print with iris we used for voting purpose. Now day's some person makes the duplicate vote ID card. But during this project human iris is employed for caste the vote. So this project improves the safety performance and avoid forgery vote because naturally one human iris is different from other human.

4. IRIS RECOGNITION:

Iris recognition is completed by following modules,
1. Image Acquisition
2. Iris Segmentation
3. Feature Extraction
4. Recognition

1. Image Acquisition:

● Image acquisition in image processing is broadly defined because the action of retrieving a picture from some source, usually a hardware-based source, so, it may be competent whatever processes must occur afterward.

● Performing image acquisition in image processing is usually the primary step within the workflow sequence because, without a picture, no processing is feasible. The image that's acquired is totally unprocessed and is the results of whatever hardware was wont to generate it, which may be vital in some fields to possess an even baseline from which to figure.

● Test iris images are acquired from gallery.

2. Iris Segmentation:

● Next, a segmentation algorithm is employed, which might localize the iris region from an eye fixed image and isolate eyelid, eyelash and reflection areas.

● Automatic segmentation is achieved using the circular Hough transforms for localizing the iris and pupil regions, and therefore, the linear Hough transforms for localizing occluding eyelids. Threshold additionally employed for isolating eyelashes and reflections.

● Third, the segmented iris region is normalized to eliminate dimensional inconsistencies between iris regions.

● This is achieved by implementing a version of Daugman's rubber sheet model, where the iris is modelled as a versatile rubber sheet which is unwrapped into an oblong block with constant polar dimensions.

3. Feature Extraction:

● Third, detection of interest points in iris and find the strongest features in iris via Harrris Spartio temporal corner detector and SURF feature descriptor.

● Finally mean feature calculated from HSTCP and SURF.

4. Recognition:

● This is the last stage for iris recognition.

● In that, machine learning models like SVM and KNN classifiers are used for iris recognition.

5. SOFTWARE DESCRIPTION:

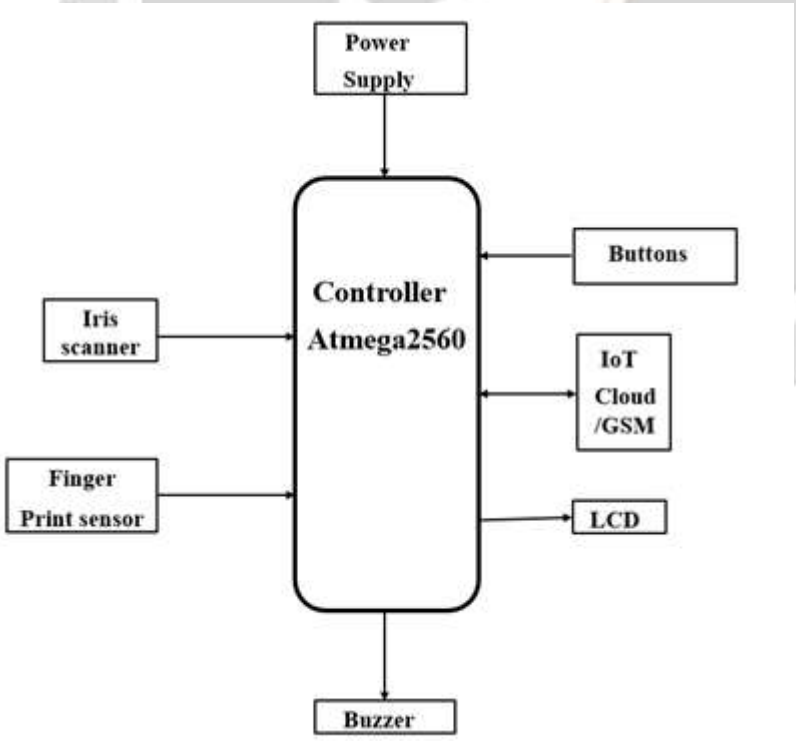
5.1 Arduino IDE:

A program for Arduino may be written in any programming language with compilers that produce binary machine code for the target processor. This will convert the Embedded C language to microcontroller language. Then this is burned into the controller.

5.2 Embedded C :

Embedded systems programming is different from developing applications on a desktop computers. Key characteristics of an embedded system, when compared to PCs, Embedded devices have resource constraints(limited ROM, limited RAM, limited stack space, less processing power) Components used in embedded system and PCs are different; embedded systems typically uses smaller, less power consuming components. Embedded systems are more tied to the hardware.

6. BLOCK DIAGRAM:



7. RESULTS

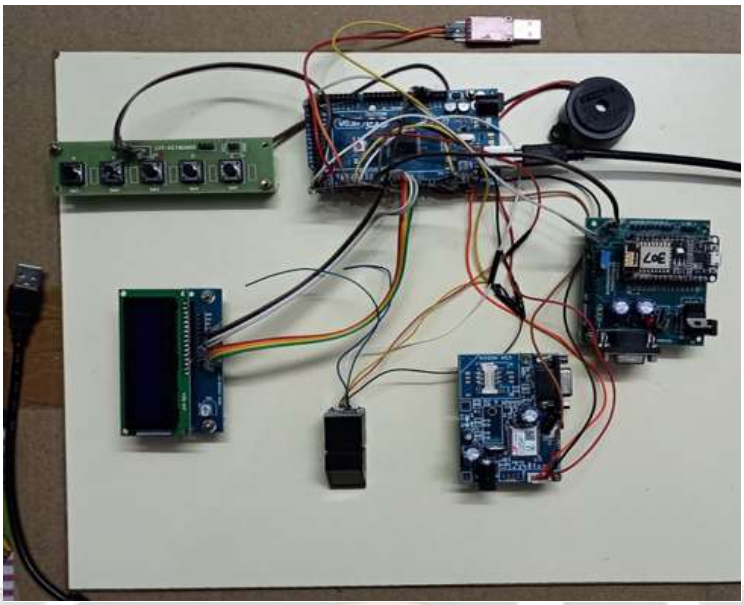


FIG 1: Hardware output

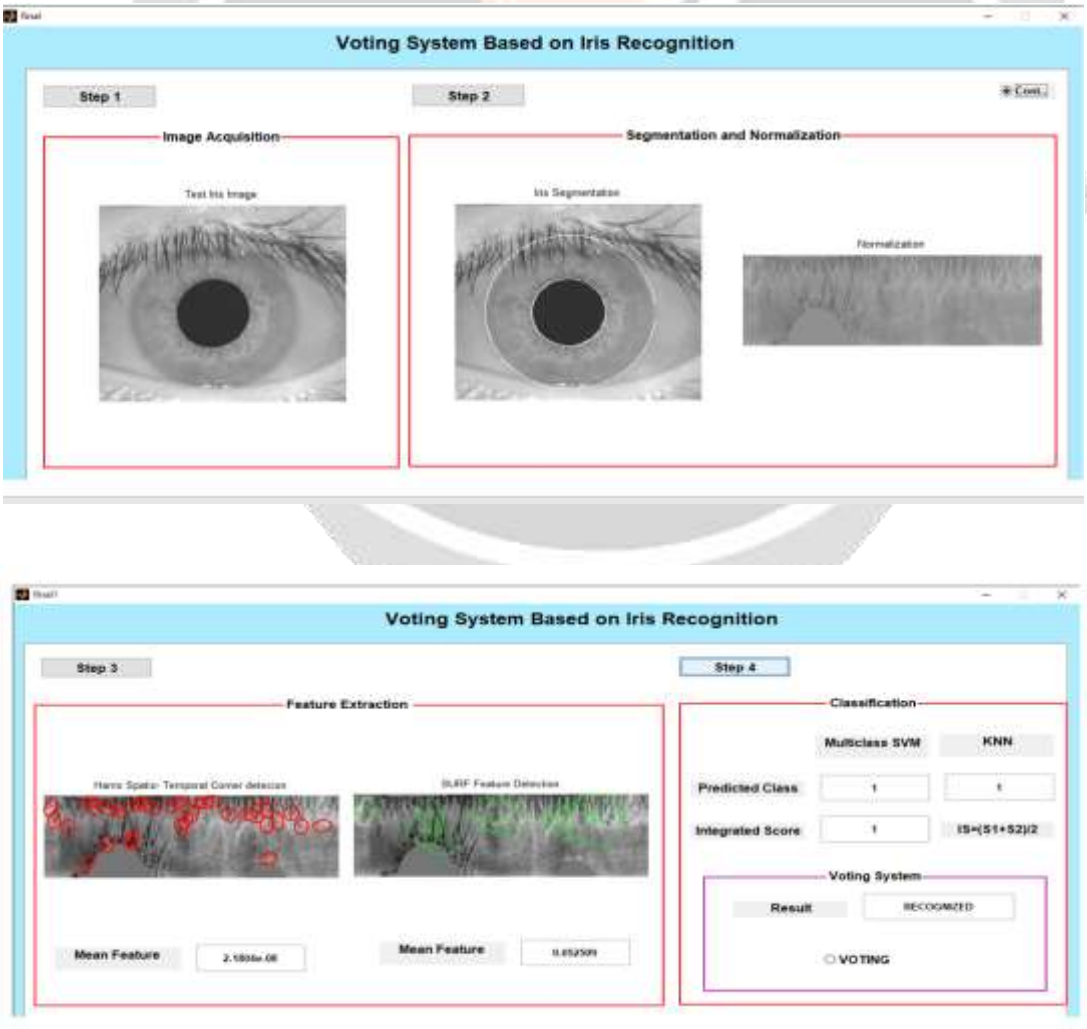


FIG 2: Software output of iris recognition

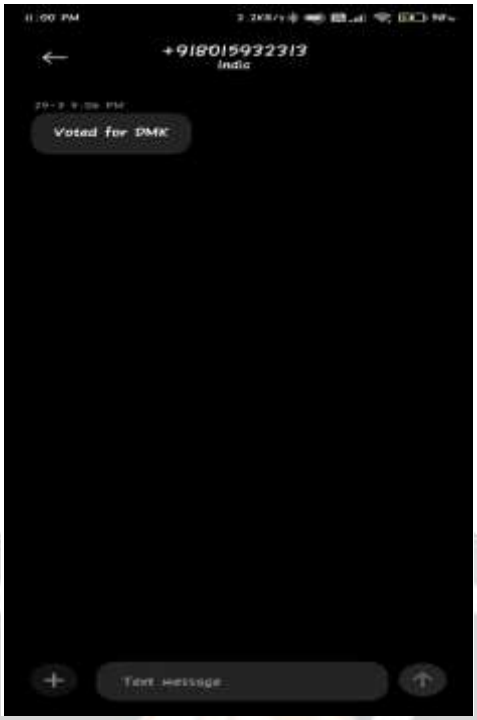


FIG 3- Message received to registered mobile number

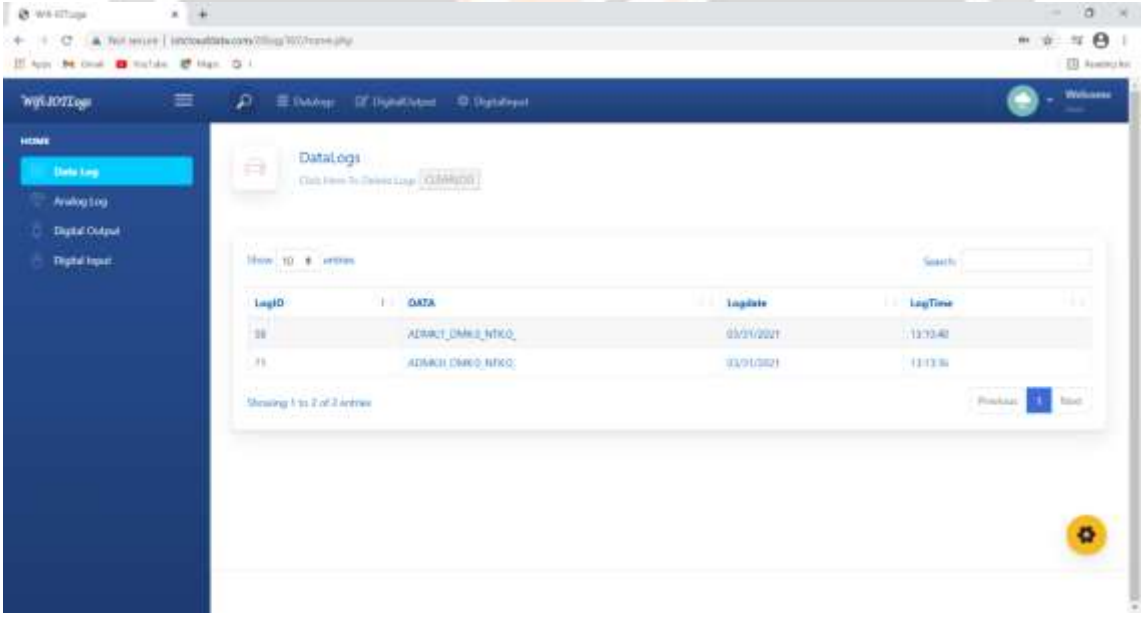


FIG 4- Result updated on webpage

8. CONCLUSION:

This paper has presented an iris recognition system, within which segmentation was done using canny edge detection and HOUGH transform. The database must be updated once a year or before election in order that new eligible citizens is also enrolled and people who are dead are far away from the voter list. During this paper the safety of the voter is discussed and generally and also the focus is on making the electoral system more robust and reliable by eliminating dummy voters. Also, we've discussed Hough transform and Daugman's Algorithm based segmentation technique managed to properly segment the iris region, HSTCP and SURF based feature extraction and score integration algorithm make to correct recognition, which corresponds to successful rate of around 93%. This legal system helps everybody to cast their votes with none problem.

Voting application will increase the proportion of voting. Manual counting isn't required. So by this we'll get the very prominent, clear and fast result. By using this newly developed system we are able to overcome many problems of existing system. This technique is more efficient than the prevailing one. This technique detects the iris from a picture and recognize iris from AADHAR database and check if the 2 images match. If a match occurs, then verify that the law and roles of voting aren't violated then allows him to vote as compared to detection of iris is taken into account to be the foremost secure.

9. REFERENCES:

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