

Aadhar Card Based Electronic Voting System Using Amazon Cloud Server

Srisail S Kanajagi¹, Dr. Raghavendra GS²

^{1,2}Dept of CSE

^{1,2}SDMCET Dharwad

Abstract- Now a day election plays a very important role in the society. So providing a secure mechanism to the voter is very important. The main purpose of this project is to provide a secured voting system and increase the voter's rate. We see the overall voting percentage is coming down because Peoples who live faraway from their native places are not able to move to their native place for their voting purpose because of their duty or work commitments, which lead to unauthorized voting or fake voting.

This project shows how peoples living in a far place can vote in there nearby voting booth. The authentication can be done using the help of fingerprint module, which allows the authenticated voters to vote on the electronic ballot, and the result is sent to Amazon cloud so that the result can be displayed at any time as per the need of election commission.

Keywords- Aadhar card, Fingerprint scanner, Renesas, GSM module, LCD display, Matrix keypad.

I. INTRODUCTION

Voting is a process of selecting right candidate to represent you locality, state or a country through the process of election.

The main purpose of voting is to allow voters to express their opinion in choosing the right candidate among many. By voting in election, you would choose a politician who looks after you and represents your ideas when the decisions are made.

The importance of voting is by voting you are making voice heard and registering your opinion on how the government should be run.

As time changes the technology in voting must be changed by providing more and more tools to assist the voters to cast their vote. Almost all-voting system around the world have the same procedure to cast the votes.

- Voter identification, and authentication is done,
- Voting and recording during vote casting are done,

- Vote counting, and
- Finally publication of election results are done.

Voter identification is done twice. First during registration of voter id, and secondly during casting of the vote. Security is the main concern when it comes to the election. Therefore providing a proper mechanism and secure environment is very important.

Usually providing a proper mechanism and giving privacy for the voter's is time-consuming, expensive for the election commission, and inconvenient for voters. There are different levels of e-voting security. Therefore, serious measures must be taken to keep it out of public domain. Also, security must be applied to hide votes from publicity.

There is no measurement of acceptable security level because the level depends on the type of the information. An acceptable security level is always a compromise between usability and strength of security method.

II. OBJECTIVE

The most important objective of this project is to increase the voter percentage by providing them with facility of voting for any place by which we can avoid illegal voting or unauthorized voting and the result of the voting can be stored in amazon cloud by which we can view the result at any time which reduces the time and manual work required to count the result.

III. BACKGROUND

In the paper [1] the main intention of this paper was to add biometric finger scanning method while voting. There are two main phases in this paper i) Enrolment Process and ii) Voting Process.

In enrolment process, the individual finger is scanned then input fingerprint is processed with some standard image processing algorithms for noise removal and smoothening. The pre-processed fingerprint image is then enhanced using

specifically designed enhancement algorithms. Finally, the extracted features are used for matching in the matching stage. So during voting individual finger is scanned then this scanned finger is enhanced, next step of enhancement is the extraction of minutiae after this both store finger and scanned finger are matched if match's then the individual is allowed to vote or else he is not allowed to vote.

In the paper [2] the main aim of this paper is to provide simple, efficient low cost voting machine using Arm9 Microcontroller.

Here all the details of the voter are stored in a remote server. During voting the individual finger print is matched with the stored data if matches then second check is done to verify whether the person is voting for the second time in the same election or not if not then he/she is allowed to cast his/her vote.

In the [3] the author provides us two methods of e-voting i)online ii) offline. On-line, e.g. via Internet, and offline, by using a voting machine or an electronic polling booth.

In online process, the individual data must have some kind valid identity and his/her data must be stored in the database. when the person enters his/her identification number and password then he/she is asked upload his/her image and address then it checked with the database if it is correct then an OTP is sent to the registered number after entering the OTP he/she is allowed to vote.

In the offline process, the individual data must have some kind valid identity and his/her data must be stored in the database. In this method the individual must certify two conditions before voting first the individual iris image is captured and compared with the database if matches then the individual finger is scanned and matched if two conditions are stratified automatically, E-voting machine buttons will be activated otherwise deactivate buttons.

In the paper [4] The main aim of this paper is use aadhar database to vote. Here all the data of the voters are store in a local computer so once voter comes to vote his finger is scanned and is matched with the database if matches then his/her age is checked using the DOB provided in their aadhar card aadhar card if the age is below 18 he/she is not allowed to vote if it is 18 or more then 18 then they are allowed to cast there vote.

Initially, the flag is set to false when the voter casts his/her vote then is changed to true so then the same person is

not allowed to vote twice, Once the election is completed again the flag is set to false.

Here each voter is provided with 3 chances to match his/her finger if he/she fails then they are not allowed to cast there vote.

Paper [5] This paper provide two main verification step to cast.In 1st step, RFID tag is used to verify the individual date with data base of LPC2148 to check weather the person belongs to that particular polling booth or not. In 2nd step, Finger print scanner is used to check whether the voter is original or not. If two steps are matched then microcontroller enables the switch to vote.

Initially when voter comes to cast the vote RFID tag is used to verify his/her data with the stored data and checks whether the voter has drunk alcohol or not using alcohol sensor if any unwanted behaviour occurs then an error message is displayed on LCD and buzzer output is sent.

Once then RFID tag matches the stored data then his/her finger is scanned then it is matched with the stored data is matches then microcontroller enables voting switch to cast the vote. Once then vote is casted the message is sent to the registered mobile number.

Paper [6] The purpose of this paper is used to link aadhar card to the voting machine so once we link our aadhar card to the voting machine we can get the details of the all the individuals. During voting the individual finger is scanned of matched with the stored data if matches he/she is allowed to vote or else they are not allowed to vote.

Once the voting is done the voters are provided with a token in which the details of candidates they have voted along with the time is printed.

Paper [7] The main purpose of this paper is to provide secure voting machine using solar power. This paper provides this us three stage password protection system. The 1st and 2nd password is used for operation, and 3rd password is highly protected which is used to erase the data or to change the password. The EVM needs 5V DC power supply and microcontroller and LCD needs 5V to turn on.

Initially when a person wants to cast his/her vote he must enter 1st password, if matches then he is allowed to cast his vote. Password 2 is entered by election commission to see the result or to errase the data or to change 1st and 2nd but 3rd password can only be changed once they enter 3rd password the password, and to erase the data 3rd password is required.

And solar power is using for the power supply so that they do not depend on grid system.

Paper [8] The purpose of this paper is to use aadhar data while casting the vote to improve securing. So when the individual arrives at pooling booth to cast his/her vote his finger is scanned using finger scanner module and checked with is data that is store in personal computer, if matches then he/she is allowed to vote if it do not match then they are not allowed to cast his/her vote. And an error message is displayed on the LCD once after completion of voting an SMS is sent to the registered mobile number.

IV. PROPOSED SYSTEM.

Peoples who are apart or far away from their native place, they are not able to move their native place for their voting purpose because of their duty or work. The major issue like illegal activities like unauthorized voters, fake voting. Time complexity is a major problem where people standing in a queue for a long time.

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To overcome this problem we have come up with a solution where all the data regarding electronic voting system are stored and processed primarily as digital information.

E-voting system is a system where all the electronic process is carried out using electronic means starting from casting vote to the declaration of the result's-voting is an electronic system that allows a voter to cast there vote and record their ballots in an electrically secured method.

Numerous EVS are used in large applications like optical scanners, which read the ballot in which the votes are marked manually and are entirely touchscreen based.

Specialized voting systems like DRE (direct recording electronic) voting systems, RFID, national IDs, the Internet, computer networks, and cellular systems are also used in the voting process.

V. SYSTEM DESIGN

In this method, the info of the voter can get from the AADHAR card database. It turned into a newly advanced

information which has all of the information concerning the people.

All the data of the voter's are embedded into EVM so that no one can tamper the data At the time of elections, for fingerprint having access to used finger sensing module.

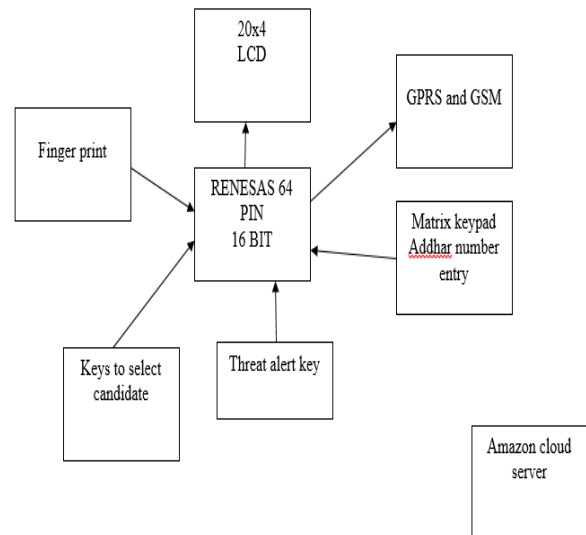


Fig 1: System design

Fingerprint verification can also be a sincere desire for in e-voting systems, in which you may provide customers adequate rationalization and training, and where the gadget operates in controlled surroundings.

It is not stunning that the workstation access utility region looks to be primarily based nearly completely on fingerprints, because of the relatively low fee, small size, and clean integration of fingerprint authentication devices Capture the finger vein photograph and compare or fit to database, capture finger vein and database finger vein matched suggests that this man or woman might be valid for polling segment and if condition is satisfied automatically.

Once authentication is done efficiently, the system will accumulate the voter information like which area he/she belongs and presentations the candidate's call who stood at their location and voter can vote for his or her respective candidate.

Acknowledgment could be received to the respective voter through GPRS as soon as he/she voted.

VI. IMPLIMENTATION

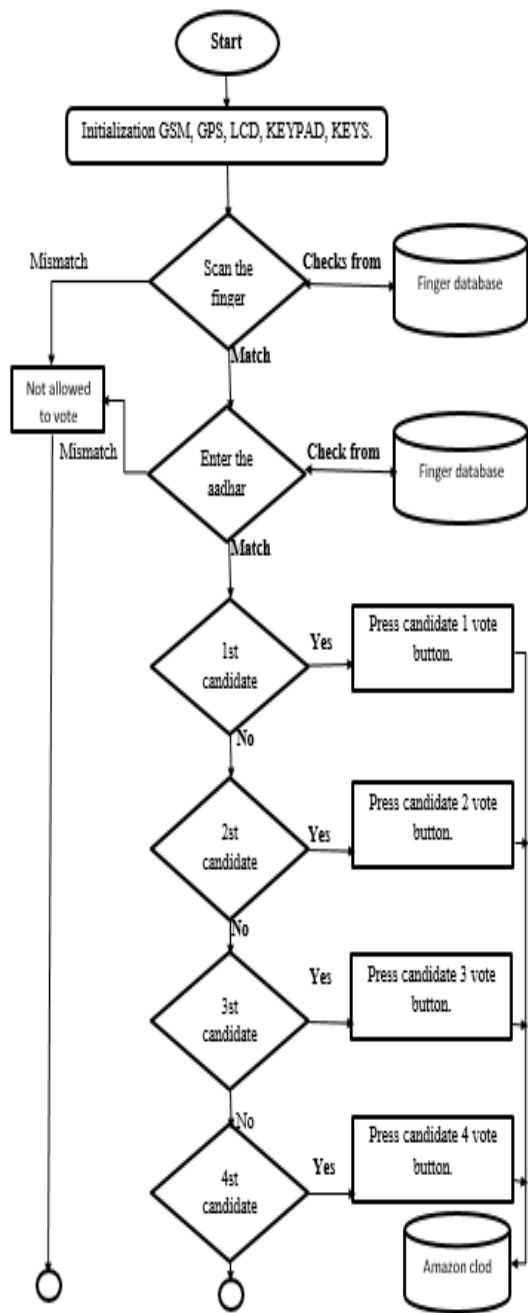


Fig 2: Flow diagram

GSM, GPS, and LCD will be initialized sim will be placed in the GSM slot which is given. Once the sim is placed in the GSM slot which light will start blinking fast till it catches signal then slows down.

Once GSM, GPS and LCD is initialized the voter finger is scanned and is matched with the database if the finger match's then aadhar number is entered and matched with the database if match's then he is allowed to cast his vote, if any one of the cases fail's then he/she is not allowed to cast his/her vote.

Once the authentication is done his/she is allowed to cast the vote. The candidate names are shown according to the voter region.

The voter can choose any of the candidates and cast his/her vote. If in case of an emergency or threat posed while casting vote then the voter can press the threat key so that the message is sent to the head of the election commission.

VII. SNAPSHOTS

The below figure consist of all the experimental like GPRS, GSM, LCD, Finger scanner module, Keypad to enter aadhar number, and keys to select candidates.

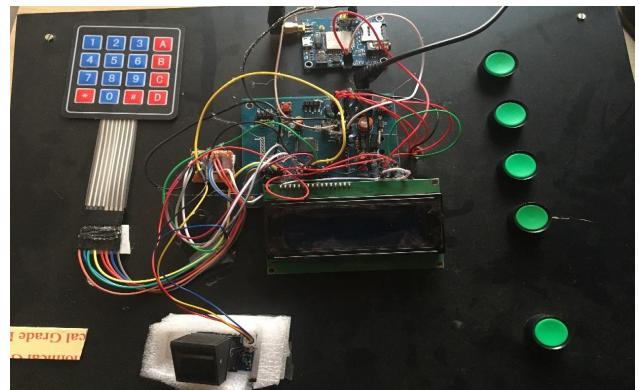


Fig 3: Experimental setup

The below figure show the initialization of GPRS and GSR, which is display on LCD.



Fig 4: GPRS & GSM initialization.

The below figure shows finger detected once the finger scanning is done and is matched with the database.

images the voter is from dharwad so dharwad candidate will be displayed.

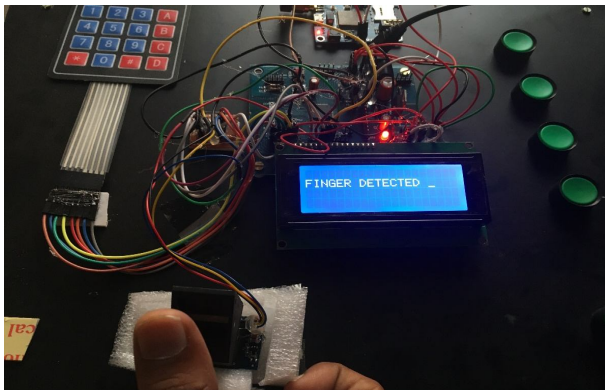


Fig 5: Finger detected.

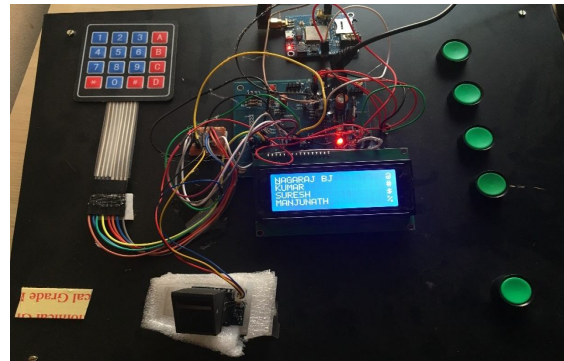


Fig 8: candidates of location 1.

The below image is displayed once the entered aadhar number matched with the stored aadhar number.

The below image is shown when the dharwad voter cast his/her vote.

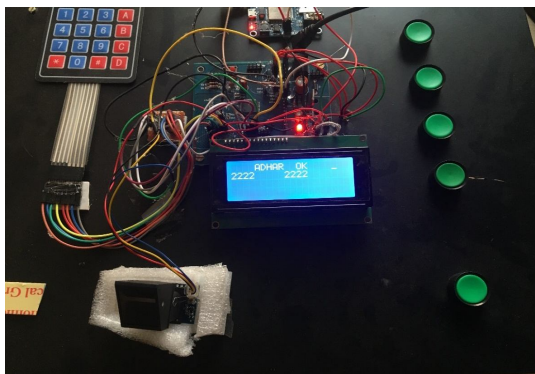


Fig 6: Aadhar number detected

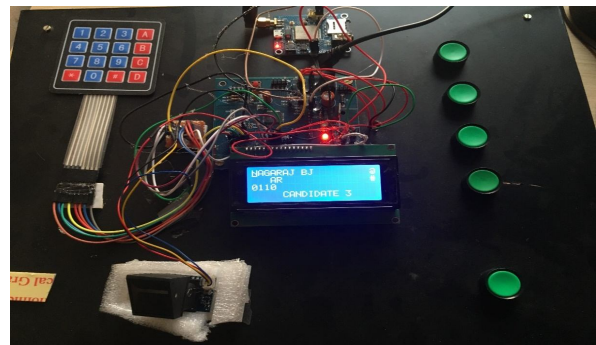


Fig 9: voted candidate at location 1.

The below image shows the voter location once both finger and aadhar is matched. In below images the voter is from dharwad so the dharwad candidate name will be displayed.

The below image shows the candidates who are standing for the election at the voter location. In the below images the voter is from dharwad so dharwad candidate will be displayed.

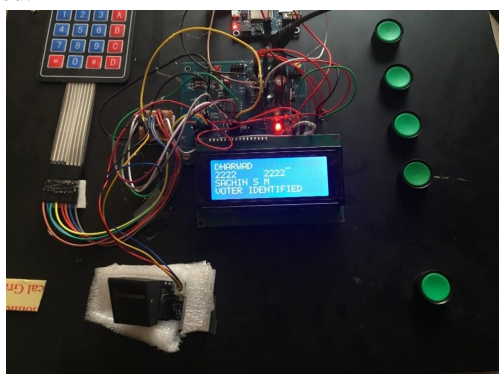


Fig 7: Voter location 1.

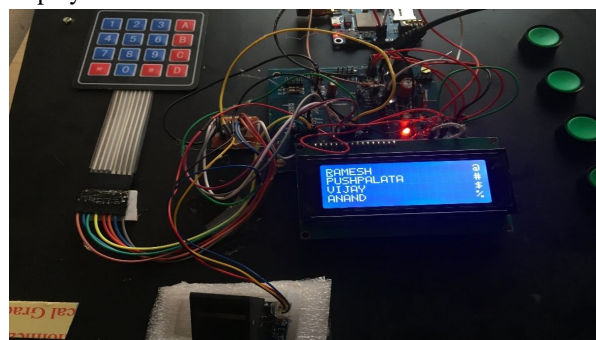


Fig 10: candidates of location 2.

The below image shows the candidates who are standing for the election at the voter location. In the below

The below image is shown when the bangalore voter cast his/her vote.

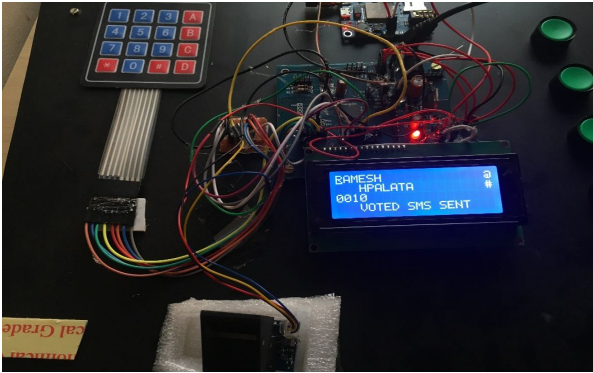


Fig 11: voted candidate at location 2.

The below image is displayed when the voter is in any kind of an emergency or he is being imposed with any kind of a threat.

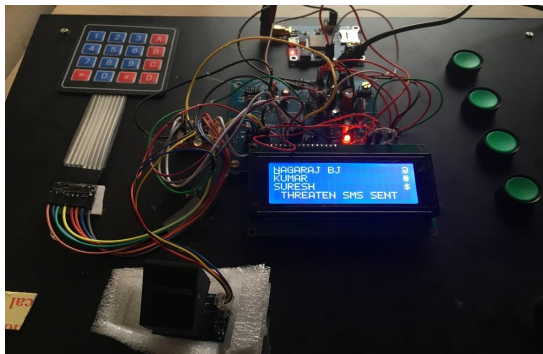


Fig 12: Threat message.

The below image is displayed once someone tries to vote twice or if the voter's finger doesn't match with the database.

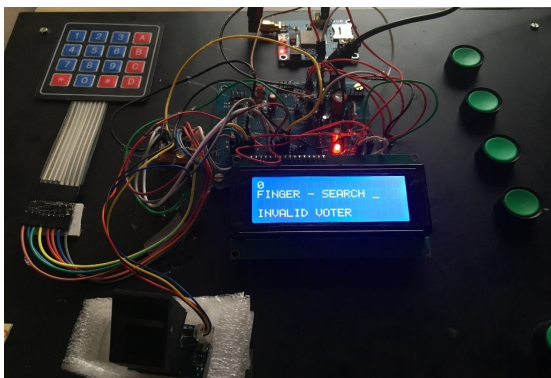


Fig 13: Invalid vote.

The below image shows the result on Amazon cloud service.

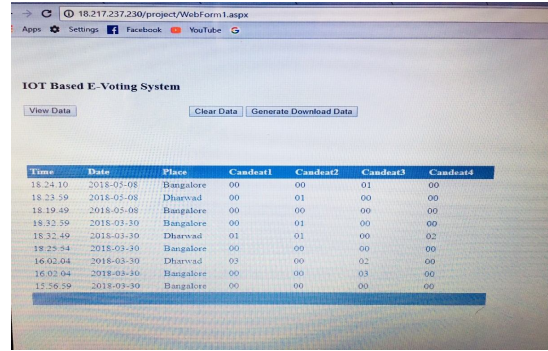


Fig 14: Amazon web service.

VIII. CONCLUSION

This project is able to provide us the desired result and this project can be successfully implemented as a real-time project with some modification. This project makes efforts to make some changes and bring some innovative ideas to the present electronic voting system by adding certain things like linking Aadhar details, using Amazon web service and so on, so that voters' confidence on election increases and election commission will make more effort to bring more innovation to the electronic voting system. By this we can conclude that the "Aadhar card based electronic voting system using Amazon cloud service" will be useful in

- Reducing illegal voting and unauthorized voting.
- Reducing the time consumption.
- To keep all the details of the voters safe.

IX. FUTURE WORK

- The implementation of "Aadhar card based electronic voting system using Amazon cloud service" in this project works perfectly and it can further be improved by adding face detection.
- It can be made more user-friendly for unlettered voters by adding audio output.
- There is a lot of change taking place in the field of electronics, especially in the fabrication, semiconductors and microcontroller, many modules can be embedded in a single chip.

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