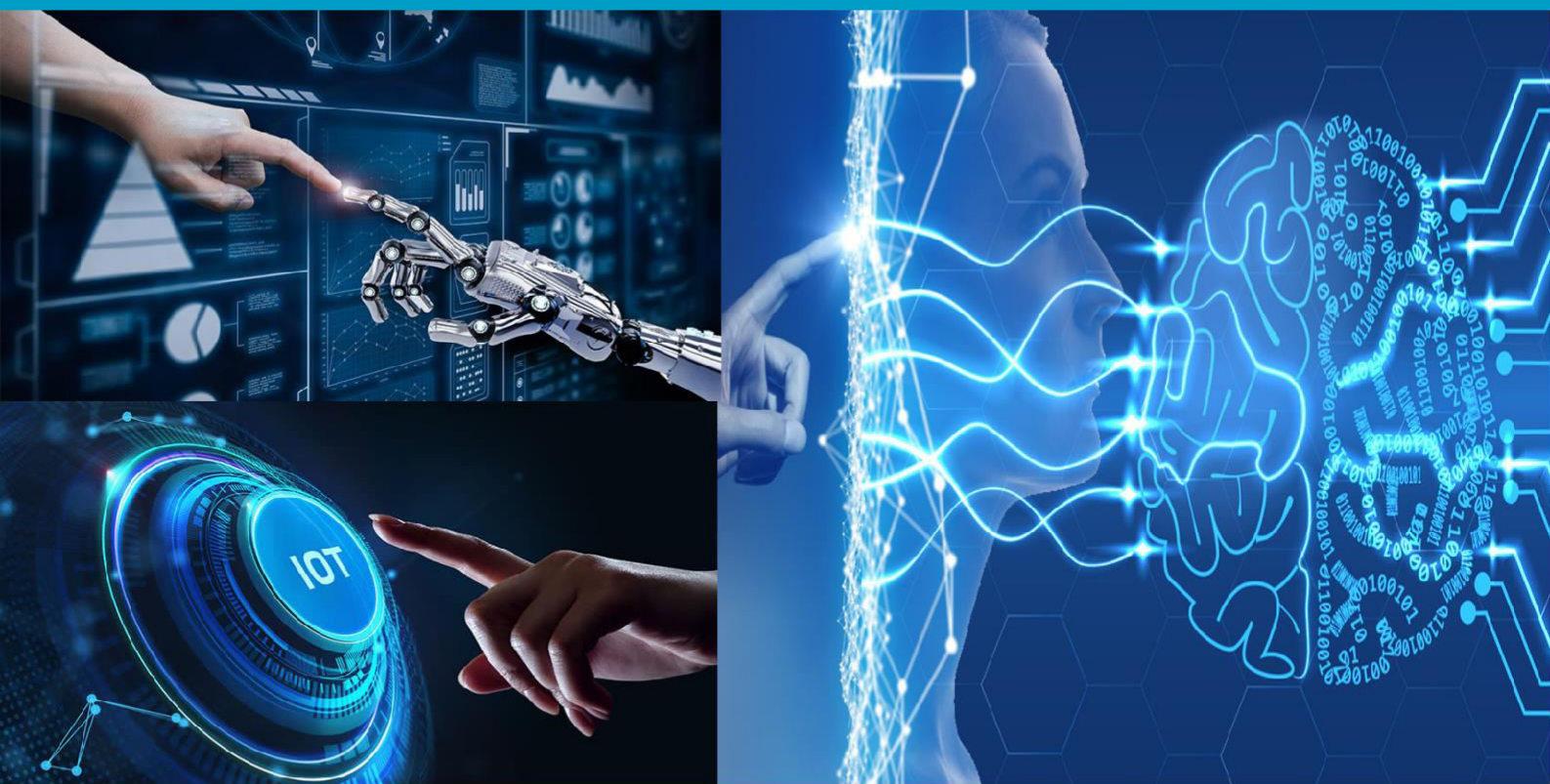




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+91 99405 72462



+9163819 07438



ijmrsetm@gmail.com



www.ijmrsetm.com



Fingerprint Based Electronic Voting Machine

¹Dr. K. Narender, ²B.Ruchitha, ³B.Snehitha, ⁴D.Ganesh

¹Associate Professor, Department of Electronics and Communication Engineering , St. Peter's Engineering College,
Hyderabad, Telangana, India

^{2 3 4}UG Student, Department of Electronics and Communication Engineering, St. Peter's Engineering College,
Hyderabad, Telangana, India

ABSTRACT: In olden days , casting of a vote is done on a ballot paper. The ballot paper is given to each and every individual to cast their vote. Due to this many papers are getting wasted and voting is done illegally. By using the fingerprint based electronic voting machine, the vote gets registered and there will be no use of ballot paper and no illegal votes. The major concern is no person is allowed to vote twice in an Election. By using the Electronic voting machine the candidate will be registered along with verification which includes fingerprints, personal details. The admin will register the candidate such that the system will only allow the user to vote for only one time. The election result will be published by using the Election ID. Arduino and finger print sensor are used in order to carry out the project

KEYWORDS : fingerprint , Arduino

I. INTRODUCTION

Our nation India stands 7th largest country in the world. The country is famous for its democracy, secularism, and its own

traditions and also it is in 2nd place by population. The country is based on federal structure of the government in which The President is the head of the country and The Prime Minister is the head of the state. The constitution consists of both central and state government power and its limitations.

To select the head of the state, head of country general elections need to be conducted. The first general elections are conducted in 1951. The Election Commission of India is solely concentrated on elections and its voting procedure of the country. The general elections are done in a way to add the national flag to the world. These elections are done by casting their votes on the ballot paper. It is quite a complicated task for the ECI to conduct the elections as they gave voting rights for all people above age of 21 years without considering the caste, education background, gender. And it is also a risky process as there is no transportation to the voting booths and the literacy rate is high. After introducing the party symbols, the illiterates managed to vote in a better manner and carrying the tough phase, Our country became the real flag holder of ethic values after the general elections.

By the usage of ballot papers many fraud casting of voting is done such as adding duplicate papers. After knowing these issues the ECI implemented EVM. By using EVM there is no need of ballot papers. But, the EVM's are not tamper proof and can be easily hacked. The hacking is done in a way that the votes for individual parties will go only to single party. Hence, a fraud leader comes into existence. Our main aim of the project is to improve security, accuracy, easy access and avoid fraudulence. By using our project none of the individual can be voted twice as the credentials are registered before voting process. Hence a good leader will lead the nation.

II. LITERATURE SURVEY

David Chaum[1] is an American Computer Scientist and Cryptographer. He published a research paper on Online Voting system in International journal Engineering Research and Technology. The paper proposes a different kind of voting in which the player(voter) is sent to the polling booth to cast the vote. After entering the polling booth, the player is sent near EVM to cast their vote. As soon as the voter casted their voting the machine asks them to confirm

or cancel the vote. If the player wants to confirm the vote he must click the confirm button, if he wishes to delete and caste the vote for other party He/She must click delete button and caste the vote for other party. Soon the receipt is generated in the binary form and there are three numeric strings at the bottom of the receipt. The machine prints two layers which have identical numeric strings. Any one layer must be chosen by the player. The layer which they choose is the encrypted digital vote and which is not chosen, receipt is destroyed

by polling booth. At the date of counting the votes the player is asked to get their receipt. The receipt is decrypted and it is checked by interested third parties and the vote is counted in a legit manner. During this procedure, we can track the non-legit voters and give them punishment accordingly. But the interested third party members may be corrupted.

Ganesh prabhu[2]The paper proposes an online voting system. It allows the user to caste their vote through online. The user agents arrive at each house in every locality to identify their credentials. There will be given an unique userID and password for every member that must be used during the election process. At the time of election, the voters must caste their vote using their respected ID and password and caste the vote. After the Login and casting of the vote the vote is directly received to the agent. Here, security issues are present as, there is a chance of hacking it is not secure because the loyal members of the party might come forward to make the party win in the elections.

Richard G.Niem[3] is Don Alonzo Watson Professor of Political Science at the University of Rochester. He had a great knowledge in voting behaviour and legislative term limits and civic education. He had published many research papers in International Journal on Computer Science and Engineering out of which Voting technology on a ballot paper is popular. This paper proposes a voting system on paper technology. The system is introduced as, the voters are give clear instructions regarding party symbols. They are given a ballot paper in which the party symbols are printed and the voter need to keep their thumbprint side of the party symbol which they need to vote. The ballot paper is dropped in a ballot box. During the results, the votes are counted. Here the main issue is there is no security, as other person can come several times to caste their vote and fake ballot papers will be added.

HanadyHussien[4] published an IEEE paper based on design of a secure E-voting system that says security plays a very major role in the voting system. The system is based on homomorphic property and blind signature. The project main component is RFID as it stores the data and rules which need to be followed during election process.

III. VOTING TECHNOLOGY USING BIOMETRICS

The main motive of the project is to increase the security in the voting system by using electronic voting machine with the help of fingerprint. The fingerprint of the voter can taken as input to the system and compared with the database .Our voting system consists of a fingerprint scanner, Arduino UNO, LCD, Enrolling switches.

When a person is voting for the first time, their credentials are verified and the vote is registered. When the same person comes again to vote, the person's fingerprint is scanned again and as his fingerprint is already registered as the vote has been casted, it gives a red light along with siren. The Arduino has all the databases of the voters and their registered, scanned fingerprints are stored in the Arduino itself.

The main use of the fingerprint technology and arduino is to implement the application. the project is to implement a system by asking the user to keep his/her fingerprint as an proof. System takes the data from the fingerprint and it verifies the person's data which is already stored in database. If the details of the particular person is to be allowed for their vote. If the fingerprint is not matched with the given data the person is not allowed to vote . if the system allows the person by default the security persons will come and can take the action. Application of this project is where the user is recognized by his/her fingerprint. Fingerprint of the human

beings are different.The vote can be easily authenticated . fingerprint can be identify by a unique person. The person can be vote once at a time, the person is not allowed to vote for the next time.

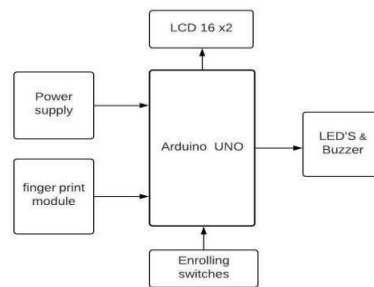


Figure1: Block diagram of fingerprint based electronic voting machine.

The power supply of 12V is given to arduino UNO. The fingerprint module is used to identify the person and caste the vote. It gives the main authentication for the device. The fingerprint module, LCD Display, Enrolling switches, LED'S and Buzzer are connected to arduino. Here the voter's biometrics are scanned through fingerprint module, the scanned biometric person's name is identified and printed on screen. Its checks whether the person has voted once or twice, if the voter is casting the vote once it allows the voter to caste their vote through enrolling switches. But, if the voter came again to caste the vote. The led bulb will glow and give a noise that means the voter is a fraud candidate.

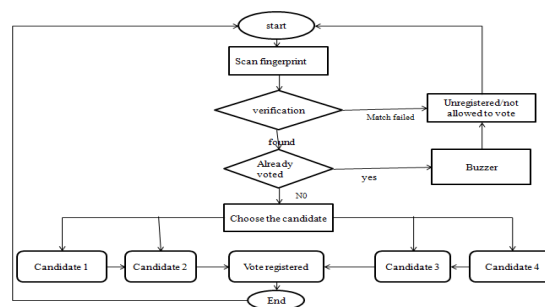


Figure 2: Flow chart of fingerprint based electronic voting machine

Firstly, system gets turn on. Initially scan your finger, If verification is found then the person can vote, otherwise if the verification is match failed it will not allowed to vote the person. and it goes to the initial process. If the person has been already voted the buzzer will alert the sound and it will not allowed the person to vote and it goes to the initial process. If no the person can select the candidate and can vote. After performing successful voting, then the process will be end .

IV. RESULTS

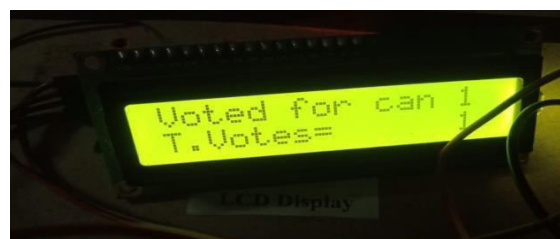


Fig 1: From the above figure we understand that the voter is invited for voting



. Fig 2: When the person uses his voting option the fingerprint of the person should be scanned.



Fig 3: If the enrolled person uses his vote the person should click on the switch button.

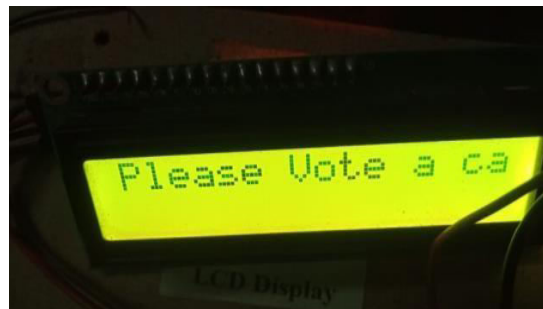


Fig 4: If the vote of enrolled person is successful registered then the lcd will display as shown in the above figure.



Fig 5: If a person who is not enrolled tries to vote/ uses his vote the lcd displays did not find am and buzzer sound will be generated.

V. CONCLUSION

The fingerprint based electronic voting machine is designed specifically to detect fraud voters. This system basic advantage is there will be no use of paper material as it is designed in a digital manner. The biometrics after each vote gets registered in the device such that if any fraud voter come to vote, they will be detected. This system is easy to use, easily understandable for illiterates also.



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