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ONLINE VOTING SYSTEM USING FINGERPRINT SCANNER

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Abstract – *We all are quite familiar with Electronic Voting Machines, where your vote gets registered electronically and you don't need to use ballot paper to vote in election. Today security is a major concern and it also needs to be ensured that someone can't vote twice, so this problem can be solved by introducing Finger Print Based Voting, where a person can be authorized based on his finger Print. This will also stops fake voting. So today we are building Fingerprint Based Biometric Voting Machine using arduino. It is an application where the user is recognized by his finger pattern. Since the finger pattern of each human being is different, the voter can be easily authenticated. The system allows the voter to vote through his fingerprint. Finger print is used to uniquely identify the user. The finger print minutiae features are different for each human being. Finger print is used as an authentication of the voters. Voter can vote the candidate only once, the system will not allow the candidate to vote for the second time. The system will allow admin to add the candidate name and candidate photo who are nominated for the election. Admin only has the right to add candidate name and photo who are nominated. Admin will register the voters name by verifying voter. Admin will authenticate the user by verifying the user's identity proof and then admin will register the voter. The number of candidate added to the system by the admin will be automatically deleted after the completion of the election. Admin has to add the date when the election going to end. Once the user has got the user id and password from the admin the user can login and vote for the candidate who are nominated. The system will allow the user to vote for only one candidate. The system will allow the user to vote for one time for a particular election. Admin can add any number of candidates when the new election will be announced. Admin can view the election result by using the election id. Even user can view the election result.*

***Key Words*: XAMPP, HTML, CSS, ONLINE VOTING, PHP, Arduino.**

1. INTRODUCTION

The aim of electronic voting schemes is to provide a set of protocols that allow voters to cast ballots while a group of authorities collect votes and output the final tally. Problems with voting machines extend from the quality of the locks, to the need for a printed audit trail, to the hacking of the communication links. Although voting makes many people to believe that voting is the perfect application for technology, but in reality applying it is hard. For a voting system to be ideal, four attributes must be satisfied: anonymity, scalability, speed, and accuracy. On-line Voting System is a web based system that facilitates the running of elections and surveys online. This system has been developed to simplify the process of organizing elections and make it convenient for voters to vote remotely from their home computers while taking into consideration security, anonymity and providing auditioning capabilities.

Online voting system is implemented in PHP Platform using go-daddy domain as back end. Main aim of online voting system is to develop an online application like online reservation system, for citizens who are above 18th year of age through online using these system citizens of India can vote through online without visiting polling booth. A centralized data based is maintained by election commission of India where citizens information is maintained whenever citizen is using online voting system his/her information is authenticated with the data present in database if user is not in the list he cannot use online voting system.

A. Problem Background

In the recent years there are many literature on online voting has been developed. While online voting has been an active area of research in the recent years, efforts to develop real-world solutions have just begun posing several new challenges. The use of insecure Internet, well documented cases of incorrect implementations and the resulting security Breaches have been reported recently. These challenges and concerns have to be resolved in order to create public trust in online voting.

B. Problem Statement

Online Voting System provides the online registration form for the users before voting and makes the users to cast their vote online. The system is to be developed with high security and user friendly.

2. OBJECTIVE

- We live in democracy and voting is one of over fundamental duties as responsible citizen of the country, but now nowhere around the country a 100% people come toward during the election in their territory (country).
- The main objective of this study is an important step towards streamlining this effort is to develop a framework and identify necessary properties that a secure and trusted online voting system must satisfy to reduce discovery redundancy. Such a framework will allow us to evaluate as well as compare the merits of existing and future candidate online voting schemes.
- System should support multi-user environment. System should be fully automated. System should provide concrete security features like creating users and assigning privileges to users of the system. System should be capable to keep track of all the detailed descriptions of the client and the whole details of services offered by the client organization.
- There have been many reasons for that some of them are: In the Rural areas influential people keep their main at the polling booths to threaten the common man to vote for them.

3. BLOCK DIAGRAM OF SYSTEM

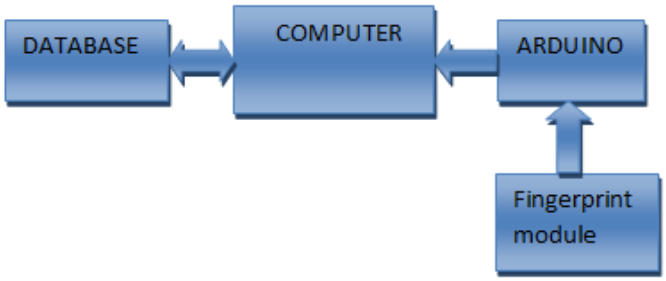

Fig. 3.1 Block Diagram of Basic Online Voting System

Fig. 3.1 shows that the block dia. of basic online voting system. In this voting system the database is connected to the computer. The computer can access the information through the database. Here the fingerprint module is based on the Arduino microcontroller which is connected to the computer.

4. CIRCUIT DIAGRAM OF SYSTEM

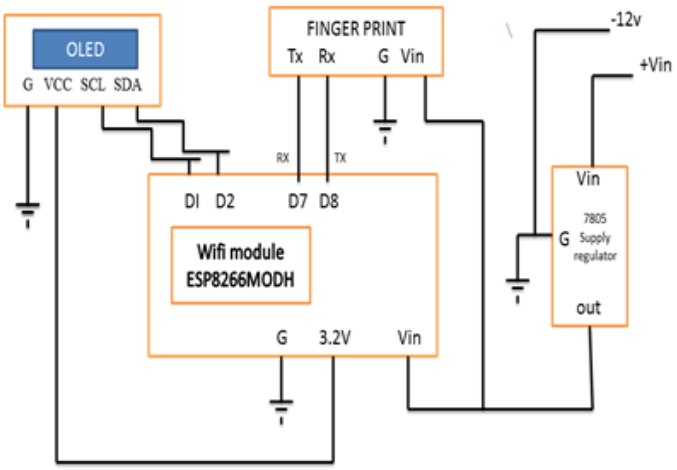

Fig. 4.1 Circuit Diagram of Online Voting System

A. Process of online voting (Fingerprint Matching)

Fig. 4.2 Fingerprint Matching

In this process of online voting system, the user is scan the finger on the fingerprint module. If the information or data is registered in the databased, then the system will check either information is write or wrong. If the information is not match then the user is not able to vote, and if the information is match then the user is valid for voting.

B. Voting page

Fig. 4.3 Online Voting Page

In this online voting system, OLED (Organic Light Emitting Diode) is connected to the WIFI module (ESP8266M0DH) to the pin D1 and D2 resp. and another pin is connected to the ground. Also the VCC pin is connected to the 3.2v of WIFI module. Here fingerprint of transmitter and receiver pin is connected D7 and D8 pin of WIFI module. Both the input voltage of fingerprint and WIFI module is connected to the output pin of voltage regulator. So this is purely developed by online voting system. This is very secure and time consuming system.

5. ADVANTAGES

- Online voting maximize home owner participation
- Online voting is environmental friendly
- Online voting system is private and secure
- This is paper less system
- Print the result- print out the results and use it to help tally physical ballots if they exits
- Online voting saves money
- Provide easy and accurate counting without any misused in counting center
- Voting online is time saving and eases HOA election Management
- Registration is totally depend on finger print scanner

6. APPLICATIONS

- The fast track voting which would be used in small scale election like a resident welfare association, panchayat level election and other society level election where result can be instantaneous.
- It could also be used to conduct opinion polls during annual share holders meeting.
- It is possible to get instantaneous results with high accuracy.

7. CONCLUSION

All the study which had been reviewed show that, this system overcome most of the problems faced during the voting period by EVM system. The efficiency of the system depends upon the web interface, its usability. This will surely ensure and safer voting method which is very much what is the required for healthy growth of a developing nation.

In this paper, the proposed online voting system using fingerprint scanner which is better and faster than previous system. Online voting system using fingerprint scanner has provided chance to avoid invalid votes. In this system only authenticated registered person can be vote.

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