

A NOVEL METHOD OF E-VOTING SYSTEM USING BIOMETRICS THUMB IMPRESSION AND FACE RECOGNITION

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ABSTRACT

The project is mainly aimed at providing a secured and user-friendly Online Voting System. The problem of voting is still critical in terms of safety and security. This the system deals with the design and development of an application-based voting system using fingerprint, face recognition as well and aadhaar card or voting-id in order to provide high performance with high security to the voting system. The proposed Voting System in voters have to scan their face afterwards scan their fingerprint, the data collected by the voter is checked with the data within a database that is retrieved from database of the government.

Keywords: Artificial Intelligence, Internet protocol, Hyper Text Transfer Protocol, Identity document (ID).

I. INTRODUCTION

This report explores the potential probability of Artificial Intelligence in assisting enhanced application for a secured and user-friendly Voting System. In developing of the sharing economy brings numerous novel ideas and generates many innovative businesses. However, the wide range of the sharing economy also causes disputes and questions, including labor, organizations, and regulations. Artificial Intelligence can facilitate virtual and physical networking symbiosis. This situation would motivate a new model of governance, namely, the bottom-up organization. Therefore, the AI would push governances and citizens to reorganize new voting systems.

II. LITERATURE SURVEY

Roopak T M, and Dr. R Sumathi, (2020) have present Electronic Voting based on Virtual ID of Aadhar using Blockchain Technology. First represent distributed algorithm then present a faster algorithm. Aims to used blockchain to ensure security by integrating the Aadhar verification using VID to it, the digital signature which is converted from fingerprint data, is very important in ensuring security.

Soma Bhattacharrya, Dibyangana Roy, Esha Pramanik, Trishita Nath, and Sapan Kundu (2019) proposed, Wireless Voting Machine. Detection and Retina Scanning are highly secure and are proven to be better than security measures deployed earlier in case of ballot-paper based voting system.

Duy-Hien Vu, The-Dung Luongd, Tu-Bao Ho, Chung-Tien Nguyen, (2018) have present An Efficient Approach for Electronic Voting Scheme without An Authenticated Channel. Presented the E2E decentralized e-voting scheme for the small and medium scale elections without an authenticated channel.

III. EXISTING SYSTEM APPROACH

A. Issues with Present Voting System in India and Securities Required in a Voting System:

Several studies have been done to use computer technologies for improve election process. These studies talk about the risks of adopting electronic voting system, because of the software challenges, insider threats, network vulnerabilities, and the challenges of auditing.

B. Problems encountered during the usual elections are as follows:

1. The Validation of voters is not done Properly.
2. Polling Booths can be Tampered.
3. The Process is Time-Consuming.
4. Less Transparent.

C. Different Stages of Election:

1. Registration or Enrollment of the voter.
2. Verification of the voter before voting.

3. After Verification voter can cast his vote to any candidate of his choice.

4. In the end , the counting of votes is done and the Winner is announced.

IV. PROPOSED SYSTEM APPROACH

To overcome the above stated problems a new system is proposed which is time saving and provides more security. It provides 3 stages of authentication by electronic means, based on individual biometric traits of voters. The new system makes use of Fingerprint and Face of the voter for verifying the voters at the time of voting. If scanned data of the voter matches with the stored data in the database, then he/she is allowed to vote, otherwise rejected.

A. Proposed System Architecture:

The architecture consists of the voter who wants to vote will scan his fingerprint using the fingerprint scanner and face scan as well. The fingerprint voting system will perform many processes to the voter fingerprint image in order to check the authority of the voter and same for face recognition. The output of the fingerprint and face scan is either true or false, if the output is true then the system will proceed further and if it was false then the system will give a warning.

1. Module-1: System Authentication:

In System Authentication module “It consists two options i.e., new voter and admin. One signup button for signing to access next module. One change button for changing Password. Admin is authorized user and only he/she look the result of voting.”

2. Module-2: Register to voter and Vote:

In this module user having two different options i.e., Register to vote and Vote. If user select the Register to vote option, then next module i.e., registration Form is open and if Vote option is selected then voter first scan face and then fingerprint and then verify it and then it allows for vote.

3. Module-3: Voter Registration Form:

In this module voter first submit his/her full information such as Aadhar No, Name, Mobile no, Ward no, Ward Name. After than voter should be submit their fingerprint and face scan which is saved in database and then saved the information.

4. Module-4: Verification:

In this module voter had four options they are Fingerprint, Face scan, Verify, Cancel. In this first voter scan his/her fingerprint which is compare with fingerprint saved in databased and same goes for face scan as well. Then voter press the verify button if fingerprint and face scan is saved in database, then it successfully verified.

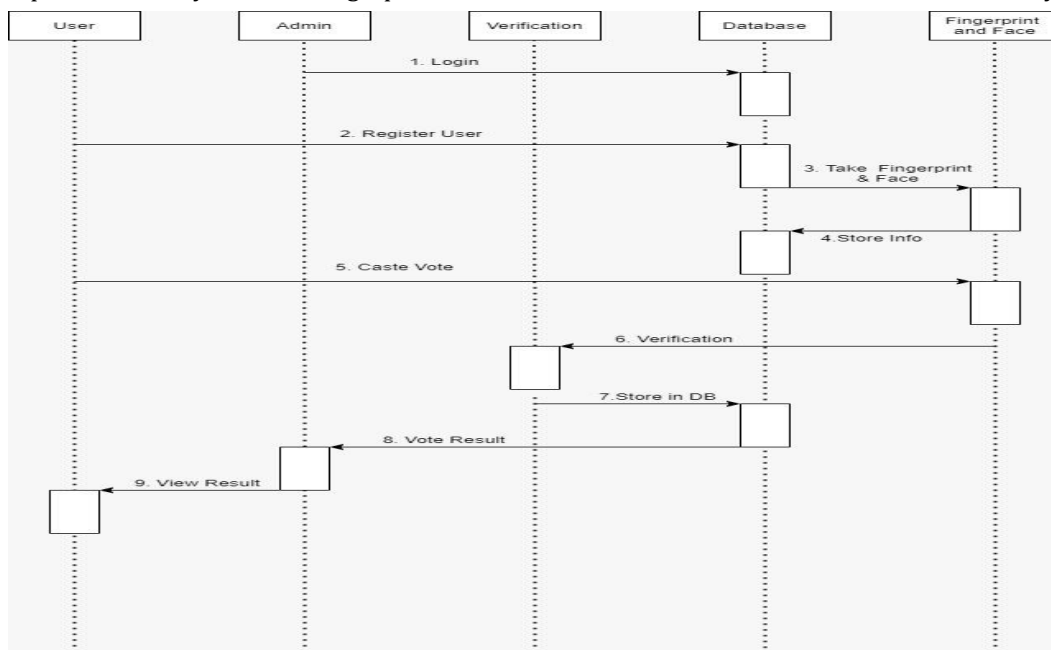


Fig: Sequence Diagram.

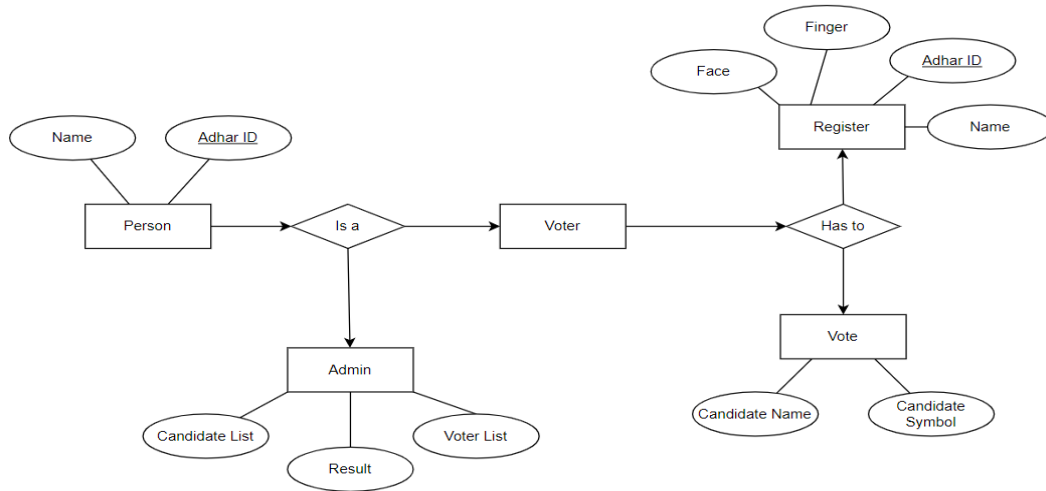


Fig: Entity-Relationship Diagram.

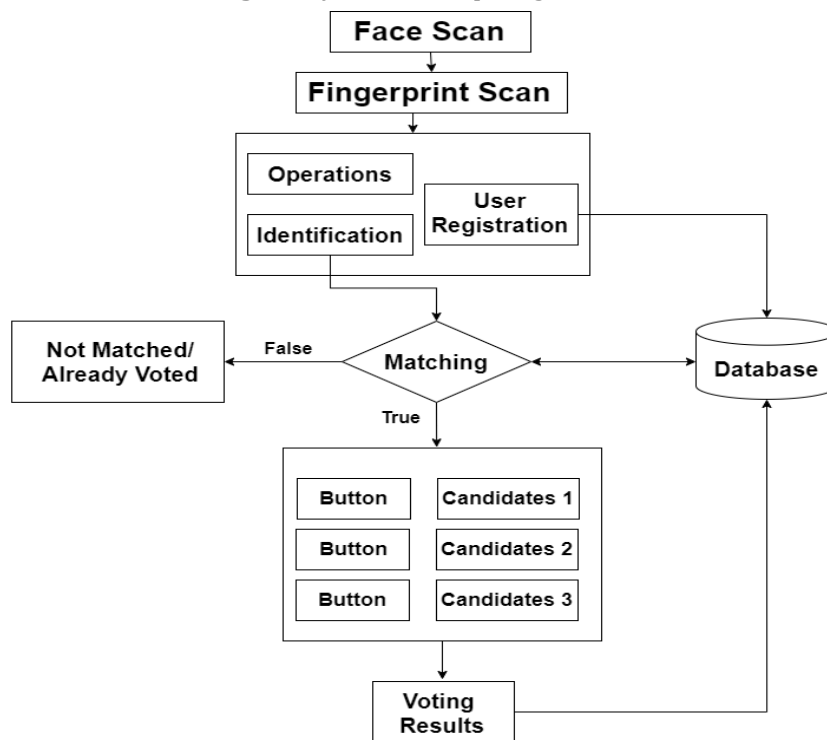


Fig: System Architecture.

B. Advantages:

1. The system can be easily accessible from anywhere.
2. Nowadays this system would be more preferable because the pandemic to held elections is a very difficult task.
3. Less Manpower is required as the security is to be provided to the voting booths and the personalities.
4. Any person who cannot go to the voting booth because of his physical condition can also vote.
5. The highest voting percentage is 67% so far and the average voting percentage is below 60%. We tend to increase the voting percentage by our system.

V. CONCLUSIONS

The proposed system end-to-end verifiability which increases the trust of voters on voting system. The system we provide with extra security layer with transparent in voting process. The system also easy to handle. There are no complex tasks required for governing authority as well as which may lead into increase in voting.

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