



International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijareeie.com

Vol. 8, Issue 3, March 2019

Secure Voting System Using QR Code and Biometrics

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ABSTRACT: In Ballot based Voting is present, but still there is no system to avoid Proxy Casting and Recasting is implemented. We do not have an option to see our casted Vote also. There is no security in this current application. In a novel electronic voting system based on Blockchain that addresses some of the limitations in existing systems and evaluates some of the popular blockchain frameworks for the purpose of constructing a blockchain-based e-voting system, we Aadhaar card linked Mobile number is used for OTP Generation, only then the voter can cast the vote, This system will avoid Proxy casting and Recasting. The main objective of the project is to cast the vote securely and also to identify the fake voting party. User will scan the QR code from the Aadhaar card through .Android application, then automatically. List of candidates are displayed to the user. User can cast the vote, then automatically camera is initiated for face recognition. Once the face recognition is identified only .

KEYWORDS: Proxy Casting, Recasting, Blockchain framework.

I. INTRODUCTION

The identity of an individual is the abilities, beliefs, personality, appearances, and/or expressions that differentiate an individual amongst others. There are three main methods that are used to prove identity, namely: Something we have, (e.g. ID Card/Document or smart card), something we know (e.g. password or PIN number), and something we are (e.g. Biometrics such as fingerprints or iris). During old days the only methods that were used are something we have and something we know. Nowadays many applications are replacing these old methods or combining them with something we have (e.g. biometrics). Biometrics is a biological or behavioral characteristic of a human being that can distinguish an individual from another, such as; fingerprints, iris, ear, face, gait, footprints and more. The literature has shown that most biometrics if analyzed in details can be used for identification or verification because of their uniqueness.

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In symmetric concept, called secret key, use the same key for both encryption and decryption; asymmetric concept, called public key, use different keys for encryption and decryption. The symmetric concept is stronger than asymmetric concept because symmetric uses the private key. Symmetric algorithms include AES, and asymmetric algorithms include RSA. Although different works have been proposed to generate cryptographic keys, there is still a gap in achieving strong biocryptographic key at a short computation time and memory size. In this paper, we propose a new method of generating a strong cryptographic key at a short time and memory. Firstly, existing methods have been presented for generating biocryptographic keys and the comparison with the proposed approach in terms of, key length, and computing time.

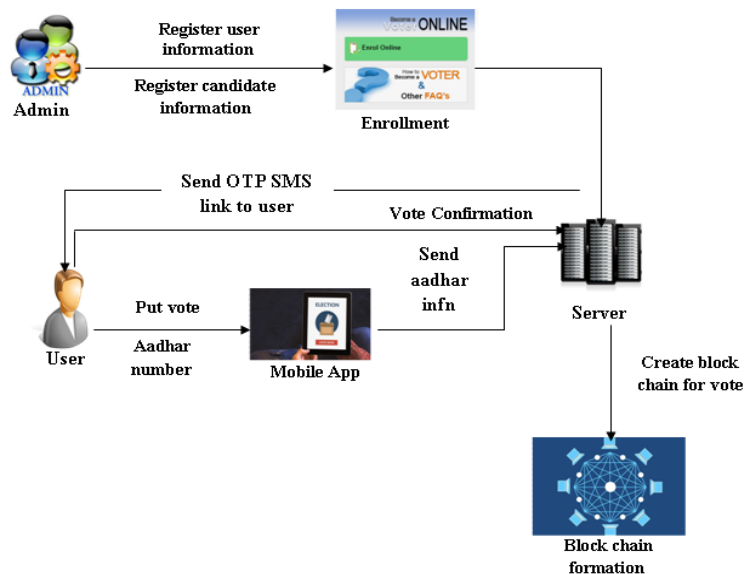


Fig: Architecture Diagram

II. MODULES

A modular design reduces complexity, facilitates change (a critical aspect of software maintainability), and results in easier implementation by encouraging parallel development of different part of system. Software with effective modularity is easier to develop because function may be compartmentalized and interfaces are simplified. Software architecture embodies modularity that is software is divided into separately named and addressable components called modules that are integrated to satisfy problem requirements.

Modularity is the single attribute of software that allows a program to be intellectually manageable. The five important criteria that enable us to evaluate a design method with respect to its ability to define an effective modular design are: Modular decomposability, Modular Comps ability, Modular Understandability, Modular continuity, Modular Protection. The following are the modules of the project, which is planned in aid to complete the project with respect to the proposed system, while overcoming existing system and also providing the support for the future enhancement.



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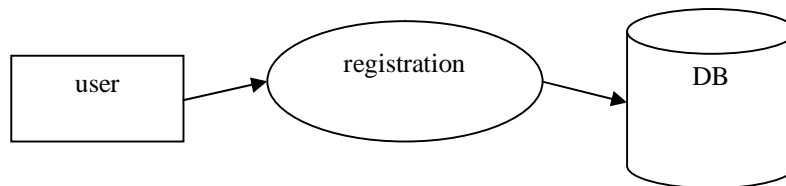
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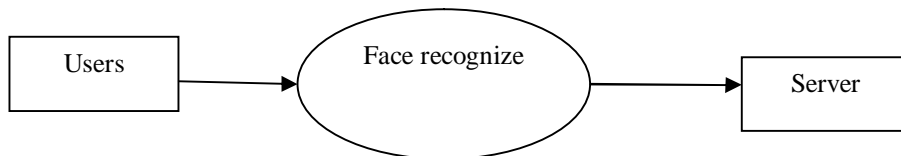
III.USER REGISTRATION

Once the User creates an account, they are allowed to login into their account to access the application. Based on the User's request, the Server will respond to the User. All the User details will be stored in the Database of the Server. User and candidate have to register their details along with aadhaar number.



IV.VOTING SERVER

The Server will store the entire voter's information in their database and verify them if required. Also, the Server will store the entire voter's information in their database. Also, the Server has to establish the connection to communicate with the Users. The Server will update each new voter's updating in its database. The Server will authenticate each voter by aadhaar before they access the Application. so that the user can access the Application.

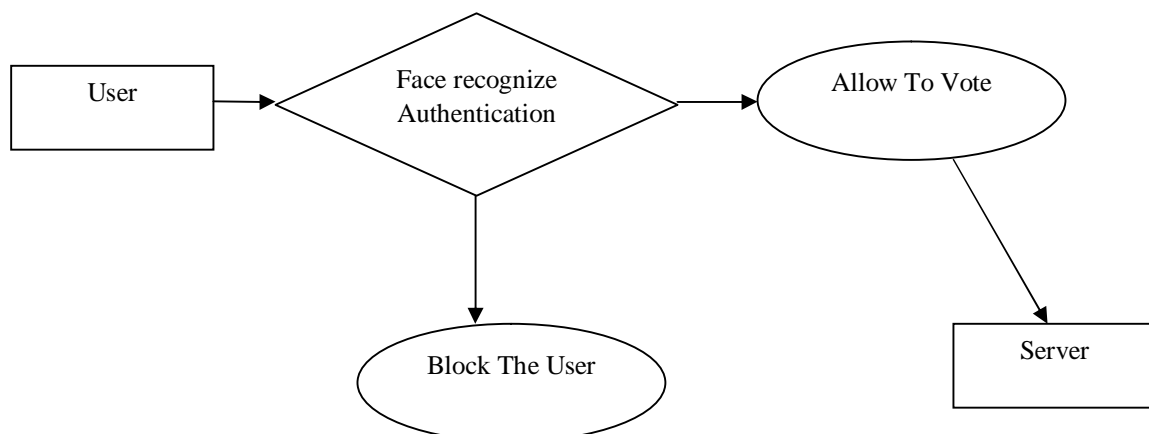


V.QR CODE SCANNING

In this module, Android application is deployed to scan the QR code of the Aadhaar card of the user which will identify the user details and communicate to the centralized server to fetch the user details like the location, list of candidates participating in that constituency.

4.FACE RECOGNITION AUTHENTICATION

We use microcontroller to communicate with the face recognition authentication so the people can independently cast the vote ,there will be no duplication or proxy of vote will be casted, election commission has validate the these authentication method and allow the user to cast the vote.



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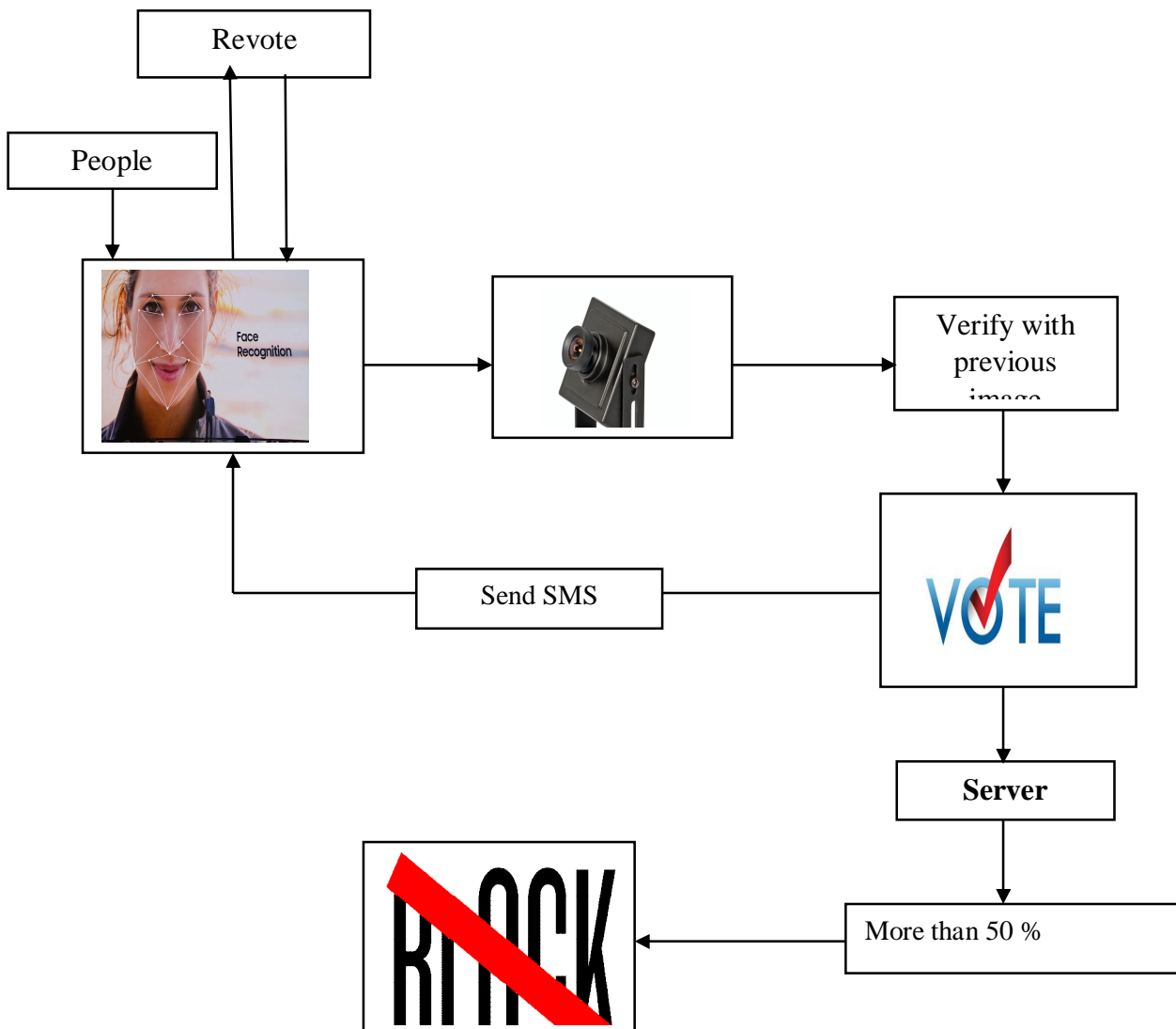
VIFAKE VOTE COUNT

In this module, if face is recognized then user can vote is counted but in case face is recognized then fake count is created. In this process Vote casted time, date and party name is stored in the voting server, so that the corresponding list of votes are identified to detect which party has involved in exercising more fake votes.

VII.DATA FLOW DIAGRAM

A data flow diagram shows the way information flows through a process or system. It includes data inputs and outputs, data stores, and the various subprocesses the data moves through. DFDs are built using standardized symbols and notation to describe various entities and their relationships.

Data flow diagrams visually represent systems and processes that would be hard to describe in a chunk of text. You can use these diagrams to map out an existing system and make it better or to plan out a new system for implementation.





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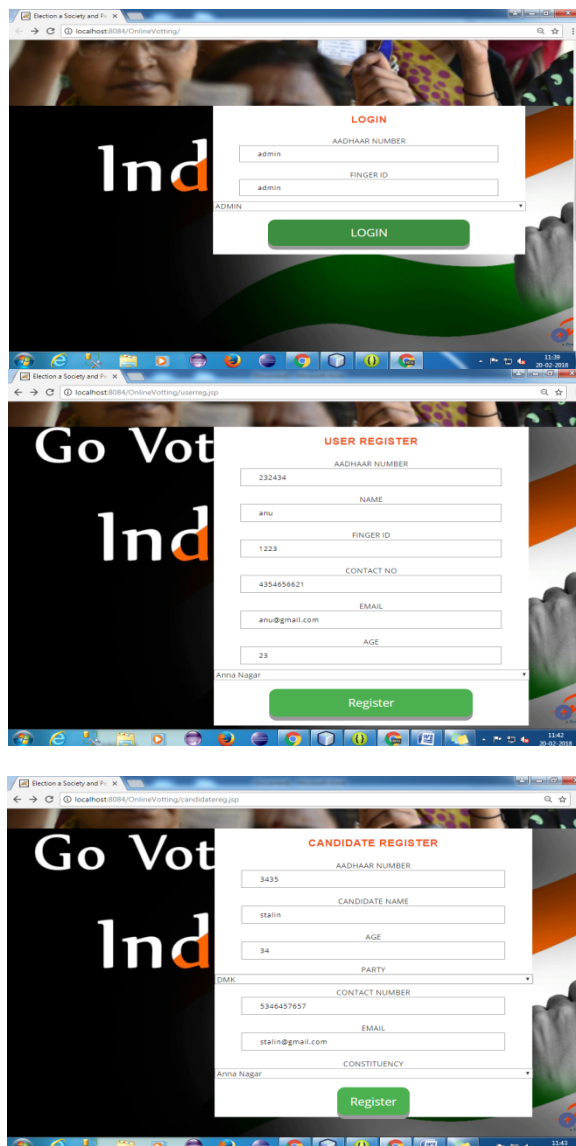
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VIII.RESULT

In this module results are identified by total counting process and automatically SMS alert is made to identify the winner during the election. Results are displayed and Alerts are made.

Screenshots Layouts:





ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

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IX.CONCLUSION

The paper infer that every people can poll their vote through mobile application. Aadhar number is the authentication number to poll the vote on application and for confirmation we use OTP.

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