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E-Voting System In Smart Phone Using Mobile Application

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Abstract-The development in the web technologies given growth to the new application that will make the voting process very easy and proficient. The E-voting helps in providing convenient, capture and count the votes in an election. This project provides the description about e-voting using an Android platform. The proposed e-voting system helps the user to cast the vote without visiting the polling booth. The application provides authentication measures in order to avoid fraud voters using the OTP. Once the voting process is finished the results will be available within a fraction of seconds. All the casted vote count is encrypted using AES256 algorithm and stored in the database in order to avoid any outbreaks and revelation of results by third person other than the administrator.

Keywords: Aes256, OTP, Biometric

I. INTRODUCTION

Voting is an important right for every citizen in democratic country. Traditional methodology of voting requires more time and wastage of paper. For centuries, the popular paper-based voting system has followed over the world. Even though, it does not provide the required combination of user-friendliness and efficacy. Loosing ballot papers, invalid votes and miscalculate are some of the encounters related with the paper-based voting system. Several electronic voting technologies have been proposed and presented by researchers through which easy accessibility and proficient voting mechanism.

Electronic voting has been appealing a lot of responsiveness and research for the last few years, for it has some notable benefits over traditional paper-based voting. Mobile voting which is a subgroup of electronic voting, is uninterruptedly gaining fame as it provides an efficient, effective, error free and time saving voting platform. Mobile phone voting has the proficiency to enhance the voting rate and the quality of polling. This paperrepresents the voting system transformationby developing a mobile phone voting and an application.

e- voting application helps users to suddenly and timorously vote using existing mobile networks.

II. LITERATURE SURVEY

Kalaichelvi established a new technique for encryption and decryption. It has substitution and inverse substitution table for encryption and decryption. The tables are developed based on ASCII value and the key value. Chetinkaya gives the description about the verification and validation activities that are carried out in voting system. It also helps in solving the problems that arises due to design and development in E-Voting system.

Sarah stated the comparison of DRE with the traditional machines like paper ballot, punch cards and lever machines. However, in users view DRE is considered to be significant than the earlier methods. Liaw suggested many properties for electronic voting systems. The main objective is the E-voting is same as normal voting but it is secure than regular voting only Authorized person can cast their vote. Sonja Hof has described Bio metric approaches to E-Voting and they are finger print, Iris ,Face , voice, Signature and he discussed about how this approaches can be implemented in E-Voting application

III. EXISTING SYSTEM

In the present system there are not any such application level system provisions within the country to hold out the voting and procedure as an entire. Also within the present status, there's no such application in use for automated system for voting consistent with the voting structure existing within the country. All the step by step procedures are administered by the authorized authorities with the roles assigned by the Election Commission of India. All the processstarting from registration to result publishing are done manually. The government on doing this process manually wastes lots of time and money. Thus the current system proves itself to be an inefficient one. The prevailing system isn't mobile based. The user or voter must want to travel to the polling place for casting their votes.

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IV. PROPOSED SYSTEM

Our E-voting system is an android application developed using Android studio. The front end used was XML and java for the rear end MYSQL and Firebase server.

The voter will login by giving the Voter id, Name and Region if the given voter details are correct it'll move to the voting page where the symbols and candidate name are posted after selecting the candidates the voter should enter mobile number for generating the OTP the voter should submit the OTP if it's a legitimate OTP the vote are going to be consider as valid .

For generating the OTP, we are using Firebase server. Firebase is made on Google infrastructure hence it's highly secured. Admin can login with the given user name and password.

The admin will activate the voting page on the day of election and adds the candidates for the election. The Admin decrypt the results using AES256 and announce the results.

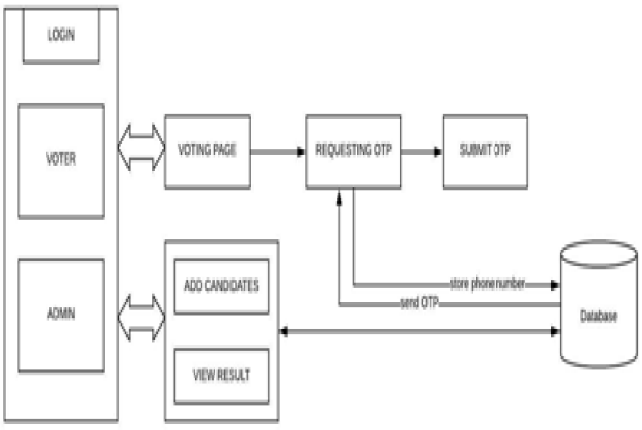

Fig.1 Architecture for E-voting Application Using Android

AES256 ALGORITHM

AES256(Advanced Encryption standard 256) is used for both encryption and decryption of the voting results. The AES256 uses same key for both encryption and decryption.

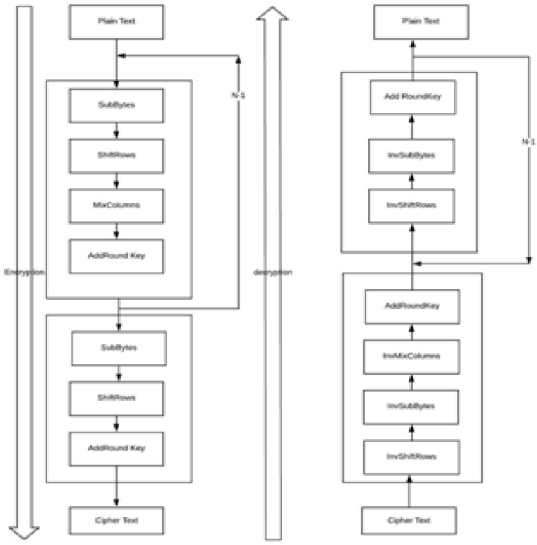

Fig.2 Flow Diagram for AES256

V. MODULES IN PROPOSED SYSTEM

There are four modules in the proposed system. The process of these three modules are discussed in the below session.

A. LOGIN MODULE

The E-voting application consists of login for voter and admin. The voter will login by giving Voter id, Name and Region where admin will login by giving username and password.

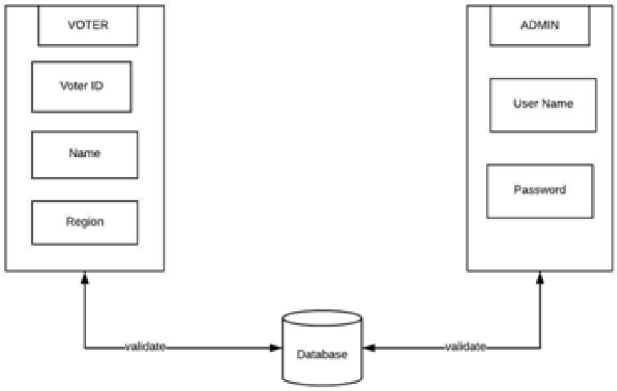

Fig.3 Flow Diagram for Login Module

B. VOTER MODULE

The voter will login to the application. After login the voting page will be displayed after chosen the candidate the voter should enter the mobile number for generating the OTP after thatOTP will be received by the voter then they should submit the OTPto consider the vote as valid.

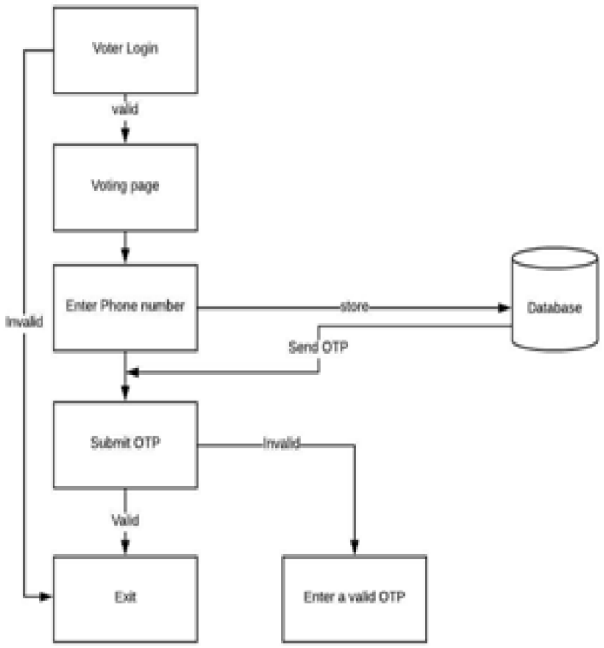

Fig.4 Flow Diagram for Voter Module

C. OTP MODULE

The voter will enter the mobile number for generating the OTP. The firebase server will authenticate the mobile number and sends OTP to the voter.

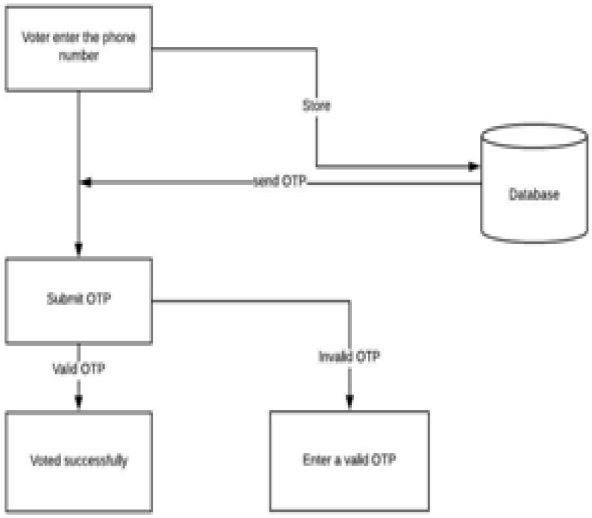

Fig.5 Flow Diagram for OTP module

D. ADMIN MODULE

The admin will login by giving user name and password.The admin will add the candidates for the election and can view the results.The admin will activate the voting page on the day of election.

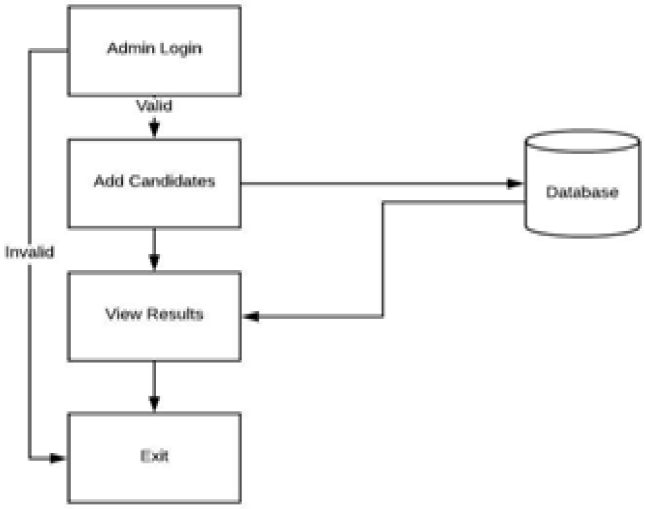

Fig.6 Flow Diagram for Admin Module

VI. RESULT

The proposed system helps in reducing the time for voting process. It helps the voter to cast their vote without going to the pooling booth. It reduces the fraud votes and also reduces the error that occurs while counting the vote manually. Hence paper work can be reduced. It will be very much helpful for the aged people because it does not require travelling for a long distance to cast the votes in the pooling booth. Since it is an online process, the results can be viewed very easily and quickly.

Fig.7 Welcome page of an E-voting application

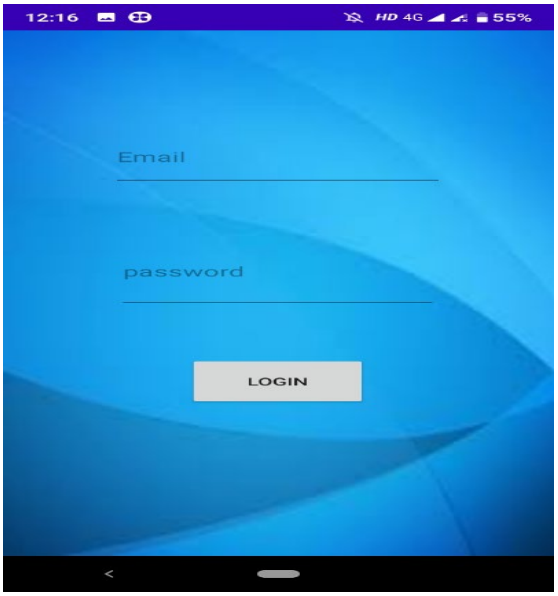

Fig.7 Login page for Admin

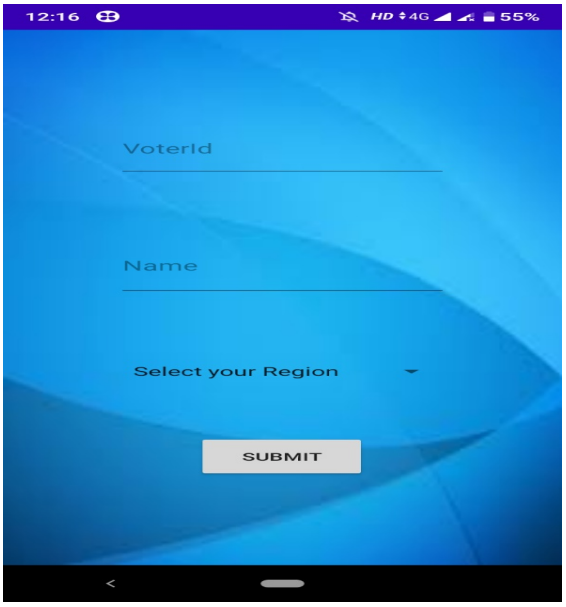

Fig.7 Login page for Voter

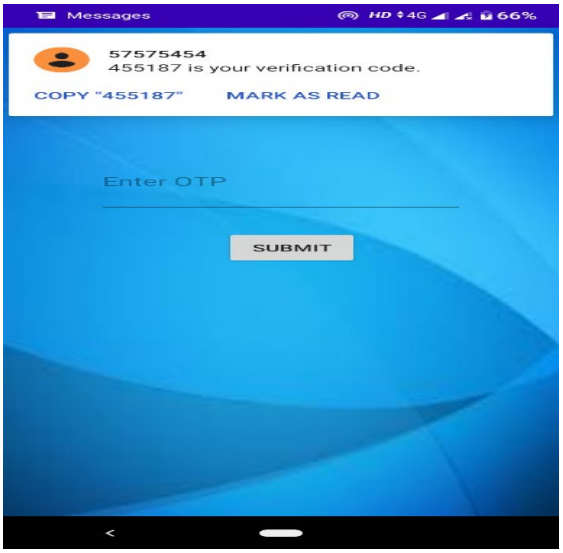

Fig.7 OTP page

vII. CONCLUSION

The percentage of people those who cast votes get increased since this E-Voting application is available in the playstore so that they no need to travel for the purpose of casting the votes which is registered in their native. The transportation charge will be decreased for carrying the Electronic voting machine to pooling booths. The human resources for conducting the election and counting the votes will be reduced. The burden of government employees and police protection will be reduced by using E-Voting application. The problem arising conflicts between the candidates and the Election Parties can be ignored by this E-voting mobile application.

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