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"I-Vote" Android Application for Internet-Voting

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Abstract: ***Internet voting has become a very important and popular topic in today's time. Because in many countries like Estonia, Switzerland, UK, France, Spain etc are used internet voting for his government elections. Internet voting system has gained popularity and has been used for government election in other countries. And it is totally paperless voting [1, 2]. But in our country even today voting is done through electronics machines and paper, which is very difficult for people. Using electronics machines and paper voting occur many problems and crimes, such as long queues for voting, time wasted in voting, maximum paper wastage, health problems, vote theft, voting machine errors, etc [4, 5]. It discusses how to reduce these problems and crimes, and how to provide better security and privacy for a better election. This case study discussed how these technologies can be integrated and used to develop an application that provides better functionality and helps reduce crime in our society [7]. Several existing and new application models were explained. Through this application, we are trying to solve the problem that people are facing [1]. This application is totally paperless and user friendly.***

Keywords: Blockchain, Android application, Web application, Cloud computing

1. Introduction

Electronic voting (also known as e-voting) uses electronic tools to assist or take over the casting and counting of votes. Depending on the particular implementation, e-voting can use stand-alone electronic voting machines (also called EVMs) or computers connected to the Internet (online voting). The system was developed and tested in the 1990s by state-owned companies Electronics Corporation of India and Bharat Electronics. They were gradually introduced in Indian elections between 1998 and 2001 [1, 2, 3]. Before the introduction of electronic voting, paper ballots were used in India and votes were counted manually [2]. The paper ballot method was widely criticized for leading to vote fraud and polling booth clogging, in which party supporters occupied polling booths and filled them with fake ballots. Printed ballots were also more expensive and required significant resources to count hundreds of millions of individual ballots after the election [9].

- Identification of voters
- Identification of Nominee
- Casting of vote
- Counting of vote

2. Proposed Work

We are work on to making a android application, which is easily installed in a smart phone by playstore. Using this application Nominees are feel his all details for election, voters can feel his all details for vote, voter can able to download voter id card, after voting they will receive success SMS on phone, and automatically calculate votes and declare winners. In this application the entire data store in cloud for successfully work of that application we use blockchain methodology.

3. Working Principle

'E-vote' is an Android and Web based digital voting system that assures the integrity of recorded votes for small and medium scale elections using blockchain as the major technology. It provides transparency, improvement, speed, efficiency and immutability during the entire voting process. Blockchain based voting refers to a voting system where citizens cast votes on the blockchain network [2, 3, 4, 5]. A blockchain based voting system aims to solve one of the main problems that plague the conventional paper based voting method voter fraud. Blockchain voting saves time, reduces costs, and paves a path for direct democracy. However, blockchain voting is not yet ready. Furthermore, it intends to enhance the system in the future to accommodate large scale elections with a viable solution to the blockchain dilemma issues [2]. This developed system, Figure 1. is divided into some interconnected components. These components are indispensable to provide features in intelligent way. The users are easily able to handle these components in their regular purposes for voting, especially the people in our society and country [5]. When Nominee want to participate in election then feel is all details, and when a voter want to vote then they will fill all his details and able to vote on a particular symbol. After voting voter received success SMS on a phone and automatically calculate the votes and declare winner. In this application we provide some features like SMS sending module, voter can able to download voter id card etc [11, 12]. In below diagram if voter put vote a particular candidate so his data is encrypted using a public key. Then data is store in a collector then data is decrypted for processing using private key [14]. After processing of data again data is encrypted using private key. And after completion of voting tally is automatically calculated the result [15]. This application is very useful because it is high secure and safe. This

application is that application is very useful because it is help to people to vote candidate From his home to use mobile phone. That application easily downloads in mobile phone [13, 14]. That application stopped delicacy. People will not need to be going anywhere for vote. That application stopped crime. Candidate not use fake id for vote [4, 5]. And people also not use fake id. Vote theft can be avoided using that application. That application is very useful for all people [8, 9].

Figure 1: Flowchart and working procedure of E-Voting System

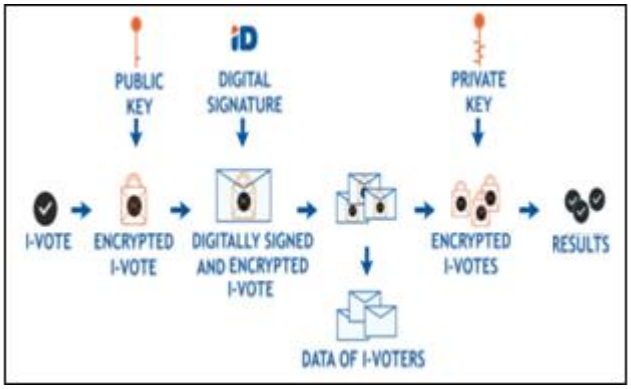

Figure 2: Flowchart and working procedure of E-Voting System

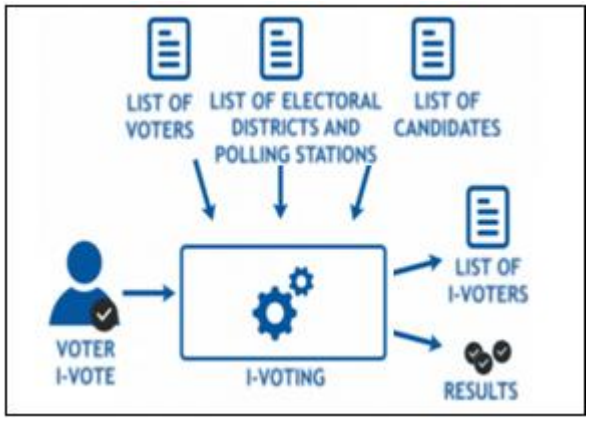

Figure 3: Flowchart and working procedure of E-Voting System

4. Features provide in application

All these technologies are used to connect all functions for better work. In this application, we include many features like vote success SMS, voter can able to download voter id and after voting automatically calculate the winner. In this application we divide all features in some modules which is explain below.

Module 1:-Admin

In this application main admin can add the all candidate details like Nationality, Name, Identity Documents (Aadhaar card, Pan Card, DL, Voter Id), Ticket Id, Voting Shape, Area, and Upload Selfie. Admin have a ability to Create Election and phase change. This application totally works without paper work [1, 2].

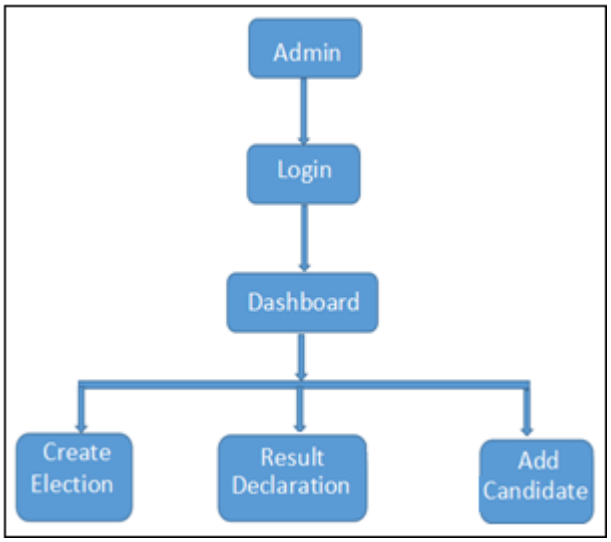

Figure 4: Flowchart and working procedure of Admin module

Module 2:-Candidate (Nominee)

In this application Candidate have ability to fill his all details like Nationality, Name, Identity Documents (Aadhaar card, Pan Card, DL, Voter Id), Ticket Id, Voting Shape, Area, Upload Selfie. Candidates are seen all his election results. And also have a ability to correction in his details [1, 2].

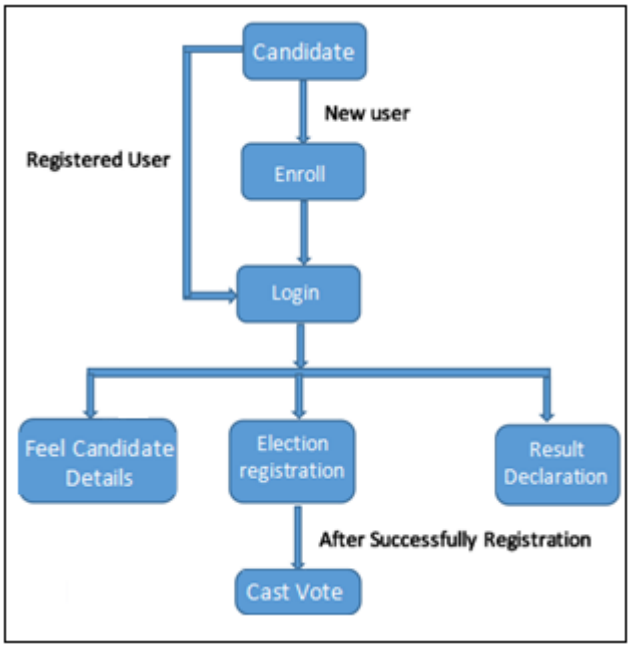

Figure 5: Flowchart and working procedure of Candidate module

Module 3:-Voter

Voter have ability to fill his all details like Nationality, Full Name, Upload Aadhaar card, Upload Voter Id, Choose Voting Shape, Choose Area Choose Area Person, Upload

Selfie. Voter can easily download his voter id from this application. When a voter fills his details then that time application will show he is eligible for vote or not and voter also seen the election result. When a voter votes, then he will receive vote success SMS on his phone [1, 2, 3].

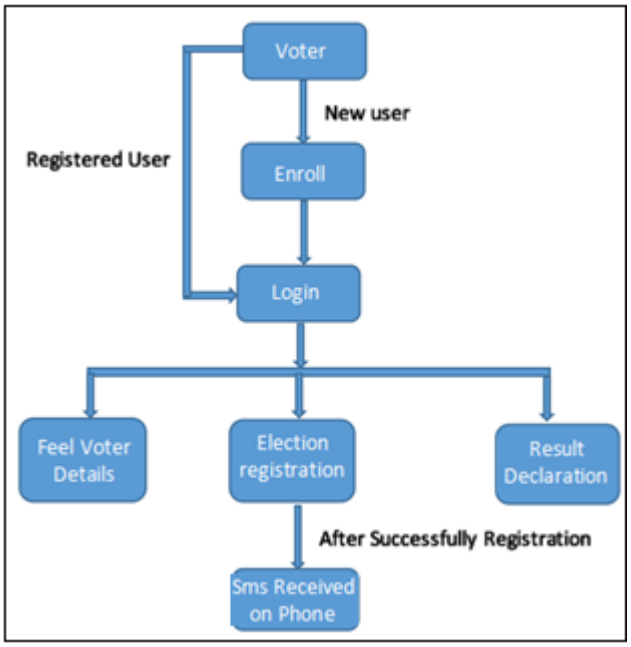

Figure 6: Flowchart and working procedure of Voter module

5. System Requirements

The development of the proposed application model can be done using both the software and the hardware of the user's smartphone. The software domain can be classified according to the programming language required, the development platform, IDE and OS (operating system). The application was developed using android studio and Python programming language [1]. The database of this application is a real-time database which is Firebase. Figure 6 shows the database system of the developed application. The user can add his all details which is stored on database module [1, 2]. All the information is stored in the database. We use a real-time database to send data online on the server. For better security we use Authentication Security module [3]. Some software is required for successfully work this application like Python language for data base work, Kivy and Django framework, MIST (Interface allows access to dApps). SOLC (convert HLL to EVM), METAMASK (Transaction Wallet), GANACHE (Interaction medium to smart Contract) [1, 2].

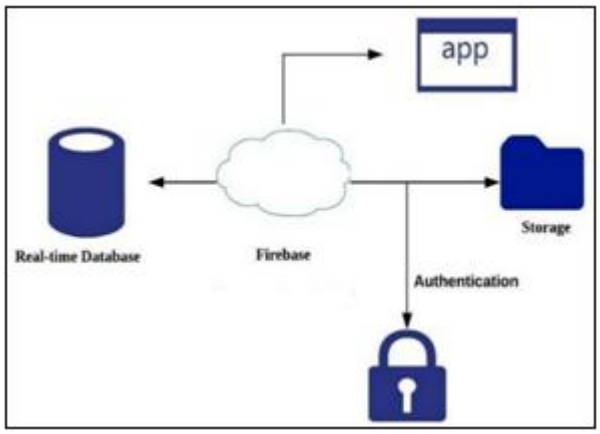

Figure 8: System diagram of database system of developed application

6. Benefits

There are important benefits to using that methodology and that application. To using that methodology anybody not able to give vote to using fake id. Nobody able to give duplicate vote (two times). To using that methodology vote theft can be avoided. Candidate cannot use fake votes for win. To using that methodology crime can be stopped. Electronic voting technology intends to speed the counting of ballots, reduce the cost of paying staff to count votes manually and can provide improved accessibility for disabled voters. Also in the long term, expenses are expected to decrease. [6] Results can be reported and published faster. [7] Voters save time and cost by being able to vote independently from their location. This may increase overall voter turnout. The citizen groups benefiting most from electronic elections are the ones living abroad, citizens living in rural areas far away from polling stations and the disabled with mobility impairments. [8] [6]

7. Future Scope

We will make a application which is based on voting system. That application is very useful because it is help to people to vote candidate from his home to use mobile phone. That application easily downloads in mobile phone. That application stopped duplicacy. People will not need to be going anywhere for vote. That application stopped crime. Candidate not use fake id for vote And people also not use fake id. Vote theft can be avoided using that application. That application is very useful for all people. It can increase voter access to elections while improving tamper resistance and public auditability. These factors matter because, for every democraticity nation holding elections, each vote matters. However, through elections are a symbol of hope and freedom to choose, many elections are hacked manipulated, or the data is stolen. In some countries, people refrain from taking part in elections due to privacy concerns. Whether it is paper ballot based elections or EVMs or any other digital voting system, security is always the biggest concern especially when monumental decisions are stake blockchain may be able to change this.

8. Conclusion

I will make a application which is based on voting system. That application is very useful because it is help to people to vote candidate. From his home to use mobile phone. That application easily downloads in mobile phone. That application stopped duplicay. People will not need to be going anywhere for vote. That application stopped crime. Candidate not use fake id for vote. And people also not use fake id. Vote theft can be avoided using that application. That application is very useful for all people. E-voting system application that assures the integrity of recorded votes for small and medium scale elections using blockchain as the major technology. The importance of integrity in e-voting system in critically evaluated through literature study. The effect of less integrity on the existing e-voting systems is high according to the significant number of previous studies have through literature. No single third party has fully central authority to control the e-voting process and immutability of recorded votes after being transferred into the blockchain. The entire voting process is transparent, and any legitimate voter can validate each process of an election, improved speed and efficiency, immutability.

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