

# International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 9, Issue 3, March 2020

## E-Voting System Using Bio-Metric

Shubham Hanumant Pawar<sup>1</sup>, Rushikesh Sahebrao Pacharne<sup>2</sup>, Divya Shyamkant Jadhav<sup>3</sup>, Mayur Deepak  
Sonawane<sup>4</sup>, Prof. Dighe M.S<sup>5</sup>

Student, Department of Computer, JSPM BSP, Wagholi, India <sup>1,2,3,4</sup>

Faculty, Department of Computer, JSPM BSP, Wagholi, India<sup>5</sup>

**ABSTRACT:** Increasing digital technology has revolutionalized the life of people. Unlike the electoral system, there are many conventional uses of paper in its implementation. The aspect of security and transparency is a threat from still widespread election with the conventional system (offline). General elections still use a centralized system, where in one organization manages it. Some of the problems that can occur in traditional electoral systems is with the organization that has full control over the database and system. It is possible to tamper with the database of considerable opportunities. In the present system there is no such application level system provisions in the country to carry out the voting and procedure as a whole. Also in the present status, there is no such application in use for automated system for voting according to the voting structure existing in the country. All the step by step procedures are carried out by the authorized authorities according to the jobs assigned by the ECI. The fact is all the procedures are carried out manually, starting from the registration process to result publishing.

**KEYWORDS:** Security and Protection, Hardware, Online Information Services

### I. INTRODUCTION

Lately, electronic voting systems have begun being used in many countries. Estonia was the first in the world to adopt an electronic voting system for its national elections [1]. Soon after, electronic voting was adopted by Switzerland for its state-wide elections [2], and by Norway for its council election [3]. For an electronic voting system to compete with the traditional ballot system, it has to support the same criteria the traditional system supports, such as security and anonymity. An e-Voting system has to have heightened security in order to make sure it is available to voters but protected against outside influences changing votes from being cast, or keep a voter's ballot from being tampered with. Many electronic voting systems rely on Tor to hide the identity of voters [4]. However, this technique does not provide total anonymity or integrity since many intelligence agencies around the world control different parts of the Internet which can allow them to identify or intercept votes. India is a constitutional democracy with a parliamentary system of government, and at the heart of the system is a commitment to hold regular, free and fair elections. These elections determine the composition of the government, the membership of the two houses of parliament, the state and union territory legislative assemblies, and the Presidency and vice-presidency. Elections are conducted according to the constitutional provisions, supplemented by laws made by Parliament. The aim of the project is to create and manage polling and election details. This is a system which enables all citizens to cast their vote online. Increasing the voting percentage across the country is the major goal of this project. People have to visit the booth to cast their vote in the present system across the country. This system is online and hence even people who live out of their home town can also vote. Database of all the eligible citizens and candidates are maintained by the system.

### II. LITERATURE SURVEY

Increasingly digital technology in the present helped many people lives. Unlike the electoral system, there are many conventional uses of paper in its implementation. The aspect of security and transparency is a threat from still

# International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 9, Issue 3, March 2020

widespread election with the conventional system (offline). Block chain technology is one of solutions, because it embraces a decentralized system and the entire database are owned by many users.[1]

Bit coin introduces a revolutionary decentralized consensus mechanism. However, Bit coin-derived consensus mechanisms applied to public block chain are inadequate for the deployment scenarios of budding consortium block chain. We propose a new consensus algorithm, Proof of Vote (POV). The former guarantees the separation of voting right and executive right, which enhance the independence of bulter's role, so does the internal control system within the consortium. As for the latter, under the circumstance that at least  $N_c/2+1$  commissioners are working effectively, our analysis shows that POV can guarantee the security, transaction? [2]

There is no doubt that the revolutionary concept of the blockchain, which is the underlying technology behind the famous cryptocurrency Bitcoin and its successors, is triggering the start of a new era in the Internet and the online services. In this work, we have implemented and tested a sample e-voting application as a smart contract for the Ethereum network using the Ethereum wallets and the Solidity language.[3]

Block chain was first introduced by Satoshi Nakamoto (a pseudonym), who proposed a peer to-peer payment system that allows cash transactions through the Internet without relying on trust or the need for a financial institution. Block chain is secure by design, and an example of a system with a high byzantine failure tolerance.[4].

Proof of stake protocol of block verification does not rely on excessive computations. It has been implemented for Ethereum and certain altcoins. Instead of splitting blocks across proportionally to the relative hash rates of miners (i.e. their mining power), proof-of-stake protocols split stake blocks proportionally to the current wealth of miners. The idea behind Proof of Stake is that it may be more difficult for miners to acquire sufficiently large amount of digital currency than to acquire sufficiently powerful computing equipment.[5]

E-voting is a potential solution to the lack of interest in voting amongst the young tech savvy population. For e-voting to become more open, transparent, and independently auditable, a potential solution would be base it on block chain technology. Block chain technology has a lot of promise; however, in its current state it might not reach its full potential.[6]

### III. PROBLEM STATEMENT

The new implemented voting protocol has two main players: The voter and administrator sections. The voter (which can be found at home, in a working station, in a special polling station or any other device) have the function of performing the Authentication and voting). The administrator performs the function of voter and candidate registration, authorization and validation of voter, database and counting and the result.

### IV. SYSTEM ARCHITECTURE

In this paper, Working of this Biometric Voting System for Election is a little bit complex for beginners. First of all, user needs to enroll finger or voters (in this code max limit of the voter is 25) with the help of push buttons/keys. To do this user need to press ENROLL key and then LCD asks for entering location/ID where finger will be a store. So now user needs to enter ID (Location) by using UP/DOWN keys. After selecting Location/ID user needs to press an OK key (DEL key). Now LCD will ask for placing finger over the finger print module. Now user needs to put his finger over finger print module. Then LCD will ask to remove the finger from finger print module and again ask for placing the finger. Now user needs to put his finger again over finger print module. Now finger print module takes an image and converts it into templates and stores it by selected ID in to the finger print module's memory. Now voter will be registered and he/she can vote. By same method all the voter can be registered into the system.

# International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 9, Issue 3, March 2020

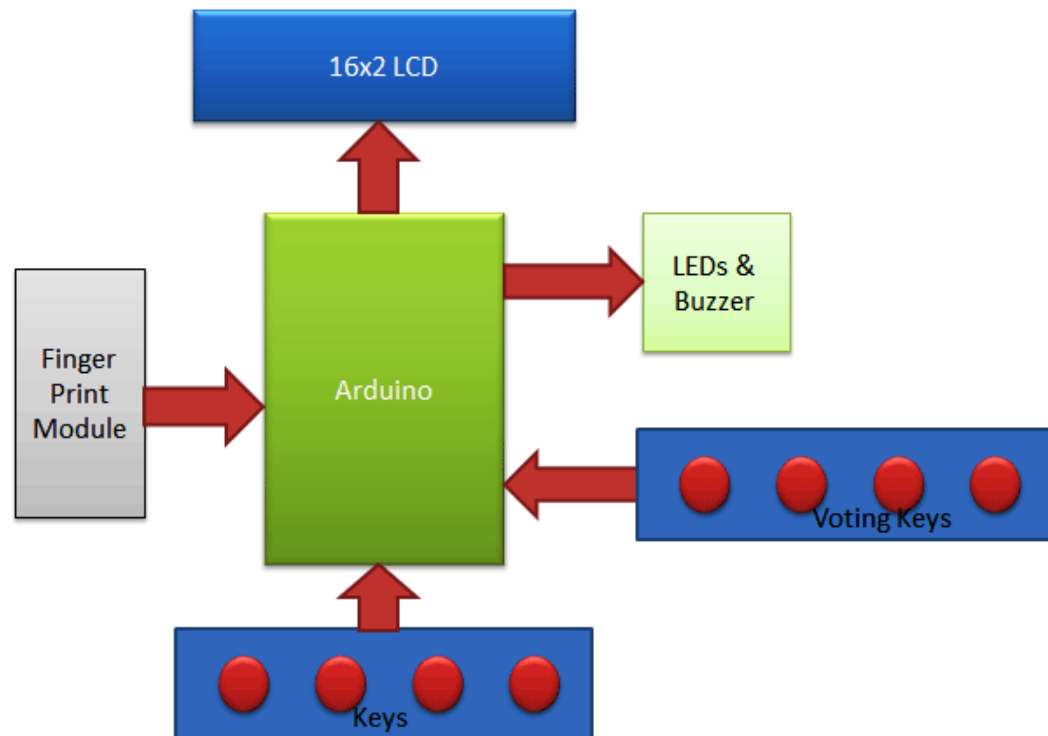


Figure. System architecture

## V. ALGORITHM

### AES ALGORITHM

AES is a cryptographic algorithm used to protect electronic data. It's a symmetric block cipher that can encrypt and decrypt information.

#### 1. KeyExpansions

For each round AES requires a separate 128-bit round key block plus one more.

#### 2. InitialRound

AddRoundKey—with a block of the round key, each byte of the state is combined using bitwise xor.

#### 3. Rounds

- SubBytes—in this step each byte is replaced with another byte.

# International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: [www.ijirset.com](http://www.ijirset.com)

**Vol. 9, Issue 3, March 2020**

- ShiftRows— for a certain number of steps, the last three rows of the state are shifted cyclically.
- MixColumns—a mixing operation which operates on the columns of the state, combining the four bytes in each column.
- AddRoundKey
- 4. Final Round (no MixColumns)
- SubBytes
- ShiftRows  
AddRoundKey.

## VI. ADVANTAGES

- **Planned approach towards working:** - The working in the organization will be well planned and organized. The data will be stored properly in data stores, which will help in retrieval of information as well as its storage.
- **Accuracy:** - The level of accuracy in the proposed system will be higher. All operation would be done correctly and it ensures that whatever information is coming from the center is accurate.
- **Reliability:** - The reliability of the proposed system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.

## VII. APPLICATIONS

- Loksabha Constituency
- Panchayat Wards

# International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 9, Issue 3, March 2020

## VIII. RESULTS

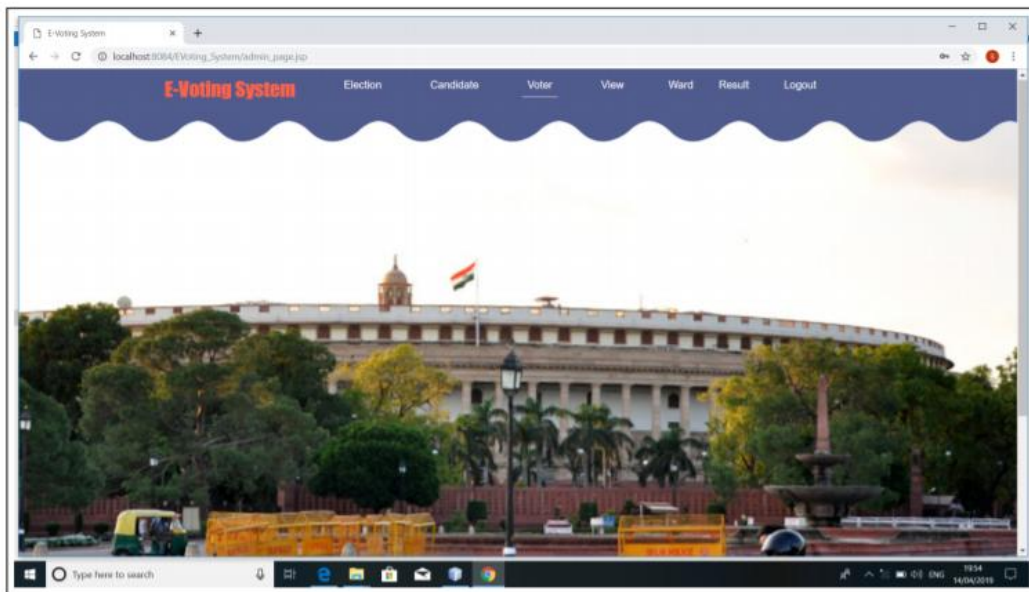


Fig 8.1: Home Page

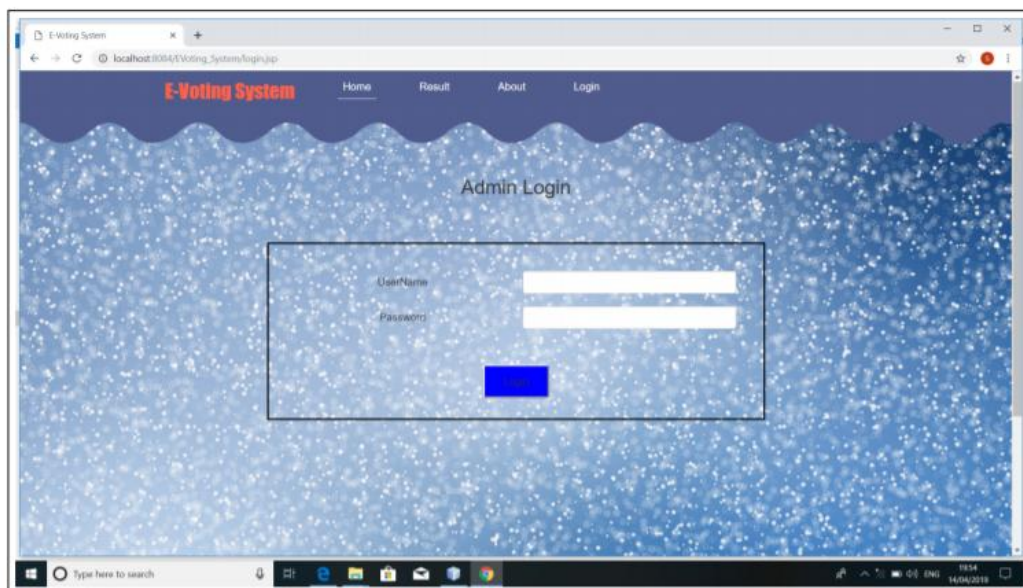


Fig 8.2: Admin Login Page

# International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 9, Issue 3, March 2020

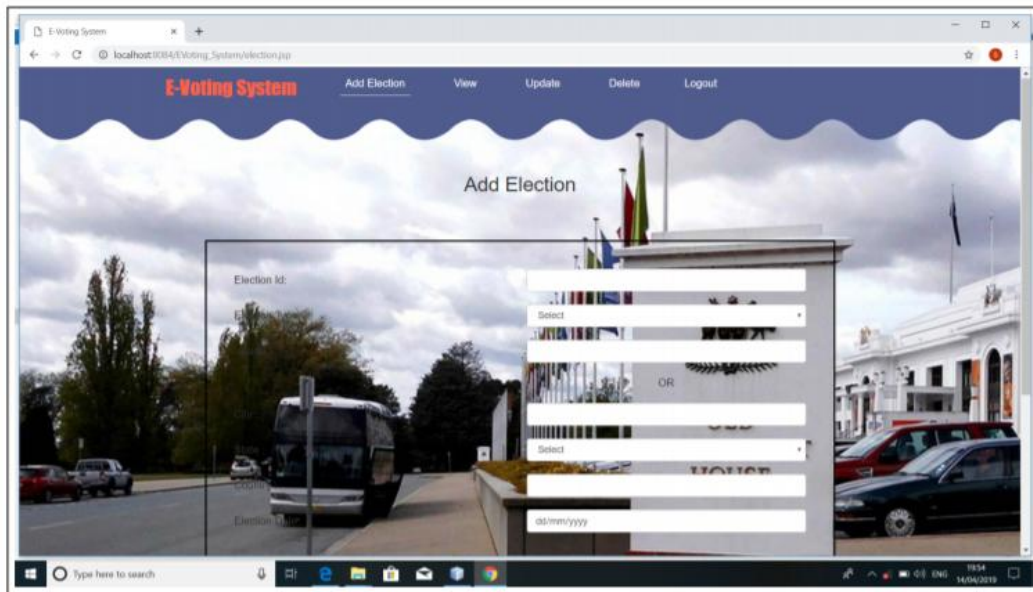


Fig 8.3: Add Election

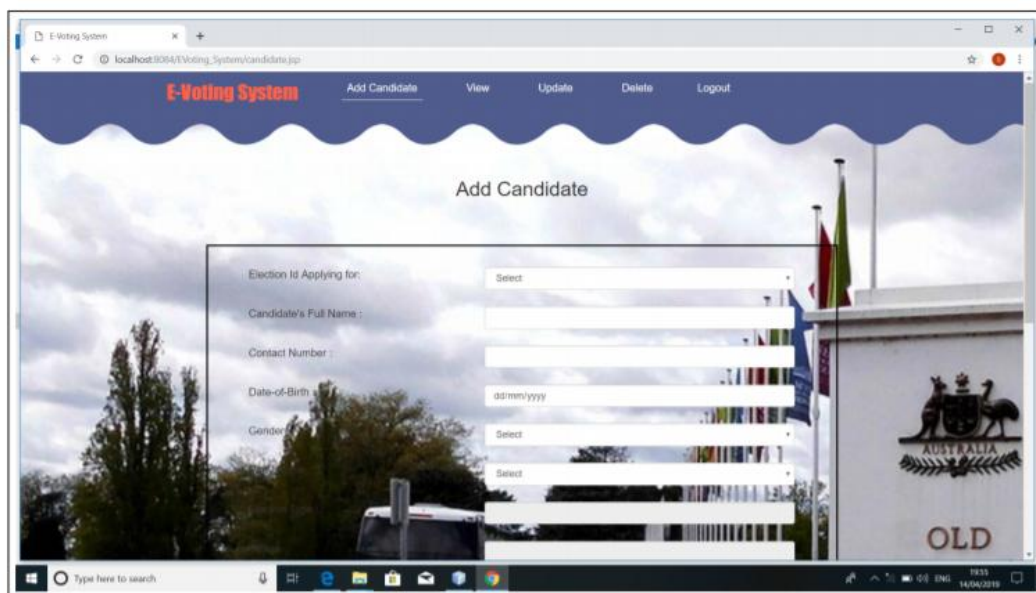


Fig 8.4: Add Candidates

# International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 9, Issue 3, March 2020

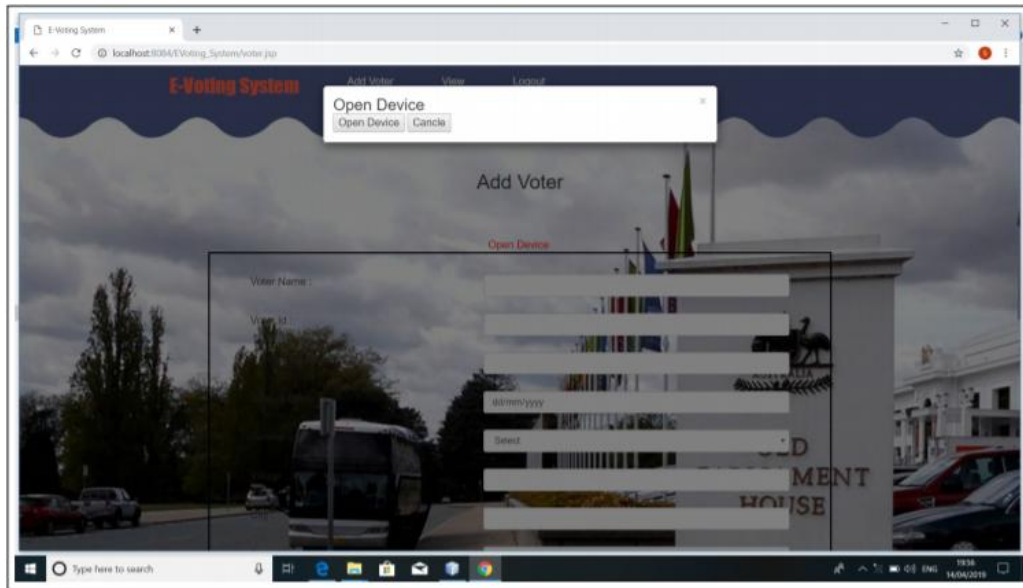


Fig 8.5: Add Voter

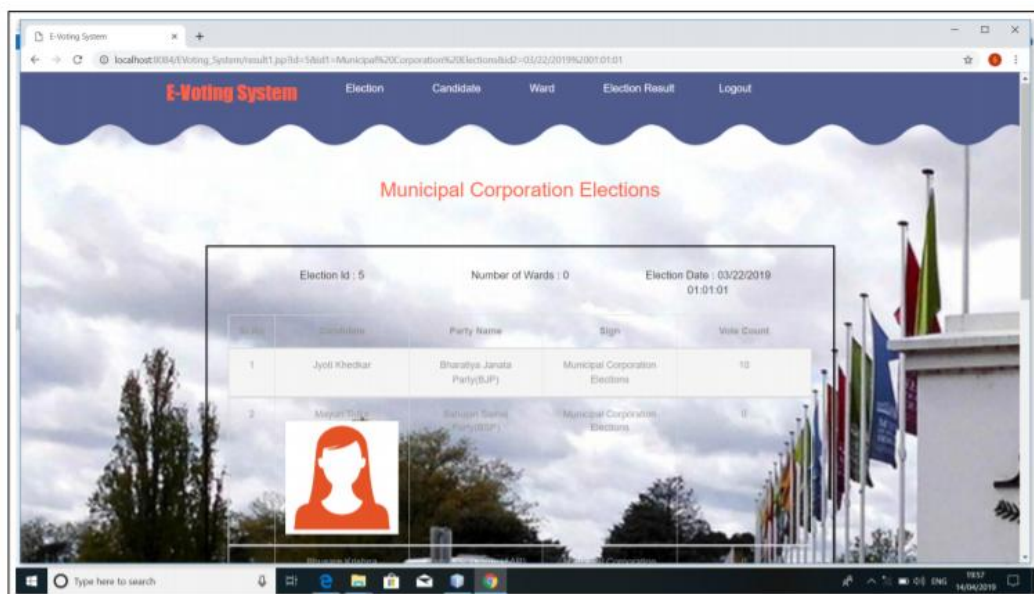


Fig 8.5: Election Information

## IX. CONCLUSION AND FUTURE WORK

In this Paper Online Voting system will manage the Voter's information by which voter can login and use his voting rights. The system will incorporate all features of voting system. Its provide the tools for maintaining voter's

# International Journal of Innovative Research in Science, Engineering and Technology

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

Visit: [www.ijirset.com](http://www.ijirset.com)

Vol. 9, Issue 3, March 2020

vote to every party and it count total no. of votes of every party. There is a DATABASE which is maintained by the ELECTION COMMISSION OF INDIA in which all the names of voter with complete information is stored. In this user who is above 18 year's register his/her information on the database and when he/she want to vote he/she has to login by his id and password and can vote to any party only single time. Voting detail store in database and the result is displayed by calculation. By online voting system percentage of voting is increases. It decreases the cost and time of voting process. It is very easy to use and it is vary less time consuming. It is very easy to debug.

## REFERENCES

1. Ahmed Ben Ayed,"A Conceptual Secure Block Chain-Based Electronic Voting System",2017 IEEE International Journal of network &Its Applications(IJNSA),03 May 2017.
2. RifaHanifatunnisa, Budi Rahardjo," Blockchain Based E-Voting Recording System Design",IEEE 2017.
3. Kejiao Li, HuiLi,HanxuHou, KedanLi,Yongle Chen," Proof of Vote: A High-Performance Consensus Protocol Based on Vote Mechanism & Consortium Blockchain", 2017 IEEE 19th International Conference on High Performance Computing and Communications; IEEE 15th International Conference on Smart City; IEEE 3rd International Conference on Data Science and Systems.
4. Ali KaanKoç, EmreYavuz, Umut Can Çabuk, GökhanDalkilic," Towards Secure E-Voting Using Ethereum Blockchain",2018 IEEE.
5. Supriya Thakur Aras, Vrushali Kulkarni," Blockchain and Its Applications – A Detailed Survey", International Journal of Computer Applications (0975 – 8887) Volume 180 – No.3, December 2017.
6. Freya Sheer Hardwick, ApostolosGioulis, Raja Naeem Akram, Konstantinos Markantonakis," E-Voting with Blockchain: An E-Voting Protocol with Decentralisation and Voter Privacy",IEEE 2018,03 July 2018.
7. KashifMehboob Khan, Junaid Arshad, Muhammad Mubashir Khan," Secure Digital Voting System based on BlockchainTechnology",IEEE 2017.
8. Huaiqing Wang, Kun Chen and Dongming Xu. 2016. A maturity model for blockchain adoption. Financial Innovation, Springer, Open Access, DOI 10.1186/s40854-016-0031-z
9. Buterin, Vitalik. 2015, On Public and Private Blockchains. [Online]<https://blog.ethereum.org/2015/08/07/on-public-and-private-blockchains/>
10. Zyskindet. al. 2015. Decentralizing Privacy: Using Block chain to Protect Personal Data, 2015 IEEE Securityand Privacy Workshops (SPW), San Jose, CA, USA, July 2015 [Online].Available: <http://dx.doi.org/10.1109/SPW.2015>JianliangMeng, JunweiZhang,Haoquan Zhao, "Overview of the Speech Recognition Technology", 2012 Fourth International Conference on Computational and Information Sciences.