

A SEMINAR REPORT  
ON  
**E-VOTING USING BLOCKCHAIN TECHNOLOGY**

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CERTIFICATE**



This is to certify that the Seminar report entitled "e voting using blockchain technology" submitted by Neeraj Sharma (2018021075) of Semester VI is a bonafide account of the work done by him under our supervision.

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Head of the Department- Mr. P.K. Singh

## **Acknowledgment**

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## **Abstract**

The theme of the seminar report is the use of blockchain technology .we are going to discuss benefits,usefulness and applications of blockchain technology in voting process.The aim of this report is to outline the proposal of solving the issues of digital voting by using blockchain technology.my report begins with an overview of blockchain technology followed by current problems and solutions to our election practices.it includes several technological terms like miners,ledgers,block etc.we will study and analyze the voting procedure step by step.it also includes some pictures to make our understandings easy.

## **Contents**

<b>1. Introduction – blockchain technology.....</b>	
<b>2. Uses .....</b>	
<b>3. Procedure &amp; requirements.....</b>	
<b>4. Conclusion.....</b>	
<b>5.References .....</b>	

## INTRODUCTION

Let's understand blockchain technology first.

Suppose your group of friends wants to transfer certain amount of money to each other. Now you might notice that some of the transactions fail. Reasons could be either

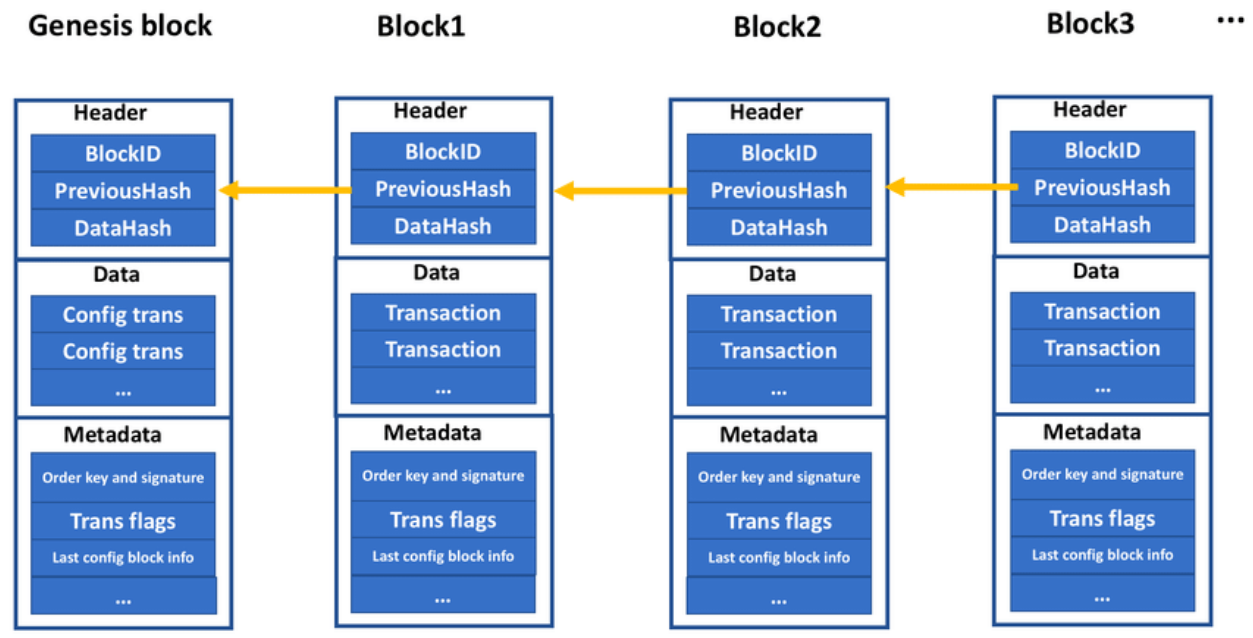
- -bank server not responds
- -accounts been hacked
- -daily transfer limit reached
- -high transfer charges

All of these happens because we are dependent upon third party organizations/broker. Just imagine what would it look like if we don't have to rely on them. Here comes the need of cryptocurrencies (e.g- dogecoin, bitcoins and many more), which is an application of blockchain technology.

### **Benefits are as follows:-**

- Independent from third party organizations/individuals like brokers.
- No effect of counterfeiting(fake currency).
- Secure and protected encryption technologies.
- Decentralized distribution of ledger (i.e collection of blocks) to each member
- No changes can be made.
- Peer to peer network i.e decentralized network

Blockchain simply means a collection of blocks linked to each other containing records of transactions and cryptographic hash of previous blocks. Blockchains are resistant to modification of their data because once recorded, the data in any given block cannot be altered retroactively without altering all subsequent block



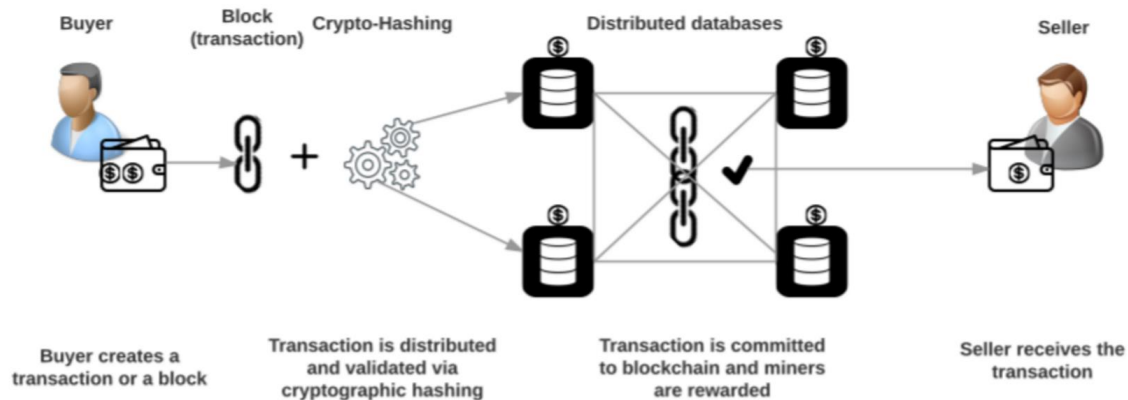
Each member has two keys-public key and private key.

Sender encrypts the transactions details along with his/her and receivers address using private key.there are various encryption algorithms available.it indicates that encrypted translation came from a particular sender.its transmitted all over the world using receivers public key.receiver decrypts the block using his/her private key.

Miners are the people who validate the translation whether it is valid or not.it requires high mathematical knowledge and he/she links the block only if it is valid.this process is known as proof of work. These miners are then rewarded

Process of adding blocks to the ledger is called mining.and hence the accounts of members get updated.

## Blockchain - Process



DQTs17

<https://images.app.goo.gl/JNcuT9CFHXdxmDZr9>

There are at least four types of blockchain networks — public blockchains, private blockchains, consortium blockchains and hybrid blockchains.

**Uses of blockchain technology are as follows-**

- Cryptocurrencies
- Smart contracts
- Financial service
- Video games
- Anticounterfeiting
- Healthcare
- Supply Chain
- Domain names

Now let's talk about our election practices .

Democratic voting is a very crucial and serious event in any country. The most common way in which a country votes is either paper voting system or E.V.M method but there are various problems associated with it. like



- Less transparency
- Cost of conducting election votes
- transportation costs
- Influenced or manipulative voting
- Hack threats
- Human errors
- Results took longer duration
- One can not even figure out whether his vote is counted or not.

Blockchain technology has a solution for it. we have already discussed the benefits of blockchain above .

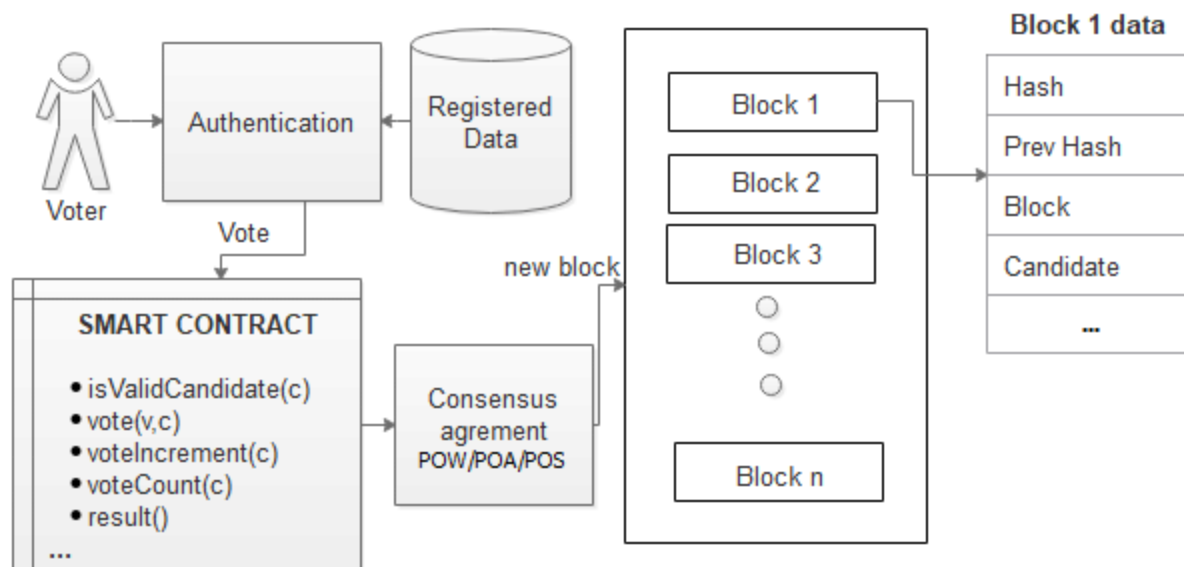
**Steps are as follows:**

1. voter would download and install the voting app.

2. he/she registers on the app. And sends his/her valid id proofs and other personal details required

3. polling station will verify the details from their eligible voter database, if not matched, voter will be rejected else voter will receive an e- vote form. he /she fills and submits the form. form might ask for personal details.

4. Polling station will ensure that there should be only one vote entered by the voter. if not, then block will be invalid and the voter gets rejected otherwise block will be added to ledger. this block contains voter's id, hash value of previous block, elected candidates name



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Using blockchain tech.

- Voter can ensure that his/her vote is counted .
- They can even cross check vote counts
- pure transparency
- Negligible Cost of conducting election votes
- No transportation costs
- No Influenced or manipulative voting
- No Hack threats because of strong and secure encryption technologies
- No Human errors
- Results are announced after few days only

## Requirements

All we need is just a good internet network and a computer/laptop/smartphone.

## Conclusion

I have introduced a unique, blockchain-based electronic voting system that utilizes smart contracts to enable secure and cost efficient election while guaranteeing voters privacy

The idea of using blockchain technology in digital voting systems is to make the public electoral process cheaper, faster and easier, is a compelling one in modern society. it even makes the electoral process quicker, normalizes it in the eyes of the voters, removes a certain power barrier between the voter and the elected official

This is by far the most suitable method of the electoral voting process yet according to me.

## References: -

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