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Blockchain can change the way we vote…

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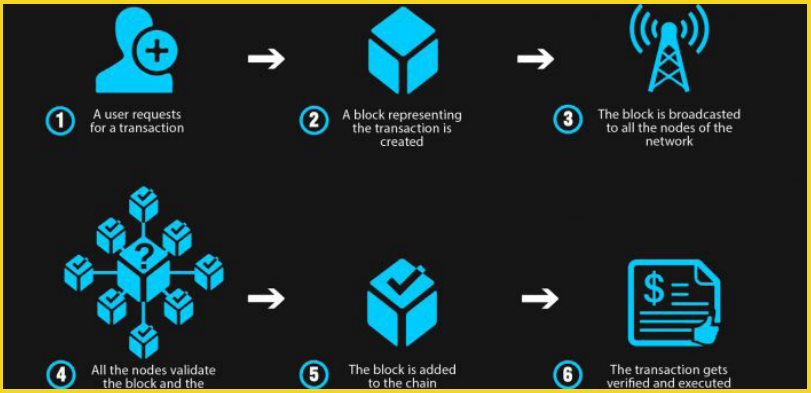
We all are familiar with Bitcoins as they have boomed the World in the past few years and we all know that blockchain is the technology or the backbone of Bitcoins. So what exactly is blockchain and why so much of hype about it in the tech world? Basically blockchain is the record keeping technology behind most of the cryptocurrency. In simple words if we just break the word "blockchain" itself we'll get two words "block" and "chain" hence it's safe to say that blockchain is nothing but chain of blocks.

Keywords
- Block-chain
- Security
- Voting System
- Election
- Network

Introduction:

Blocks simply store information in them like date, time, place, amount etc. blocks also contain the identity of the user but rather than storing the real identity of the user it stores the 'digital signature' of the user. These blocks have unique identity key of their own and these blocks act as entry into the digital ledger. Every block is then provided a unique key through a hash function and generally SHA-256 is used to generate the key. Each new block is then given extra information of storing the hash key of the previous block so that they form a chain of blocks hence called blockchains.



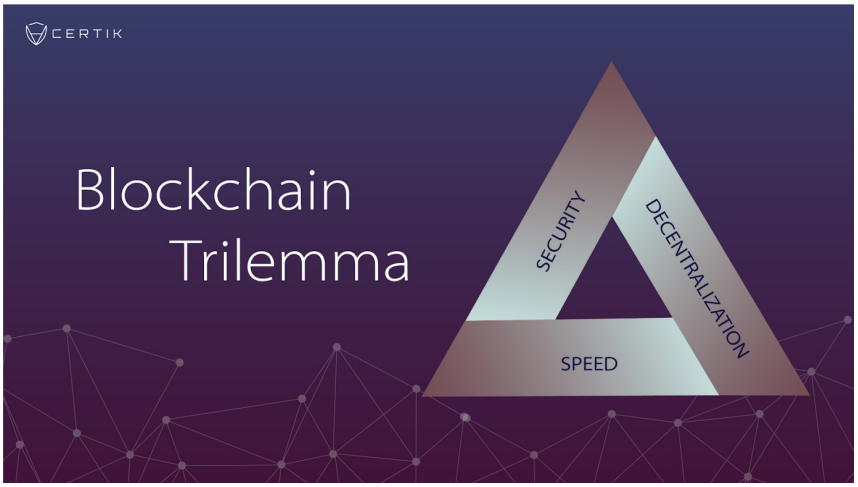
Source: https://101blockchains.com/wp-content/uploads/2018/07/How_Does_a_Blockchain_work-702x336.jpg

What's so special about blockchain?

Blockchain main advantage over other digital ledger is that rather than storing the information on a centralized server the ledger is stored in a decentralized manner i.e. a clusters of computers or networks stores a copy of the ledger each and gets updated every time when a new block is added into the ledger.

Hence if someone wants to manipulate the data they would require to change all the copies of ledgers and a small change in any block results in change of the hash key of the block therefore making it de-linked with the chain.

So we can say that blockchain is:
- Trustable
- Decentralized
- Immutable
- Secure



Source: https://miro.medium.com/max/1600/0*TbvCC0JuOTBSpgfP

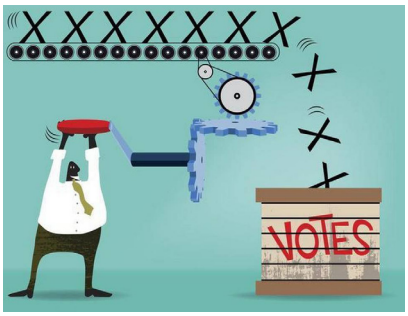
Blockchain in voting system:

Source: https://cdni0.trtworld.com/w960/h540/q75/51580_AP_214366116543_1552396241841.jpg

Voting is the backbone of a democracy as once in a while all the citizens of the country decide who they want to be their leader for the next few years, who will make their life easier and bring prosperity to them as a nation hence voting is an Integral part of any democracy and can be considered as sacred as every citizen's vote value is same irrespective of their caste, society, gender etc.

Being one of the biggest democracy in the world has its consequences as well. Indian elections are one of the costliest and time consuming elections in the world. In 2019 we spent around 50,000 crores in our election over a period of six-weeks and if we consider the value of each vote in terms of money it costed roughly 576 rupees per vote to the tax-payers. A country where about 60 percent of the population lives on around 216 rupees per day we can say that elections are really important.

Elections not only cost us money but time also as each and every individual takes a day of from his daily routine the whole city comes to a halt as people form a queue outside the voting booth waiting for their turn to vote. Having so much value yet our electoral system fails every time as we see the news of booth capturing, fake voting, people not turning up to vote etc. during the time of elections.



Source: https://www.thehindu.com/opinion/columns/65jde6/article26674116.ece/ALTERNATES/FREE_960/31SMVOTINGjpg

Due to the lack of integrity, security, confidentiality, authentication people are turning down their basic right to vote. If we use blockchain in our electoral system many of our problems can be solved easily, as India is growing to be Digital India maybe in future we can implement blockchain for voting as it can solve many of the problems that we face in our voting system as:

- People won't need to go to polling booths as they could vote through their phones with their digital signature hence saving time and authenticating each vote as each individual will be able to vote once through their digital signature hence not revealing their identity to anyone.
- Hackers won't be able to hack the data as the data(nodes) are totally decentralized.
- No more need of EVMs or polling booths hence reducing the cost of voting and no more booth capturing.
- Voters turnout at voting booths has reduced in past elections hence if they find an easier way to vote which doesn't affect their daily routine that number is likely to rise.

Hence we can say that introduction of blockchain in the voting system will pave the way for more transparency in our election system as their will be no errors, manipulation, or tampering.

Source: https://images.idgesg.net/images/article/2018/09/cw_mobile_voting_by_inueng_and_filo_gettyimages_3x2_1200x800-100772605-large.jpg

Conslusion:

Elections are the pivotal to the quality of a democratic country and its governance as they greatly impact the advancement or setback of the country in long term hence for elections to be fair and transparent as much as it can be at the same time not being heavy on the government pockets. For this to happen blockchain seems to be the most reliable concept for the time being as we have seen how blockchain has proved itself being reliable, transparent, secure, integral for bitcoins. Hence we can implement blockchain in India as India being the third world country which is still a growing economy we need to have honest and fair leaders who are accountable to the people of the country hence each and every voter should realise their value in elections and know how his vote has impacted the country's future. Blockchain is the future of election process as it's cheaper and more transparent than the present voting system.

Source: https://blocktribune.com/wp-content/uploads/2018/11/blockchain-vote-400x243.jpg

Rohit Kumar Lakhyani is a student of Amity University, pursuing his bachelors in computer applications (B.C.A). he is among the top students of his class who likes to maintain balance between his studies and passion hand in hand therefore when he is not attending classes he can be seen playing football or any other sports in the field. Apart from that he has keen interest in the technology world where he always looks up for upcoming trends in technology and is good at coding. He has also worked on projects based on machine learning and has good knowledge in python.

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Annexure I

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Reviewers Comment

Review 1: The paper has very well explained how blockchains can take over the shortcomings of present voting system.

Review 2: The Blockchain is a continuing cryptographic record, or ledger of digital events that have been dispersed, or shared among many different parties.

Review 3: The present election system is susceptible to post-election deception since it relies on third parties like humans or centralized databases to collect, count, and audit votes. While a centralized database is susceptible to hacking, persons are vulnerable to corruption.

Editorial Excerpt

The article has 1% plagiarism which is accepted as per the norms and standards of publication for the magazine. The authors have modified the paper as per reviewers' comments and editorial boards suggestions. The comments related to this manuscript are noticeable related to the theme " The Role of Blockchain can change the way we vote" both subject-wise and research- wise. Voting system governed by the blockchain technology uses smart contracts that will result in more cost efficient elections that also ensures voters' privacy and also reduces the instances of cheating and data manipulation. Voter registration databases will be immutable with the help of block chain After the editorial boards observations and blind reviewers remarks the article has been decided to categorise and publish under the "**Scrutiny Tip** (ST)" category.

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Thanks all the people who have been by my side always and kept on giving me inspiration and support throughout my life. Special thanks to Dr. Rajbala Simon for trusting and giving me the opportunity to write an article for the Cybernomics with the title "Blockchain can change the way we vote

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