Sri Lanka Institute of Information Technology

Project Topic Assessment – 2018

Research Problem:

Currently most of the countries use paper base election mechanism for the election in both private and public sectors. For the paper base elections, it requires large group of people in order to maintain the elections. Therefore, it will cost huge amount of money for maintenance process of the election. Vote counting is done by manually in this system. Therefore, this process consumes more time, also votes can be rejected because of the little mistakes of the voters. Those kinds of mistakes can be reason for the many election violations.

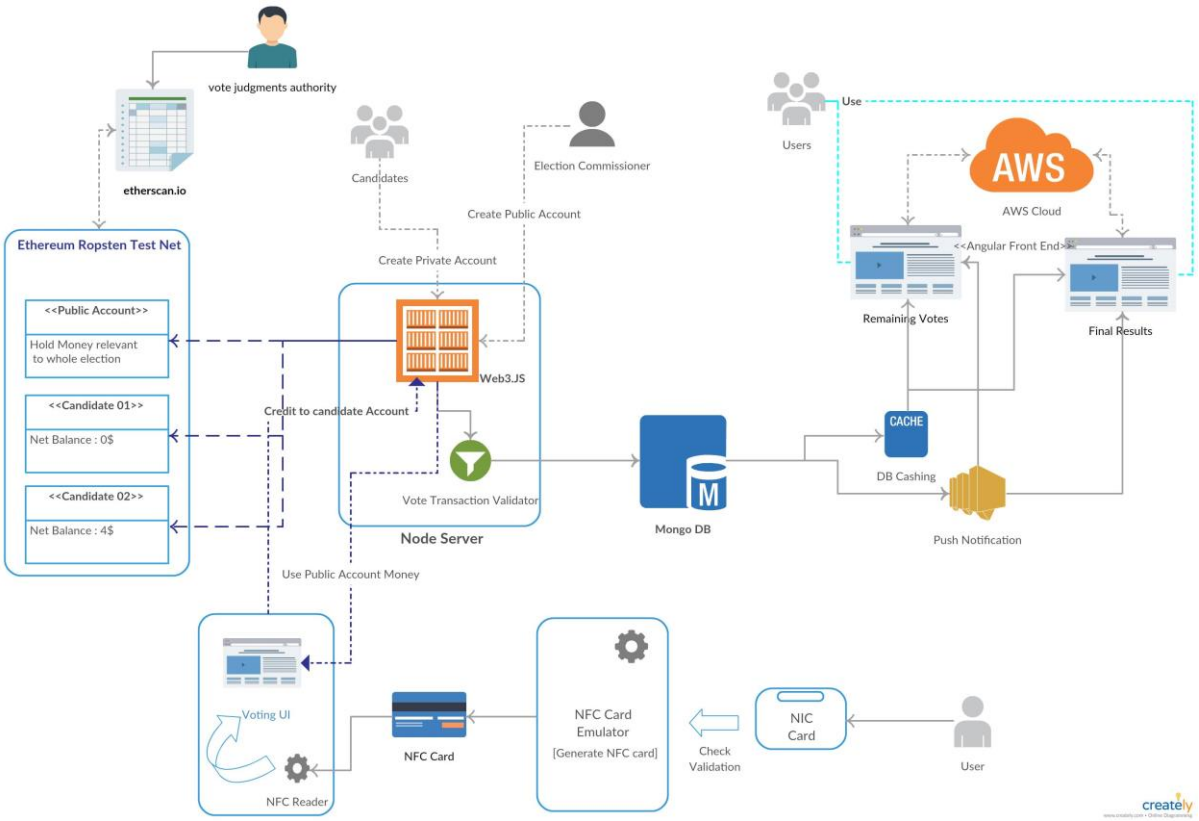
To avoid the mistake of the paper base election people introduced the electronic voting systems. In this system also have some positive and negative effects on elections. Electronic voting systems resolve the time-consuming issue and it need less staff in order to maintain the election processes. But this mechanism has huge problem, it follows client server architecture to maintain the election. Because of that election result calculation is done using centralized server and that server handles all the voting machines. Because of this behavior this system can be fail at any point of time. Cyber attackers can be attack to the central server and can change the data in it. The other disadvantage of this system is, there is no evidence to prove the vote count or election result.

Research Area:

Data Communication with Blockchain

Solution proposed:

Blockchain technology resolves most of the drawbacks in the electronic voting system. It introduces distributed nature to the electronic voting system. Therefore, it hasn't any centralized server. Instead of centralized server, Blockchain technology uses Miners, who can give their computational power to validate every transaction of the system. The most important thing in this technology is, each voting machine maintains public distributed ledger that keep track of all the transaction among every machine. Because of these facts no one can able to attack or change the data in the system. If someone tries to change the public distributed ledger of one voting machine, those chargers are replaced with correct value by referring to the other public distributed ledgers of all voting machines. Vote calculation also done in real-time using the ledger. That public distributed ledger can be used as evidence to prove the correctness of election results or vote count. Therefore, this Blockchain mechanism will improve the easiness of maintaining elections and accurate of the election results.



Technologies to be used:

- NodeJS (Web3js)
- Angular
- HTML5, SCSS
- Mongo DB
- Ethereum - Ropsten Testnet
- Blockchain
- NFC

Team Members:

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Acceptable: YES/NO

Changes proposed:

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Any other Comments:

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Approved by CDAP Group:

Member's Name	Signature