Voting Process

Current online voting process

The most common technology implemented for online voting is centralize network. Firstly, user login to a system. The user identity then is verified by the system to determine if he/she is legitimate to cast a vote. The system records all the user information and stores in a database, which is authority restricted access to the user. After that, the users those who are authorized to join the vote are able to cast their vote. The vote delivered to the server is encrypted by the user digital signature. Digital signature is used to encrypt and decrypt the message sending over the internet. Each user has a private key and public key to verify them self on the system. Private key, also called secret key, is the key they keep for themselves. The user uses private key to encrypt the ballot. Their public key is delivered along with the ballot in order for the system to decrypt their ballot. The system now gathers the ballots, decrypts and calculate the final result. Finally, the result is informed to the user.

Blockchain Voting process

Blockchain technology uses decentralized network, which make the voting process different from centralized network. At the beginning, the user identity is encrypted into a hash and the verification process depends on this hash. Those who participate in the online voting event have a copy of the database on their machine and they only know each other by their hashes. The voting event is conducted by smart contract. It is a function on the network that implement whenever it is called. When the users cast their vote to the network, it is encrypted and stored within a block. This block is broadcasted to the network for the users to update their database on their local machine. The encrypted messages that the voters send to the network are only able to read by the sender and the smart contract. At the end of the process, when all the users have delivered their ballots, the smart contract calculate the result and broadcast to the network.