COMPUTER NETWORKS MINI PROJECT

TOPIC : E-VOTING USING BLOCKCHAIN

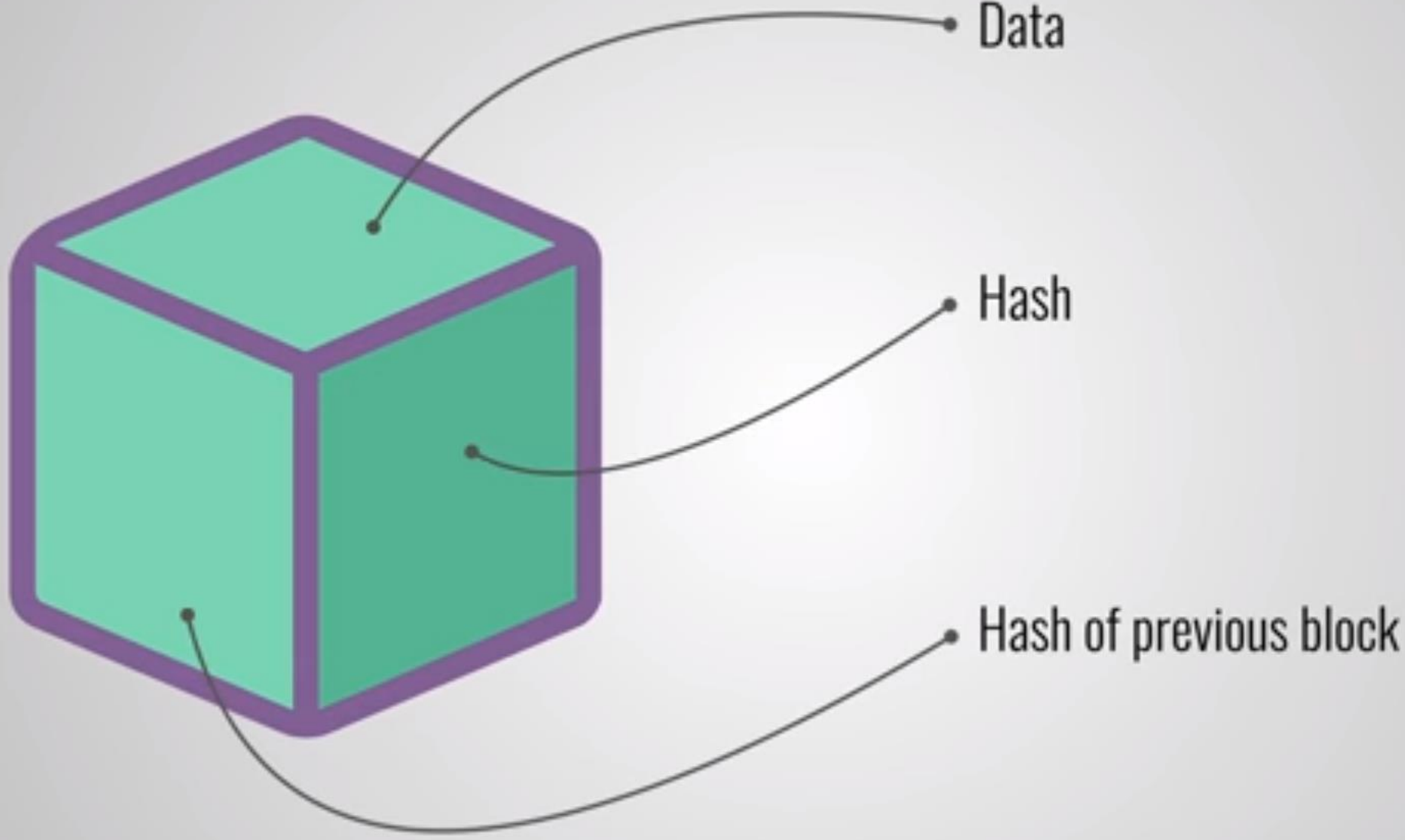
EFFORTS BY:		
	1. PRANAV MORE	TECOB215
	2. MOHIT NAKHALE	TECOB221
	3. ROHIT NAWALE	TECOB222
	4. KAUSTUBH PATIL	TECOB230

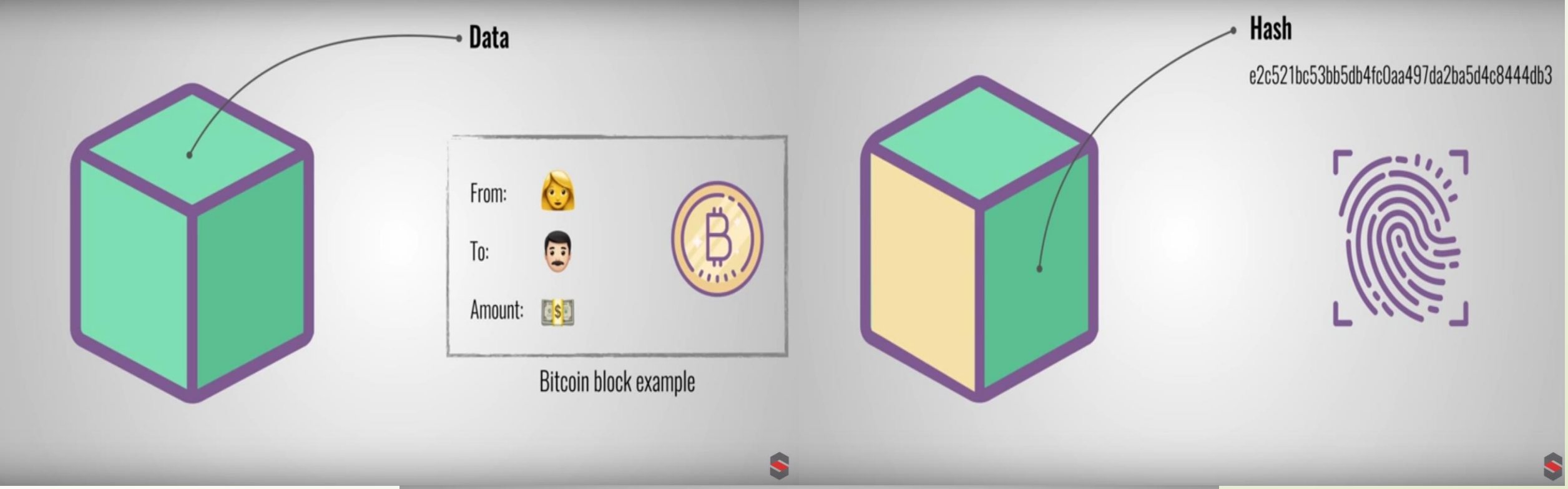
WHAT IS BLOCKCHAIN?

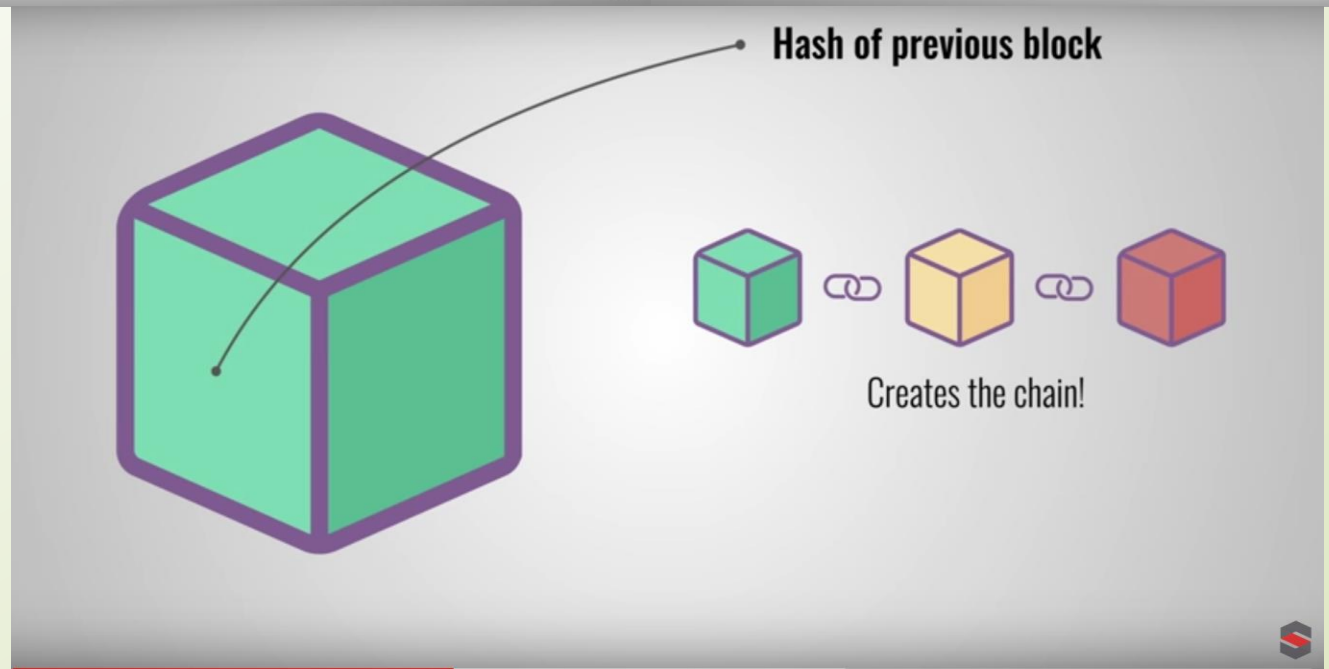
Blockchain

Simply explained

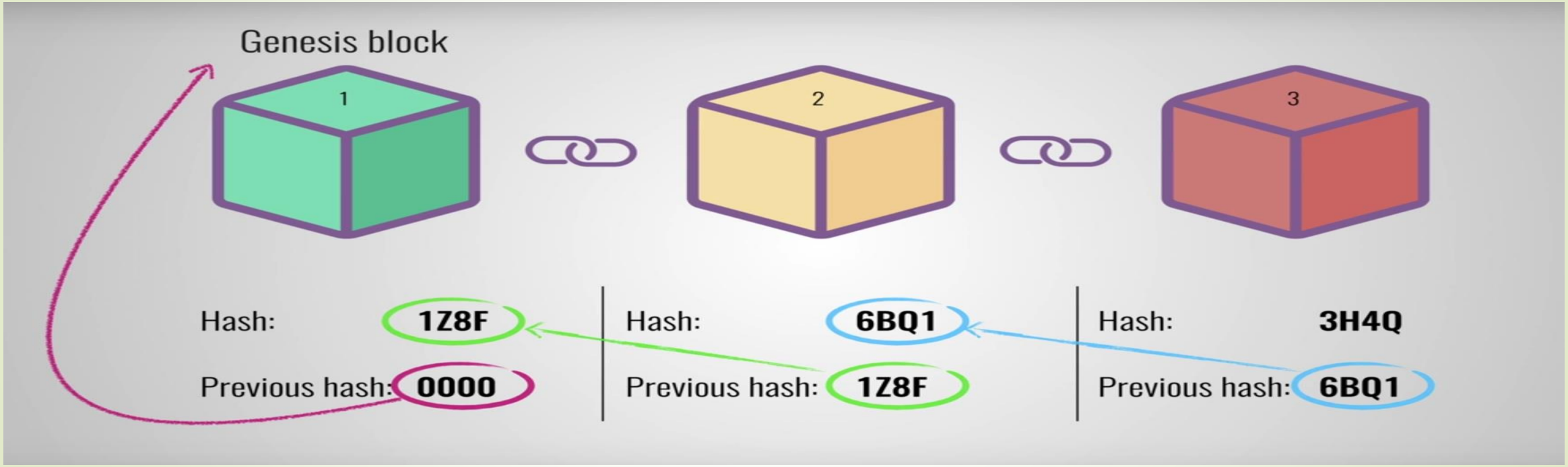
AN INDIVIDUAL BLOCK



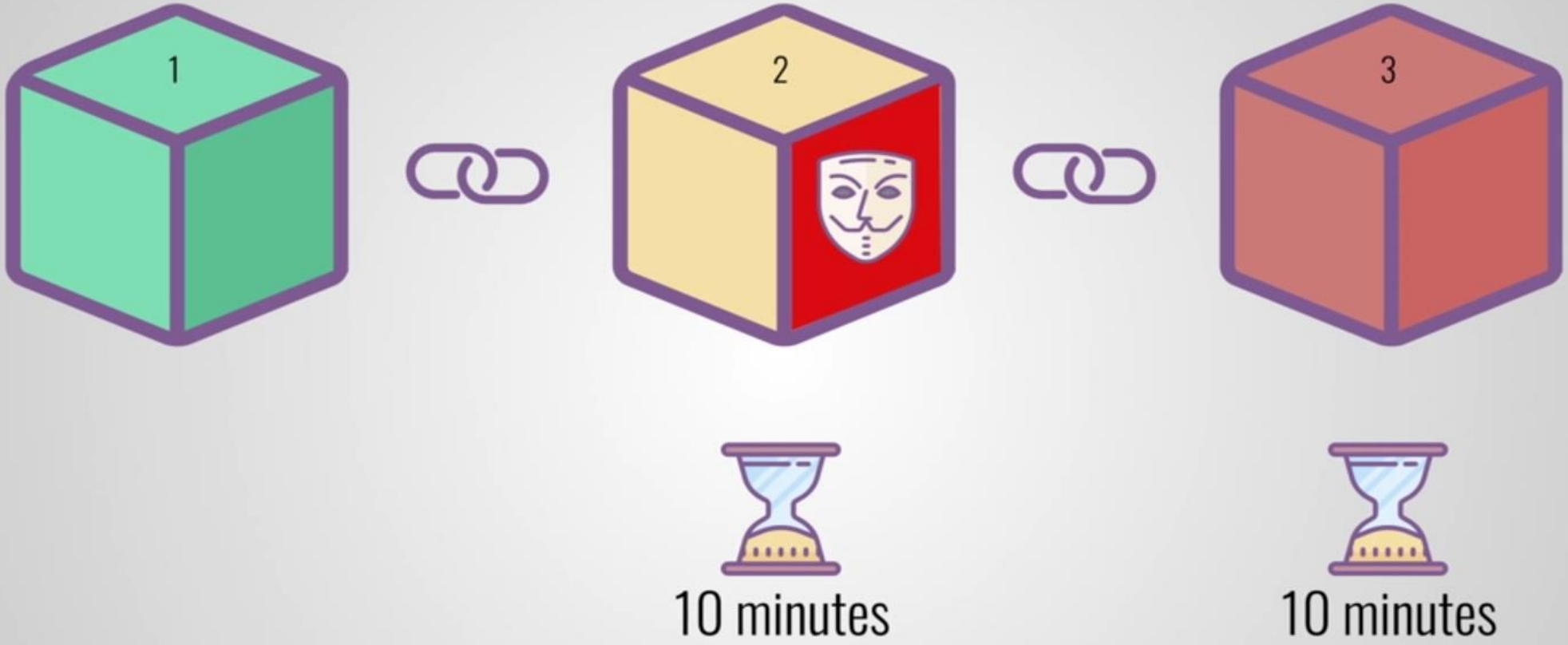

Data
From:
To:
Amount:
Bitcoin block example
Hash
e2c521bc53bb5db4fc0aa497da2ba5d4c8444db3


Hash of previous block
Creates the chain!

EXAMPLE


Genesis block
1
2
3
Hash:
1Z8F
Previous hash:
0000
Hash:
6BQ1
Previous hash:
1Z8F
Hash:
3H4Q
Previous hash:
6BQ1

PROOF OF WORK

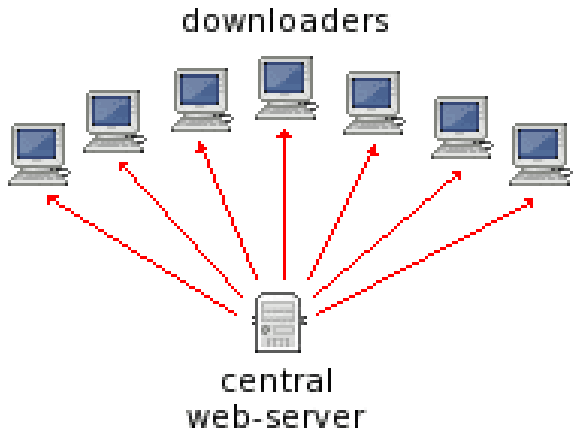


ADVANTAGES OF BLOCKCHAIN :

- **Empowered Users:**
  Users are in control of all their information and transactions. No third party is involved.
- **Lower Transaction Costs:**
  By eliminating third party intermediaries transaction costs are reduced.

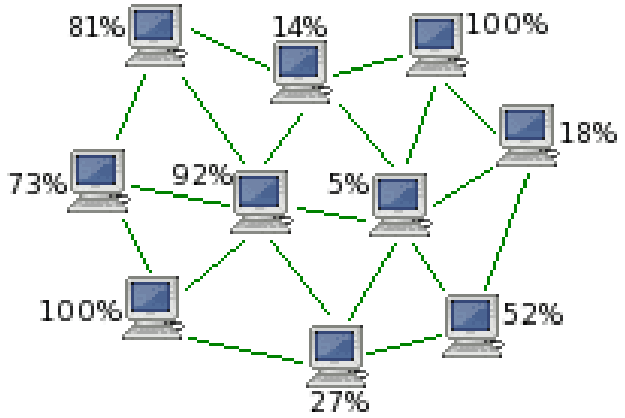
Decentralized:

Traditional Centralized Downloading

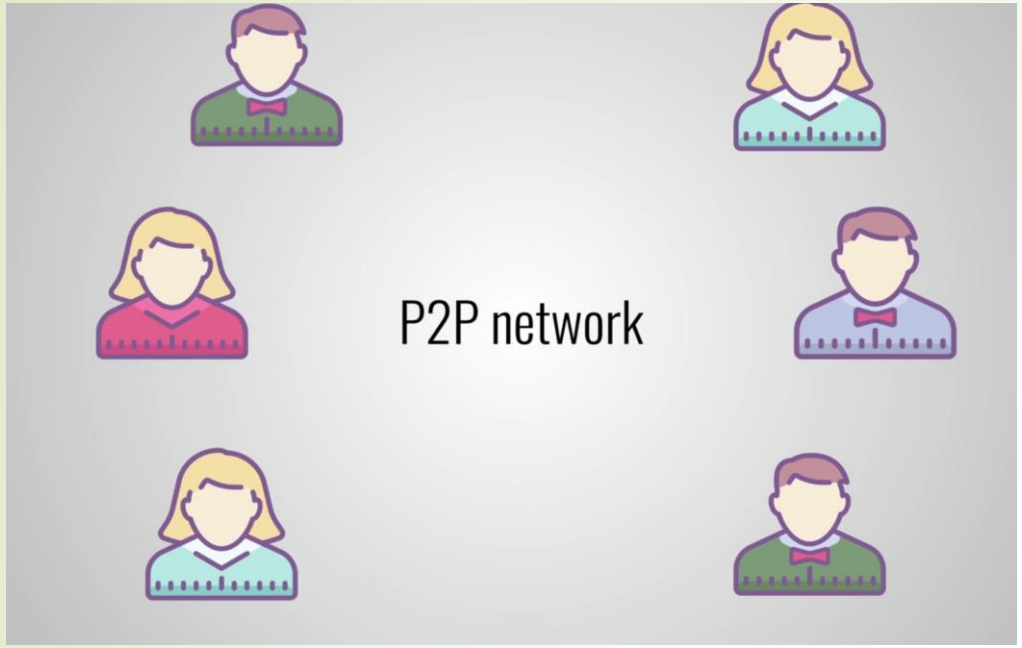


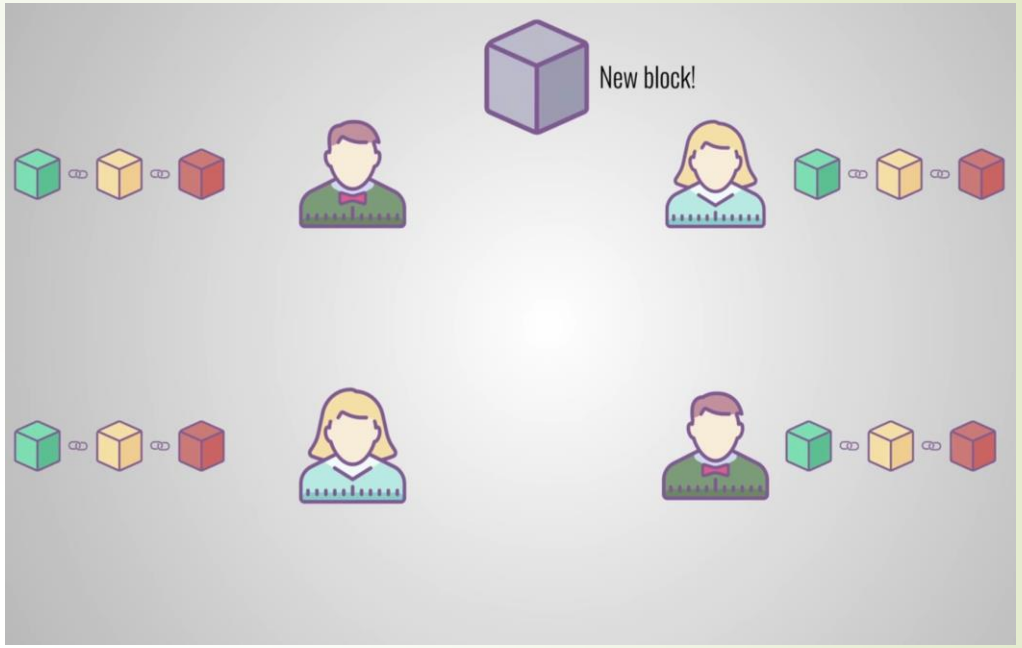
- Slow
- Single point of failure
- High bandwidth usage for server

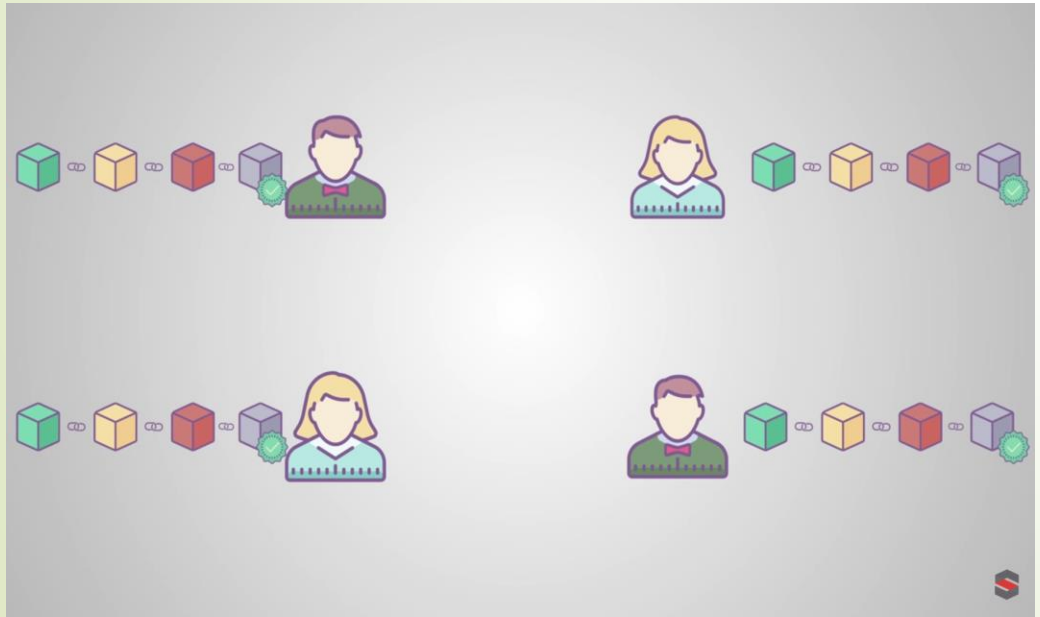
Decentralized Peer-to-Peer Downloading

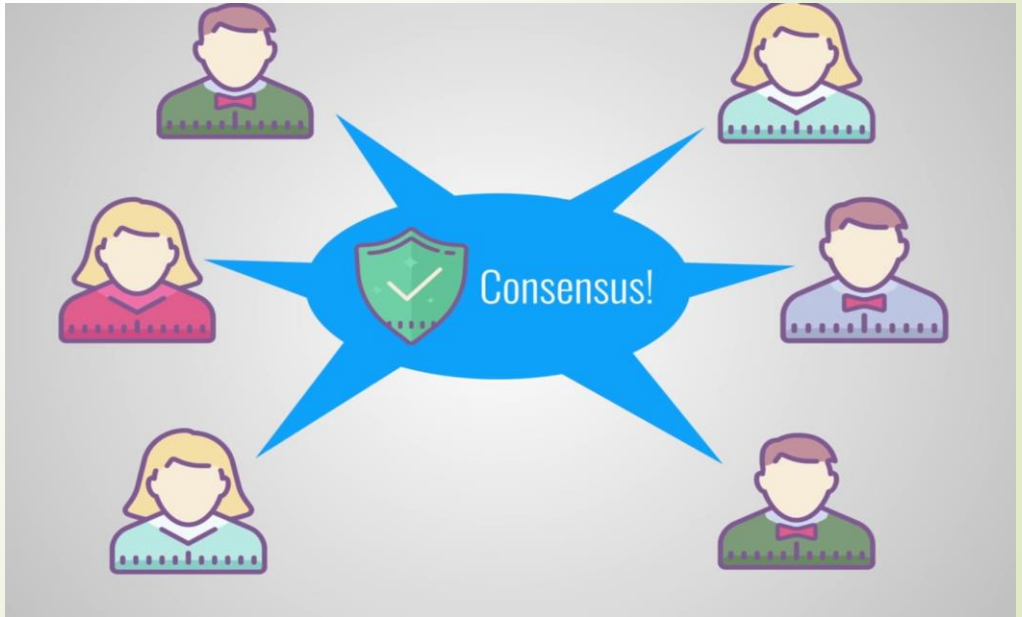


- Fast
- No single point of failure
- All downloaders are also uploaders

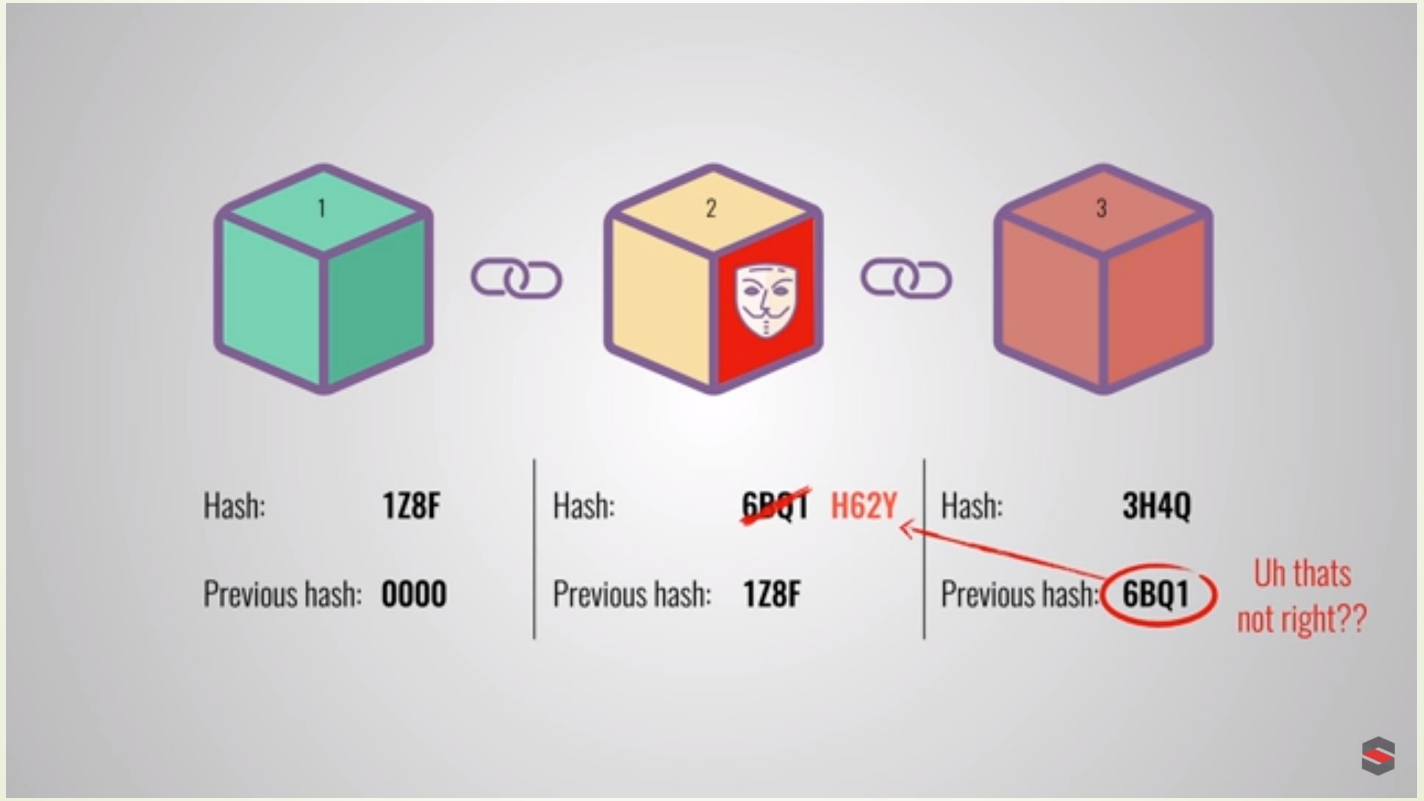

P2P network


New block!




Consensus!

Data Security:

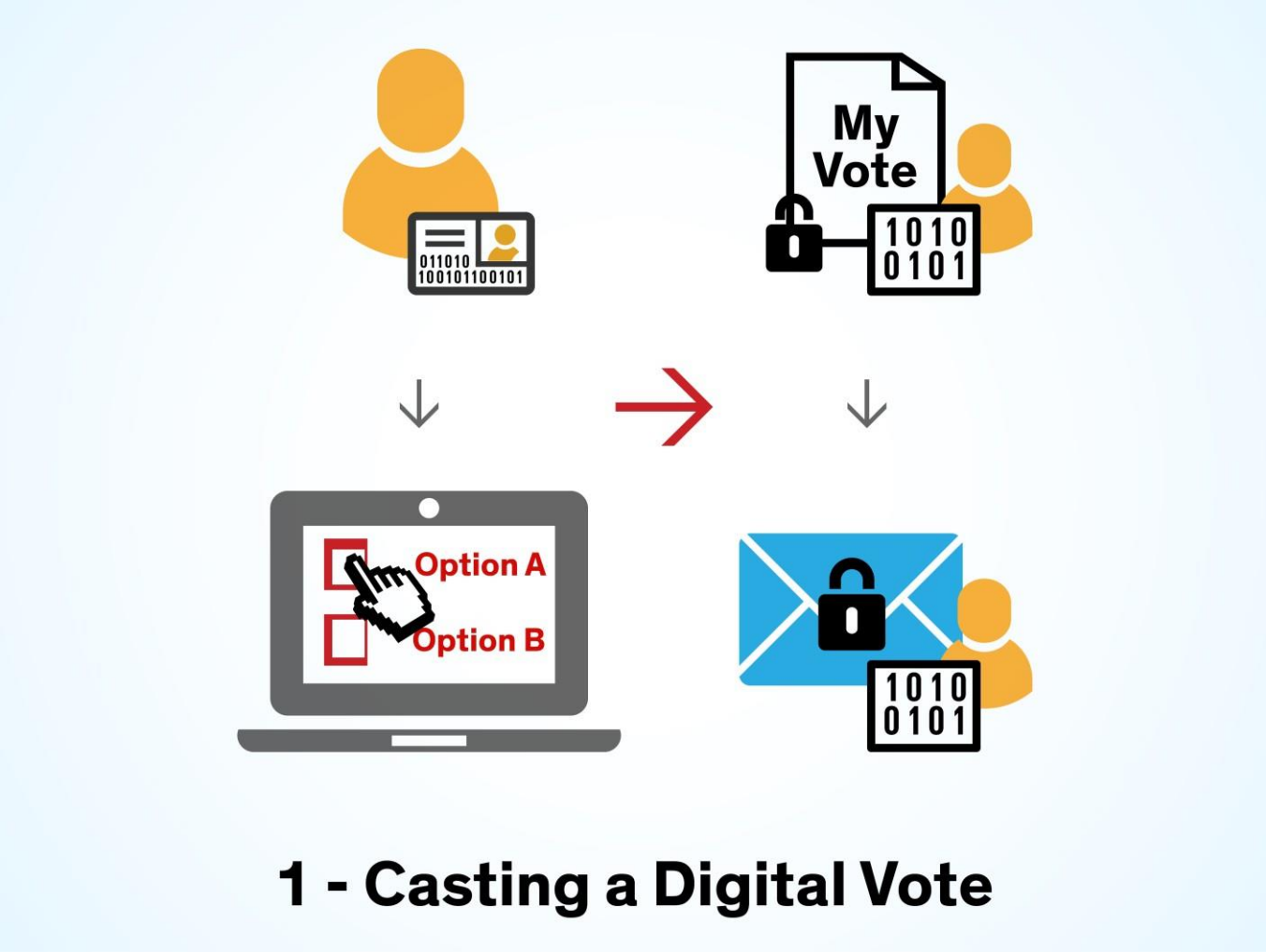


APPLICATIONS

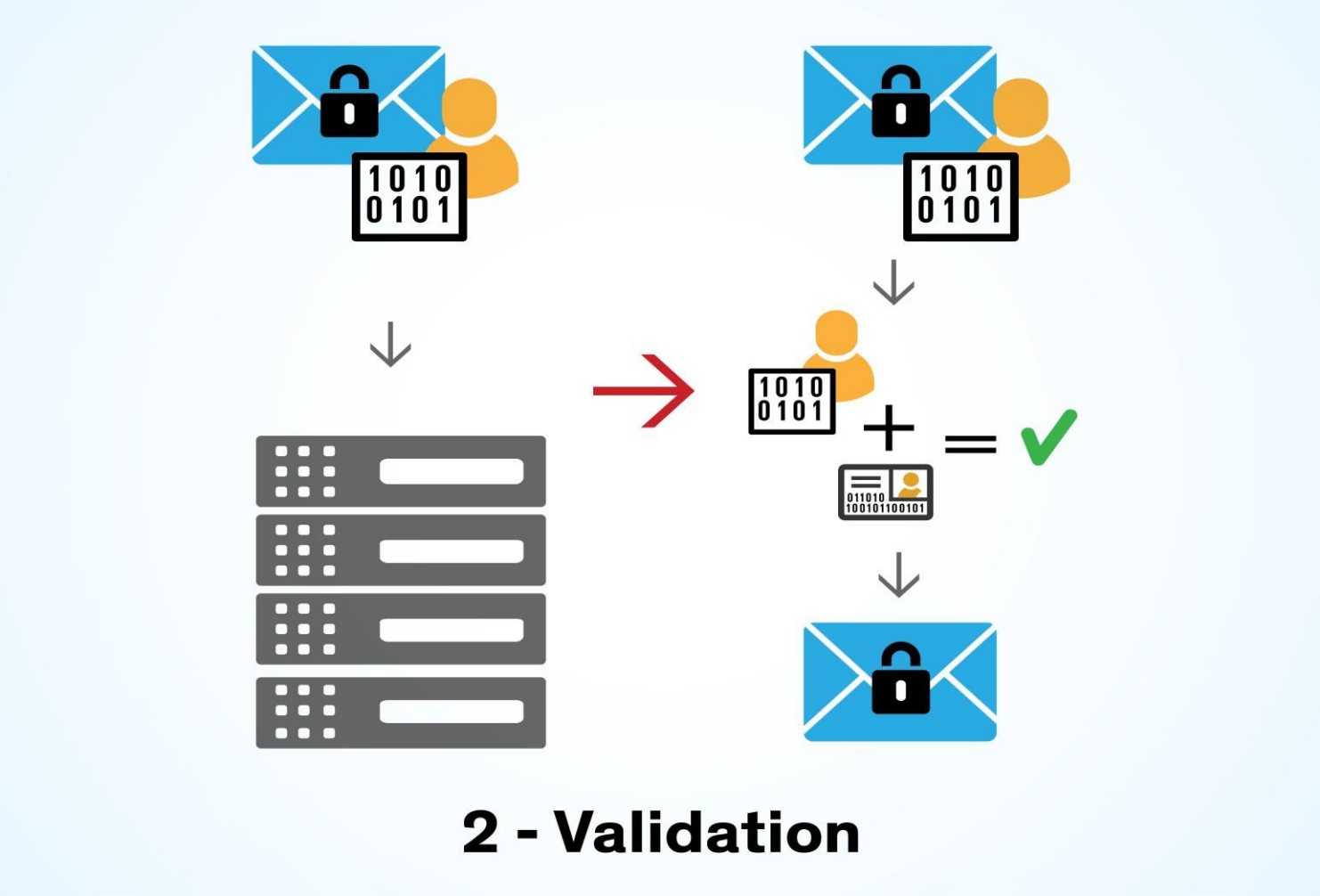
- **SMART CONTRACTS**
- **BITCOIN**
- **EDUCATION**
- **BANKING**
- **E VOTING**

Steps for Online Voting System Based on Blockchain

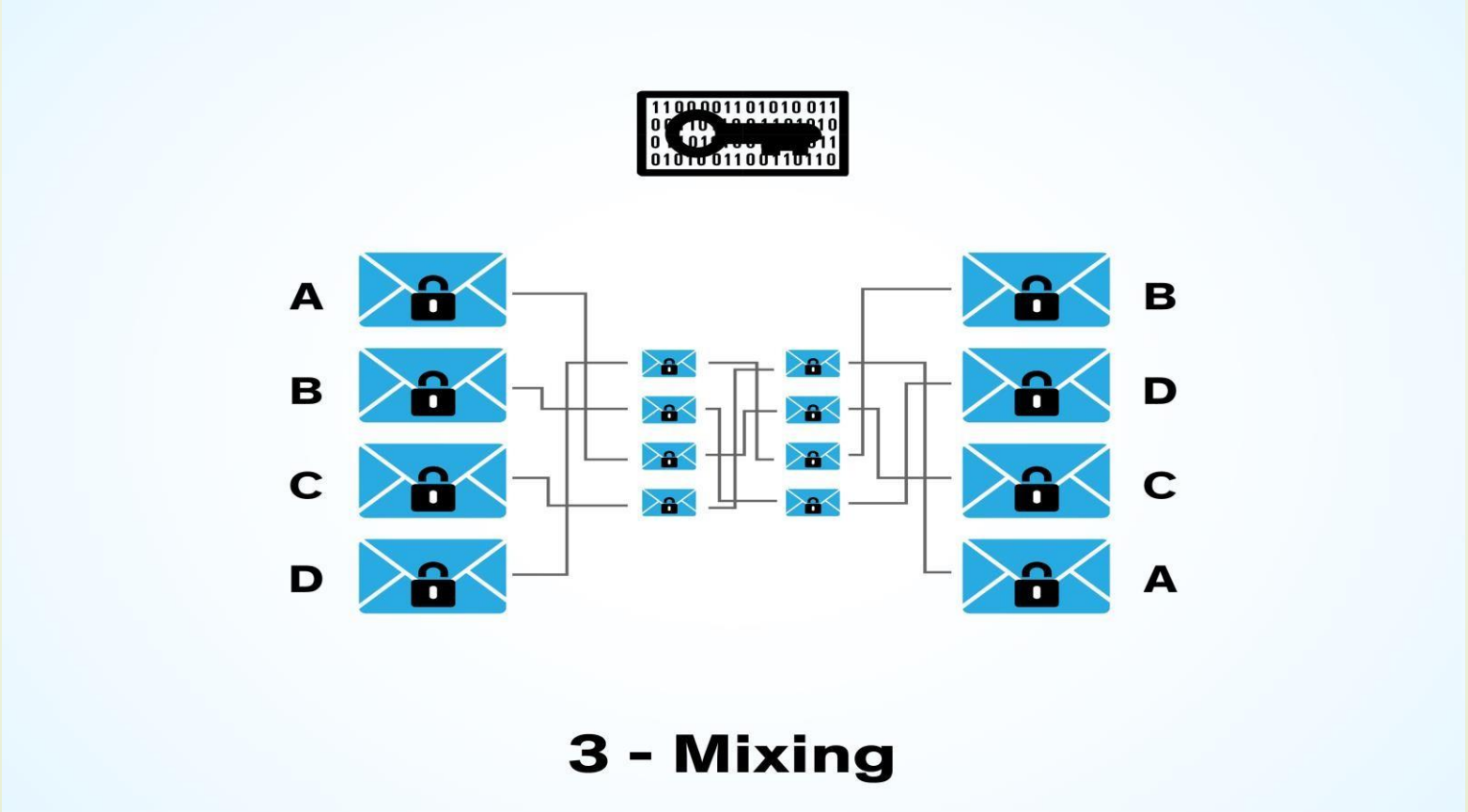
In this step user will send his vote using any of the available platforms and it will be sent for validation.



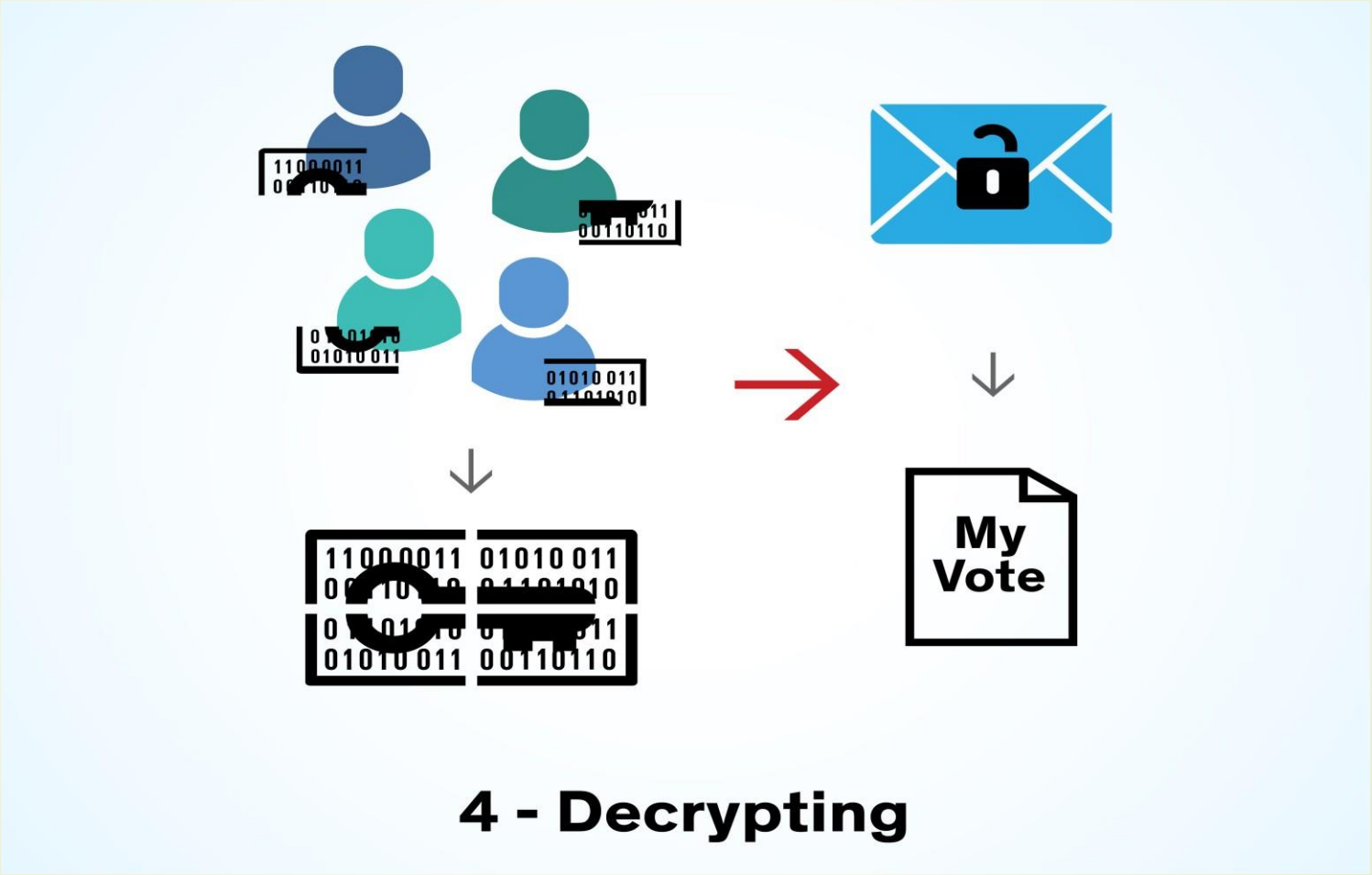
In Second step user's vote will be checked for unique identification



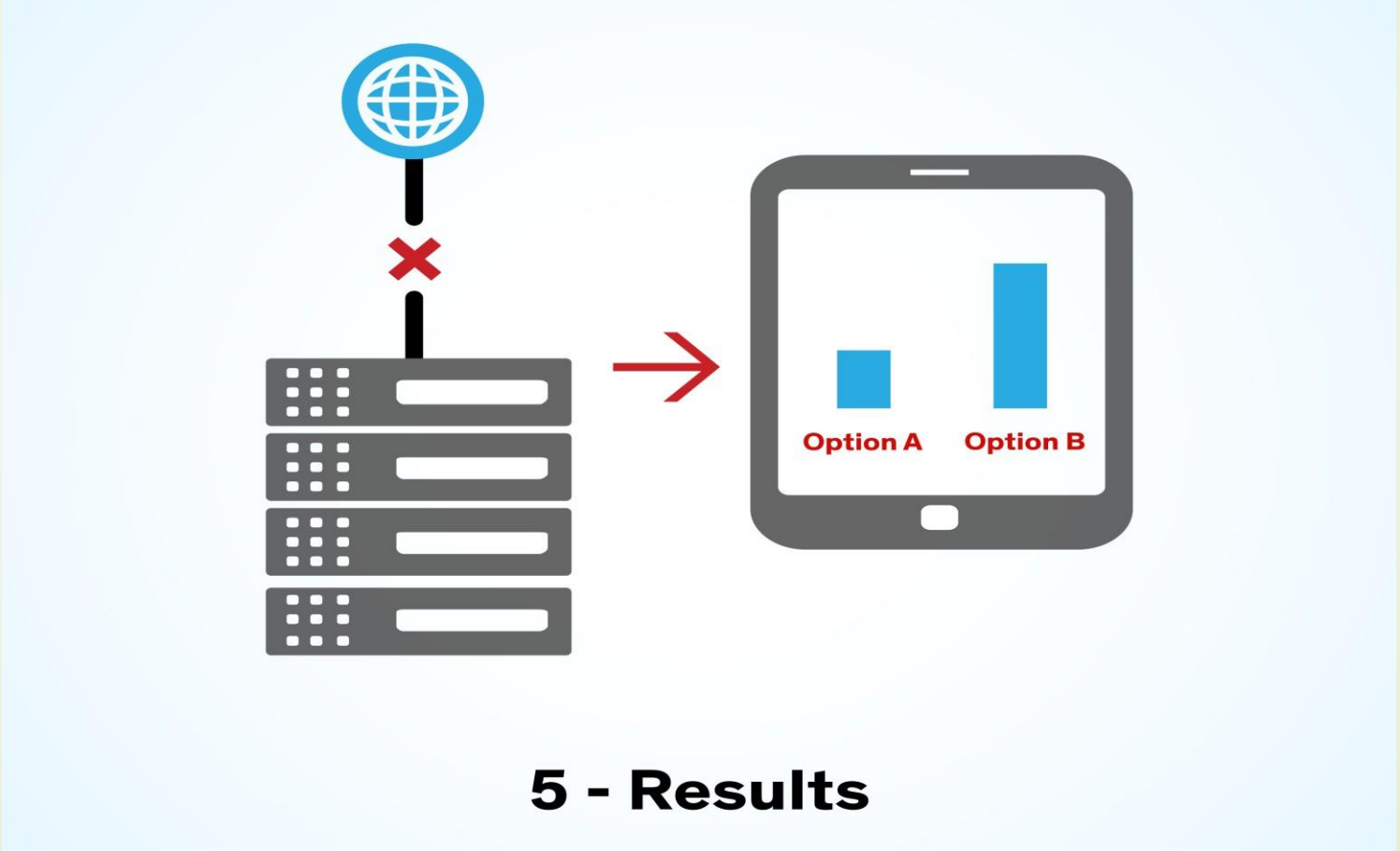
In third step after validation, votes from all users are collected and spread over a decentralized network.



Here , All the votes are decrypted and votes are counted for respective teams.

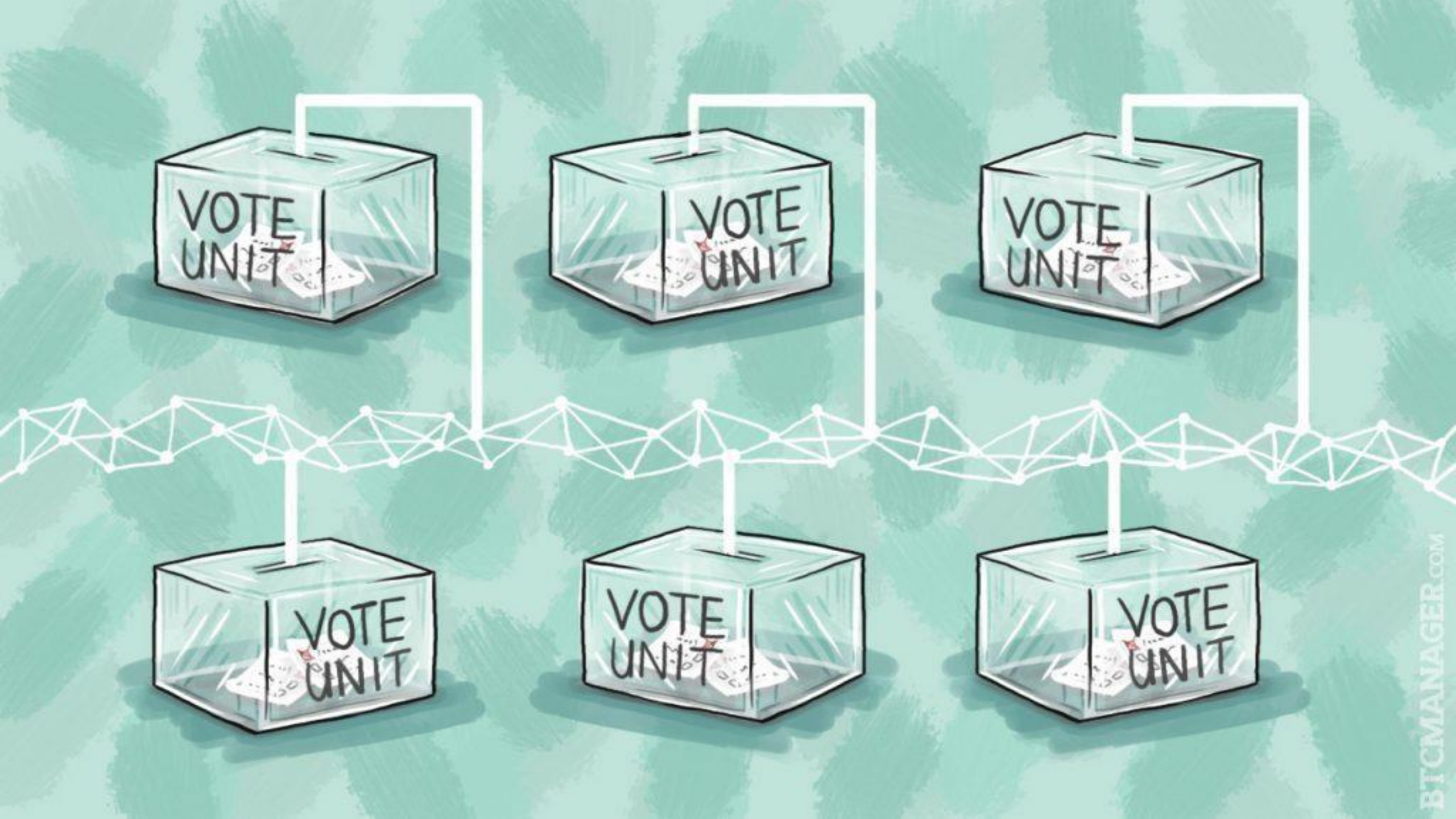


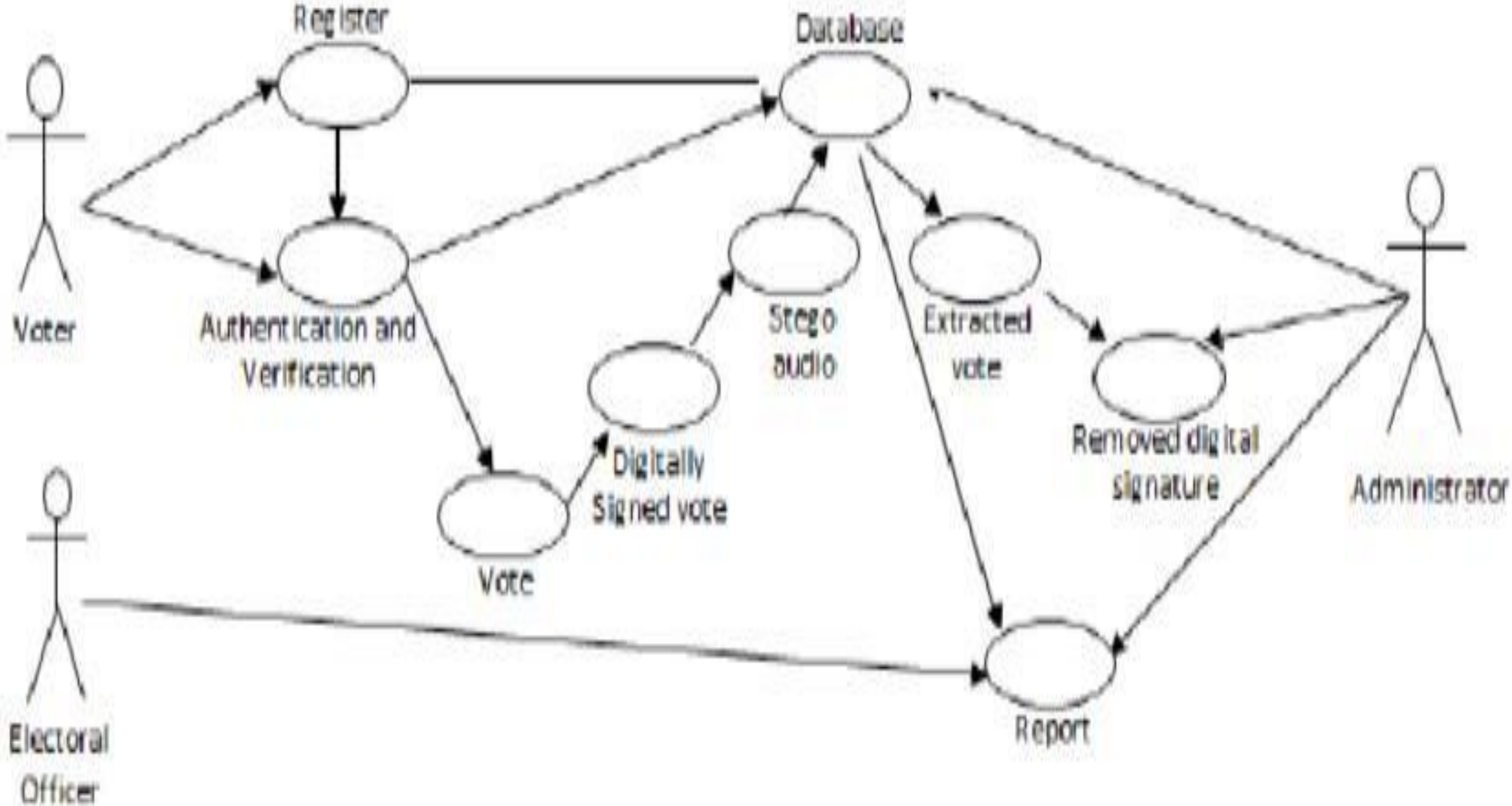
And finally, Results are again sent to users on the platforms.

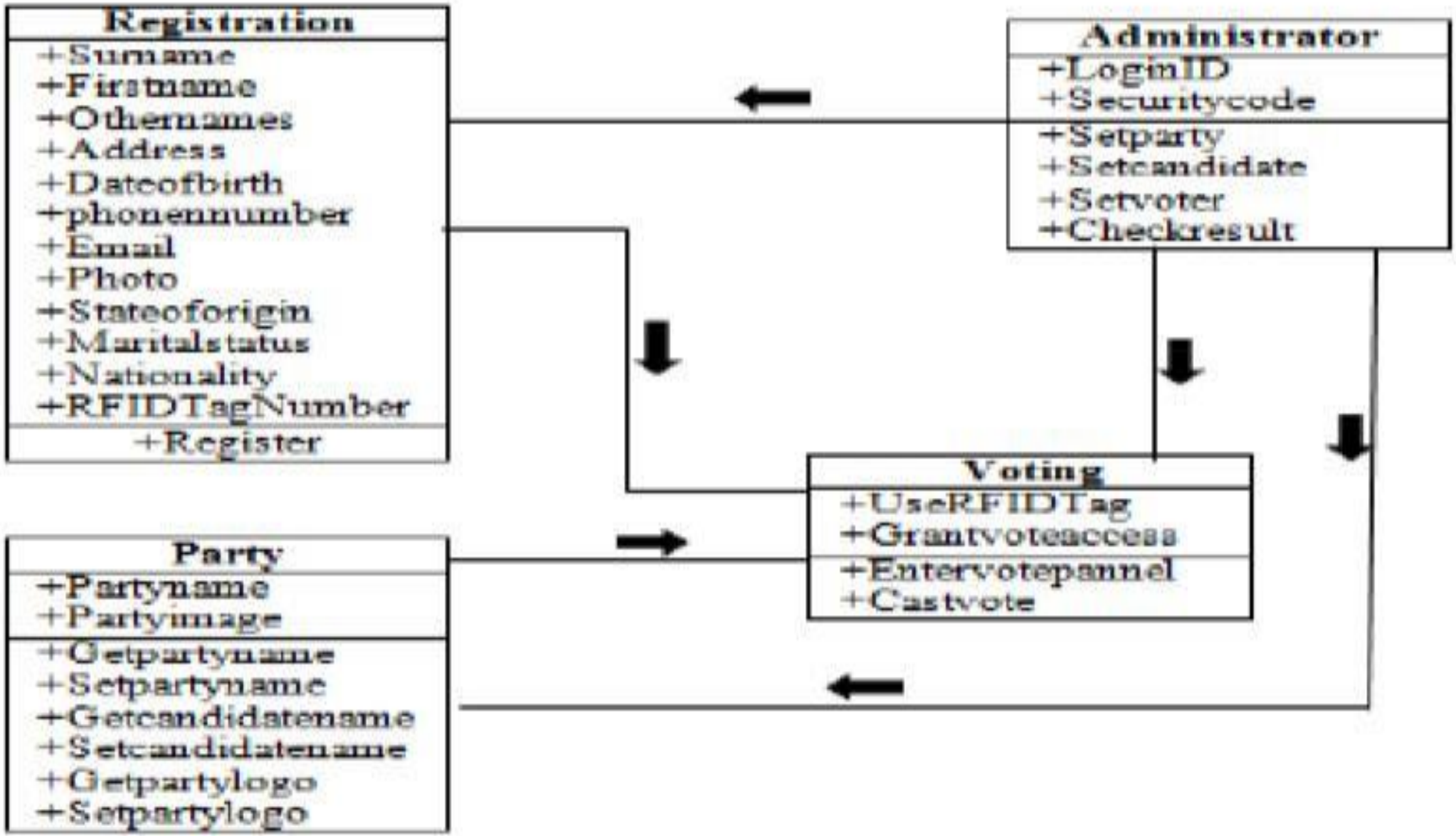


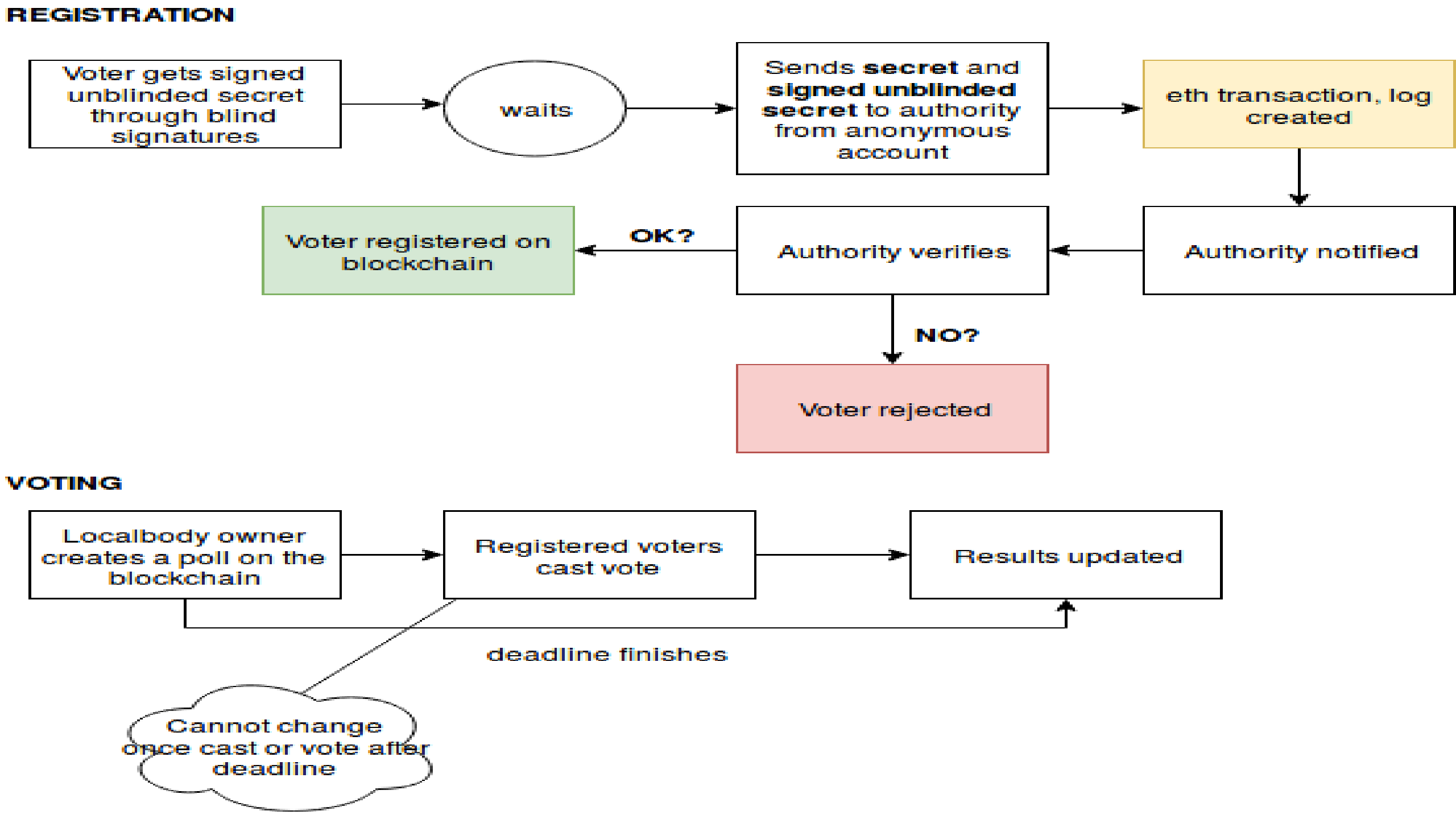
Buildings Blocks of a Distributed Internet

	IPFS	Decent	MaidSafe	Storj	SiaCoin	BlockCDN
Compensation Model	Data blocks bartered with reciprocated file sharing (Bitswap)	Per purchase (essentially per download) and per storage space-time	Payment per storage space, CPU, bandwidth, and online time	The platform currently pays storage providers monthly and bills storage renters monthly	Determined by a file contract between a storage renter and a provider	Per bandwidth use
Who Provides Payment?	File downloaders	Content consumers and content creators	Users and generated tokens	Storage renter (via Storj)	Storage renter	Content providers--those selling content to users
Blockchain Foundation	None, uses bitswap credit protocol	Independent DECENT blockchain	None: uses close groups consensus	Counterparty bitcoin blockchain	Independent Sia blockchain	BCDN tokens on Ethereum network
Target Use Cases and Scenarios	File hosting, versioning, web hosting, content distribution, etc	Media streaming	Encrypted cloud storage, web hosting, streaming	Encrypted cloud storage	Encrypted cloud storage	Optimize content delivery speed for centralized or decentralized content


VOTE UNIT
VOTE UNIT
VOTE UNIT
VOTE UNIT
VOTE UNIT
VOTE UNIT
BTCMANAGER.COM


Register
Database
Voter
Authentication and Verification
Stego audio
Extracted vote
Digitally Signed vote
Removed digital signature
Administrator
Vote
Electoral Officer
Report


Registration
+Surname
+Firstname
+Othernames
+Address
+Dateofbirth
+phonennumber
+Email
+Photo
+Stateoforigin
+Maritalstatus
+Nationality
+RFIDTagNumber
+Register
Administrator
+LoginID
+Securitycode
+Setparty
+Setcandidate
+Setvoter
+Checkresult
Voting
+UseRFIDTag
+Grantvoteaccess
+Entervotepannel
+Castvote
Party
+Partyname
+Partyimage
+Getpartyname
+Setpartyname
+Getcandidatename
+Setcandidatename
+Getpartylogo
+Setpartylogo


REGISTRATION
Voter gets signed unblinded secret through blind signatures
waits
Sends **secret** and **signed unblinded secret** to authority from anonymous account
eth transaction, log created
Authority notified
Authority verifies
OK?
Voter registered on blockchain
NO?
Voter rejected
VOTING
Localbody owner creates a poll on the blockchain
Registered voters cast vote
Results updated
deadline finishes
Cannot change once cast or vote after deadline

References:

- E-Voting with blockchain: An e-voting protocol with decentralization and voter privacy.
  Freya Sheer Hardwick,Raja Naeem, Konstantinos Markantonakis
  University of London,United Kingdom.

- www.followmyvote.com

  Etherium protocol