SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

COURSE NAME: 19CS622-Blockchain Technology

IIIYEAR /VI SEMESTER

Unit 2- CRYPTOCURRENCY

Topic 2 : BITCOIN NETWORKS

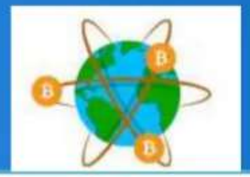
BITCOIN

Bitcoin is an digital currency introduced in 2008 by pseudonymous developer "Satoshi Nakamoto". That can be exchanged for goods and services

Digital: Bitcoins cannot be printed or physically made. They must be generated through computerized methods.

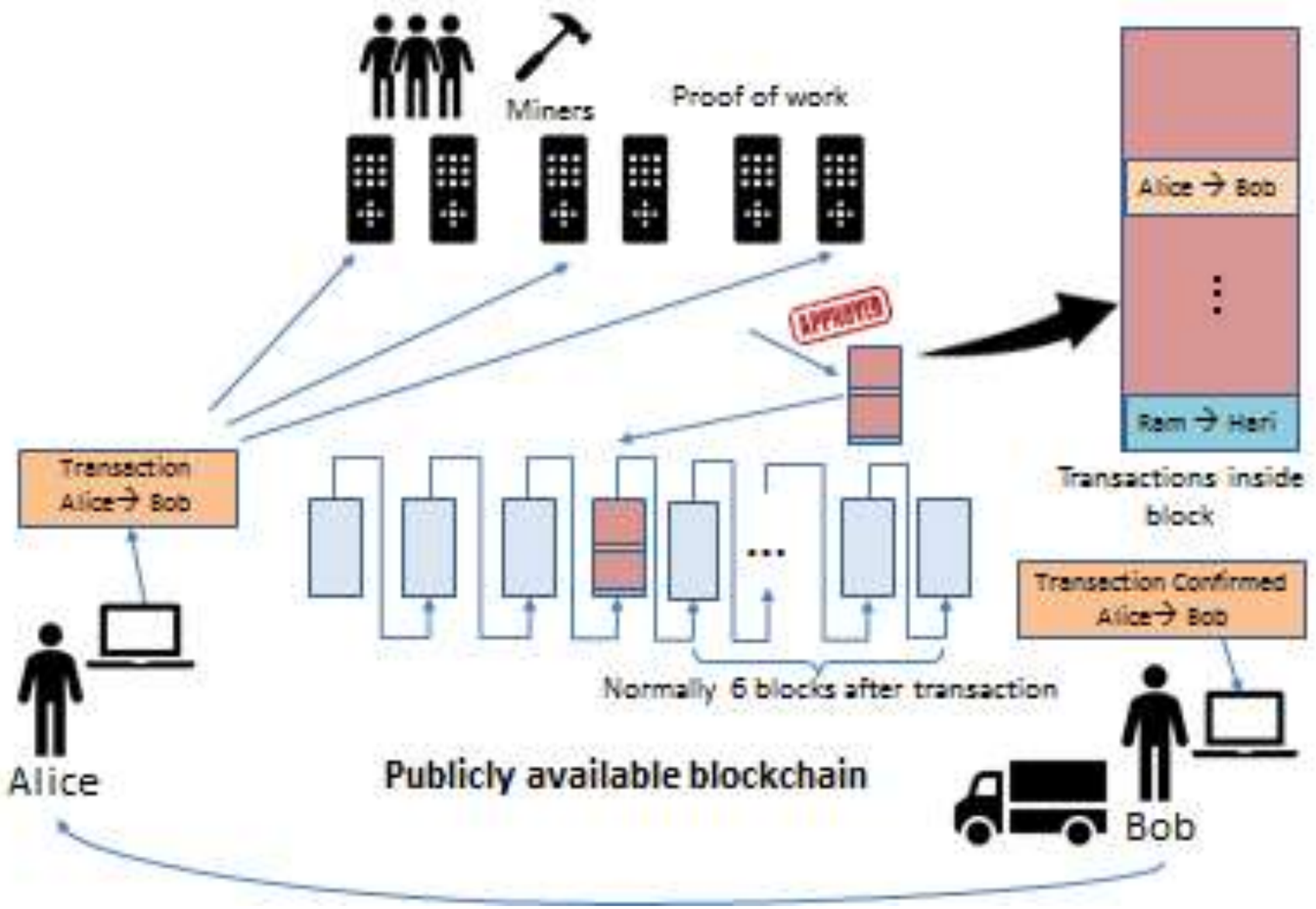
Decentralized: Bitcoins are not regulated by any government or banking institution.

Revolutionary: Transactions allow for anonymity and are almost instantaneous.



Global: Bitcoins are borderless currency and can be used anywhere.

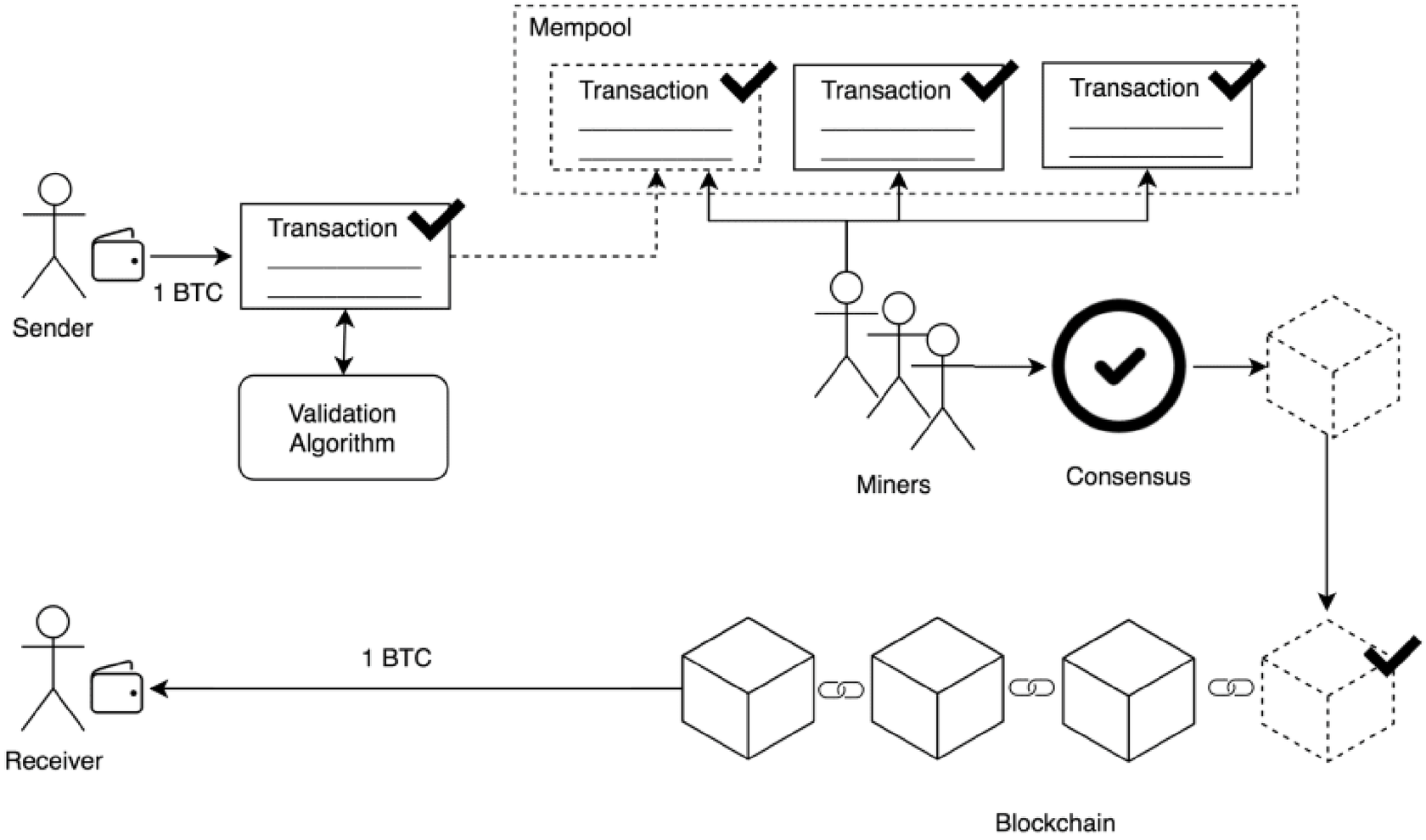
How Does Bitcoin Work?



Bitcoin Network

- **Each P2P node runs the following algorithm:**
  - New transactions are broadcast to all nodes.
  - Each node (miners) collects new transactions into a block.
  - Each node works on finding a proof-of-work for its block.
  - When a node finds a proof-of-work, it broadcasts the block to all nodes.
  - Nodes accept the block only if all transactions in it are valid (digital signature checking) and not already spent (check all the transactions).
  - Nodes express their acceptance by working on creating the next block in the chain, using the hash of the accepted block as the previous hash.

Bitcoin Life cycle



Bitcoin lifecycle

- Sender creates a transaction.
- Sender's bitcoin wallet validates the transaction.
- The transaction is sent to Mempool.
- Miners get the transaction from Mempool and start mining the block using a consensus algorithm.
- After the block is fully mined, it is added to the network.
- The chain validates the new block and every peer in the network will get the blockchain with the new block added.
- Finally, the Receiver get your BTCs

References

TEXT BOOKS

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3. https://101blockchains.com/blockchain-vs-database-the-difference/

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3. Arvind Narayanan, “Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction”, Princeton University Press, July 19, 2016.
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Thank You