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Blockchain Technology

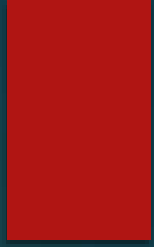
Part 1: What is blockchain?



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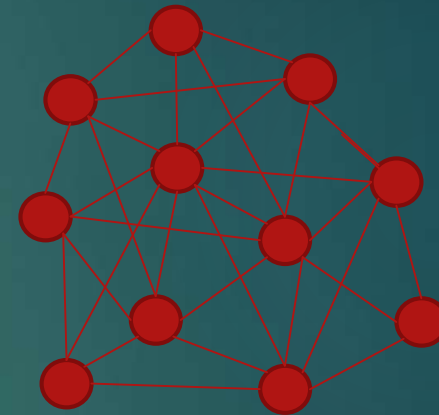
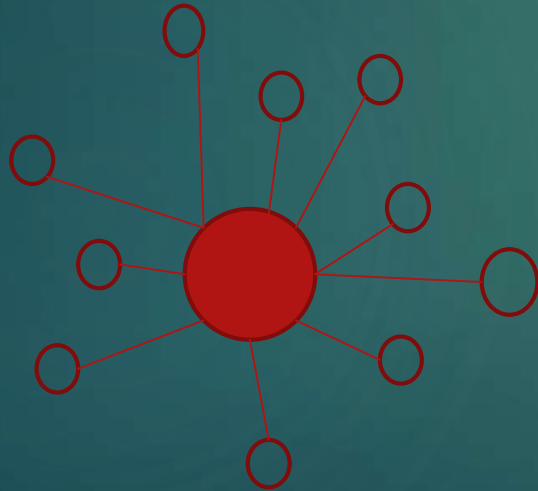
Blockchain Technology

Part 1: What is blockchain?



A. Distributed Ledger Technology (DLT):

A centralised network with processing and data storage at one node.



DLT where each node contains processing and data storage and is connected to every other node. No one node is more important than another. All transactions are updated via consensus throughout the network.

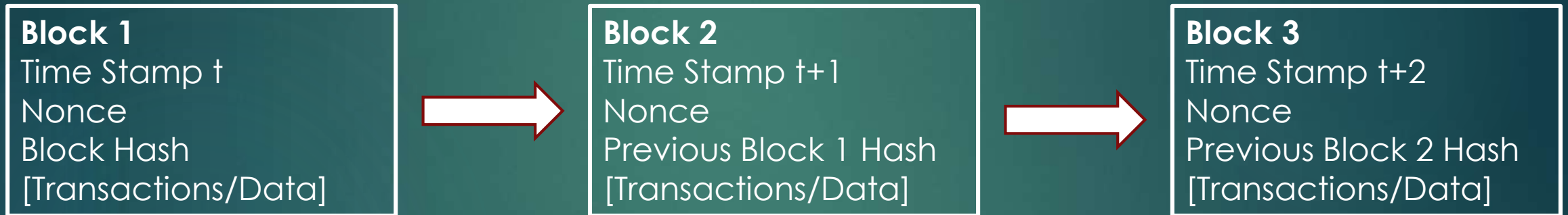


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B. Blocks and Cryptography:



Timestamp: time at which the block is created which is tamper proof

Nonce: Arbitrary random number used only once to verify authenticity of a particular block

Hash: An algorithm that creates a fixed sized output (hash) from an input of arbitrary size (the previous block). Uses cryptographic techniques to ensure that any unique block in the chain is built on the unique block before it.



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C. Advantages of Blockchain Technology:

- i) All the transactions in the system are held on a decentralised network so there is no one point of weakness in the system that is susceptible to hacking as is the case with a centralised server.
- ii) The use of cryptography to create a succession of blocks means that the system is tamper proof and verifiable. Any attempt at falsifying a block will be rejected by the nodes of the network.
- iii) Blockchain provides a secure system in which to store data as well as the transactions that affect the data. At its most basic it acts as a decentralised ledger showing which participants own how much of a unit of value such as a Token. This can be applied to anything that can be traded and whose ownership can be recorded. Blockchain thus provides a registry of title to property together with a system to trade that property.



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D. Disadvantages of Blockchain Technology:

- i) Processing time is quite slow, it currently takes about 7 seconds to update the network due to the large amount of computation power required
- ii) Still nascent technology which can be subject to changes in protocols leading to 'hard forks' in the chain
- iii) Not suited for full blown commercial applications in the public chain. Private companies have successfully implemented some aspects of blockchain technology for internal processes



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