# WHAT THE HECK?

– have a basic understanding of blockchain in 30 minutes.

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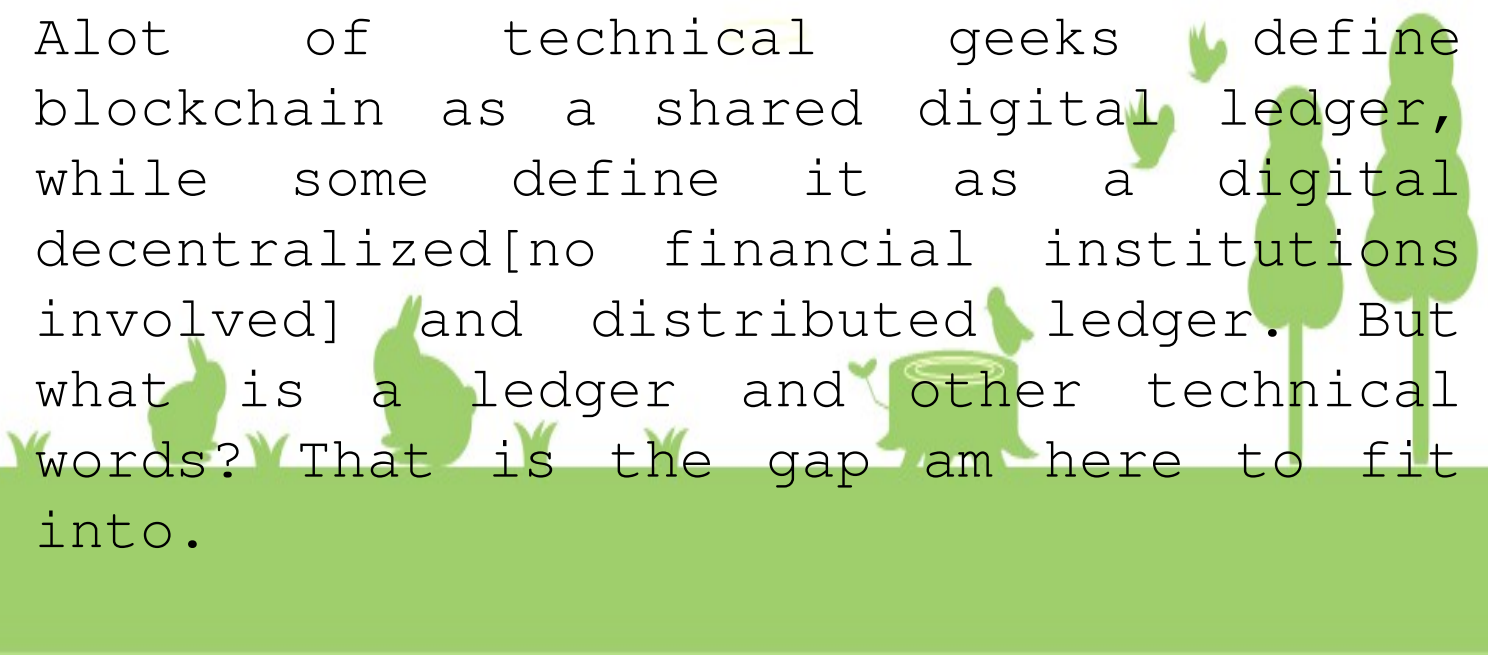
A lot of people think of blockchain as a place where digital currencies are gotten. To some, blockchain is bitcoin, ethereum or any cryptocurrency. The truth is bitcoin and any other cryptocurrency is not what blockchain is all about. Alot of people keep buying and selling cryptocurrency thinking its blockchain; in other words many are ignorant of what blockchain really is.

The OS you use is called an OS because it manages all resources and task on the hardware device you use, been it smartphones, PC, television etc. Take for instance windows operating system, it manages user request into the user interface and all task[I have no intension to use technical terms here]. Alot of technical geeks define blockchain as a shared digital ledger, while some define it as a digital decentralized[no financial institutions involved] and distributed ledger. But what is a ledger and other technical words? That is the gap am here to fit into.



SEE ledger as transaction and a block as a transaction with success[talk on that as we proceed].

**SO, WHAT THE HECK IS BLOCKCHAIN?**

Blockchain is just like the operating system you use on your mobile phones, PC, etc. It connects you to its network [when you have need of it]. TAKE NOTE OF "when you have need of it", that actually tells you that it's up to you to know what you want; just as you[a node] may be using MSoffice on windows operating system, another node[PC or hardware with windows installed on it] user may be playing need for speed and another node may be online. That shows different functions been served on thesame OS[NOTE: it's not on thesame PC but thesame OS]. That is to say every PC could have a copy of thesame OS with dissimilar. Now, relating that to blockchain, say you have a copy of Bitcoin or Ethereum peer-to-peer files, connecting the PC to bitcoin core client creates and activate a node[The nodes or peers are machines that maintain the transactions and records on the blockchain network].

Blockchain consist of layers which are:

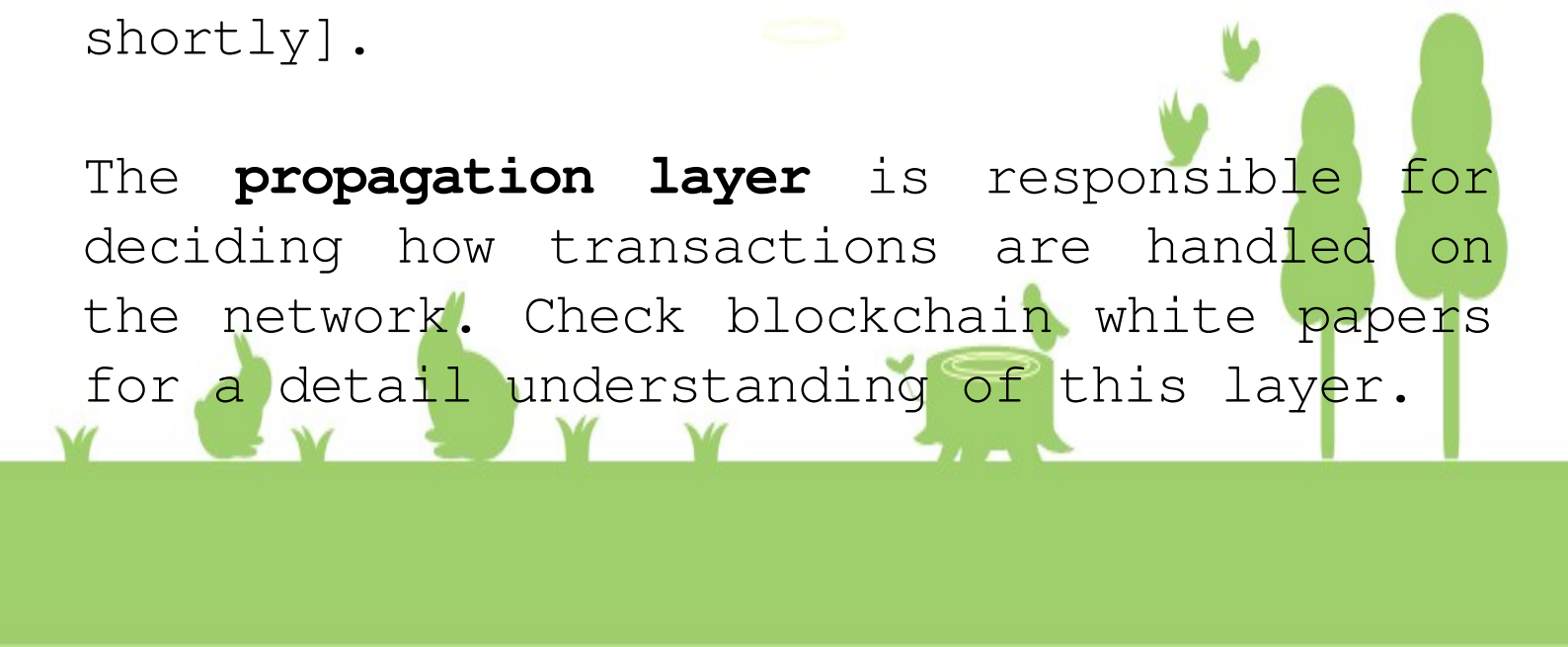
- Application layer.
- Execution layer.
- Semantic layer.
- Propagation layer.
- Consensus layer.

The **application layer** is where end users gain access and interacts with the network.

The **execution layer** is where the instructions ordered by the application layer are processed on all the nodes in a blockchain network.

The **semantic layer** takes care of how new blocks relate to previous blocks and provides the protocol for verifying the consensus rules[we will see consensus rules shortly].

The **propagation layer** is responsible for deciding how transactions are handled on the network. Check blockchain white papers for a detail understanding of this layer.



The **consensus layer** is the base layer for most of the blockchain systems. The sole aim of this layer is to get all the nodes to agree on one consistent state of work[transaction or ledger]. This is achieved by the known consensus rules which includes:

- Proof of work (PoW).
- Proof of stake (PoS).
- Delegated proof of stake (DPoS).

**PoW** – PoW is the first and most popular mechanism; PoW is achieved by having a network of miners and presenting the miners with a mathematical problem. When the miners solve the problem, they are rewarded with a cryptocurrency. The reward is the [proof of the work] checked[done], and that's where the name comes from. Now you can see that, this is all about hardwork, its here that miners are been spoken of. PoW have its own limitations. In other to be part of PoW, you need a hardware with a good computing power[hash rate], high electricity supply, fast internet connectivity among others.

**PoS** – PoS relies on how many coins a peer holds. The peer needs to stake the number of coins it wants to mine. Instead of hashing power, we have stake power, and there is no dependency on energy consumption because there is no mathamatical problems to solve and power consumption. A network fee is provided to peers instead of giving a reward for solving a mathematical problem as in PoW.

**DPoS** – DPoS is done in this manner:

- **Election:** this is simply to elect group of block producers. When electing a group of block producers, there are restrictions as to the number[about 21] of block producers instead of unlimited as with PoW.
- **Scheduling production:** this is simply assigning block producers time to produce a block on the blochchain network. Each one of the block producers takes turns to produce a block every 3 seconds.

Therefore by creating a node, the network[blockchain] is been managed by you and I. Each cryptocurrency has its own blockchain and nodes.

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