区块链作业五

SA20225085 朱志儒

1. What may be the relationship between Ethereum and Bitcoin?

Though Ethereum and Bitcoin have similar features, both are billed quite differently. Ethereum is a smart contract platform, while Bitcoin is a decentralized asset. Ethereum is account-based instead of UTXO-based. Ethereum has a Turing complete scripting language that is significantly more powerful than Bitcoin Script, which enables smart contracts. The Ether asset is, in some ways, a side effect of having an incentive-aligned smart contract platform. Ethereum plans to move to proof-of-stake in the near future.

1. What’re the usage of Merkle tree in Ethereum?

Every block header in Ethereum contains not just one Merkle tree, but three trees for three kinds of objects: transactions, receipts, state. This allows for a highly advanced light client protocol that allows light clients to easily make and get verifiable answers to many kinds of queries.

1. How to compare Ethereum vs Hyperledger?

Ethereum is a decentralized platform that runs smart contracts.

Hyperledger is an open sourced community of communities to benefit an ecosystem of Hyperledger based solution providers and users focused on blockchain related use cases that will work across a variety of industrial sectors.

We will compare Ethereum and Hyperledger in the following six areas:

1. Network Type

Ethereum is a public network.

Hyperledger is a consortium network.

1. Cryptocurrency

Ethereum uses ether.

Hyperledger have no cryptocurrency, but it can be implemented if required.

1. Consensus Mechanism

Ethereum uses proof of work.

Hyperledger uses practical Byzantine fault tolerance.

1. Smart Contract

Smart contract of Ethereum is solidity.

Smart contract of Hyperledger is chaincode.

1. Language

Ethereum uses completion of Golang and Python.

Hyperledger uses completion of Golang and Java.

1. Maintenance

Ethereum is maintained by Ethereum Developer Community.

Hyperledger is maintained by Linux Foundation.

1. How to distinguish Blockchain by platforms and software providers?

Blockchain as a service software products offer businesses a hosted blockchain platform with which they can build applications. Ethereum is a platform and a programming language that makes it possible for any developer to build and publish next-generation decentralized applications.

1. Have you practiced the Ethereum? What’re your experience and comments?

I practice the Ethereum on Ethereum Studio(https://studio.ethereum.org/). I think Ethereum is open access to digital money and data-friendly services. It’s a community-built technology behind the cryptocurrency Ether and thousands of applications I can use today.