SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

COURSE NAME: 19CS622-Blockchain Technology

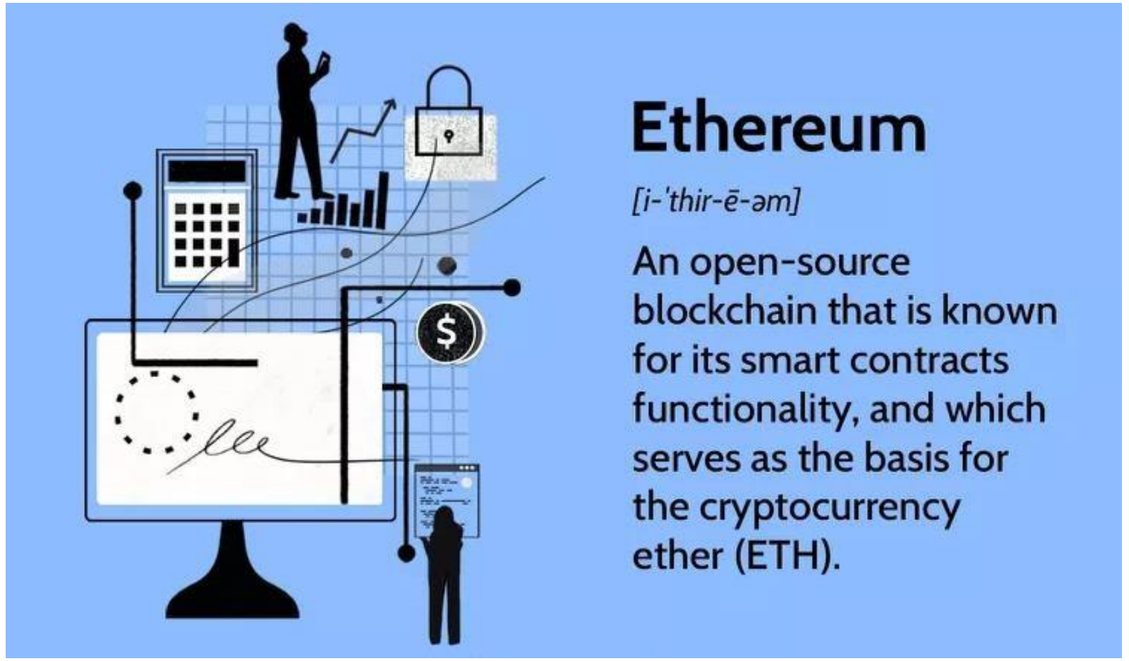
III YEAR /VI SEMESTER

Unit III- ETHEREUM

Topic : ETHEREUM ECOSYSTEM

Definition

- Ethereum is a blockchain-based development platform known for its cryptocurrency, ether (ETH).
- The blockchain technology that powers Ethereum enables secure digital ledgers to be publicly created and maintained.
- Ethereum uses a proof-of-stake transaction validation mechanism.
- Ethereum is the foundation for many emerging technological advances based on blockchain.



FEATURES OF ETHEREUM

- It is censor-resistant, immutable, secure, transparent, and decentralized;
- Its ledger of transactions is public while the transacting parties are anonymous.

FEATURES OF ETHEREUM - ETHER

Ether (ETH):

- Ethereum has gained popularity from its application in cryptocurrency using ether. Investors and all, can buy, store and sell value using Ethereum’s native coin.
- Ether is a peer-to-peer digital currency just like bitcoin.
- Computational resources, gas fees, and other peer-to-peer payments are paid on the Ethereum network using ether.

FEATURES OF ETHEREUM - Smart contracts

Smart contracts:

- Smart contract is also one of the major features of Ethereum.
- Ethereum network allows the development and deployment of smart contracts.
- This feature extends the application of Ethereum beyond cryptocurrency (buying and selling ETH).
- A smart contract is to DAPPs as API is to traditional apps.
- The smart contract functionality of the Ethereum network fetches data from the network (the back-end) and sends it to the front-end of the applications.

FEATURES OF ETHEREUM - (DAPPs)

Decentralized applications and finance (DAPPs)

- Defi): Ethereum is also known for building and deploying DAPPs and Defi (decentralized finance).
- DAPPs are open-source, decentralized, and use ether (or other blockchain-based tokens) to run their applications.
- Some examples of DAPPs include status, storj, and many more.

FEATURES OF ETHEREUM - (DAOs)

Decentralized autonomous organizations (DAO):

- DAO is another feature of Ethereum. These are organizations that exist on the blockchain network and operate in a decentralized and democratic manner.
- Decision-making in DAO is based on the protocols of the smart contract.

FEATURES OF ETHEREUM - EVM

Ethereum Virtual Machine:

- A core feature of the Ethereum ecosystem is the Ethereum Virtual Machine (EVM).
- It is a runtime compiler that executes the terms and conditions of a smart contract.
- Once the EVM deploys a smart contract, a copy of the contract is sent across to every participant of that network.

FEATURES OF ETHEREUM - EVM

Proof of work:

- This feature is at the core of the ecosystem, as it manages all transactions and secures the ecosystem.
- Proof of work is the consensus protocol used in the Ethereum ecosystem.
- It involves verifying the required amount of computational power used by the network participants (miners) in calculating valid alphanumeric codes, known as a hash.

Assessment 1

- *The smallest unit or denomination of ether is a wei.*
- *There are seven total denominations: Wei, Kwei, Mwei, Gwei, micro-ether (Twei), milli-ether (Pwei), and ether.*

References

TEXT BOOKS

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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