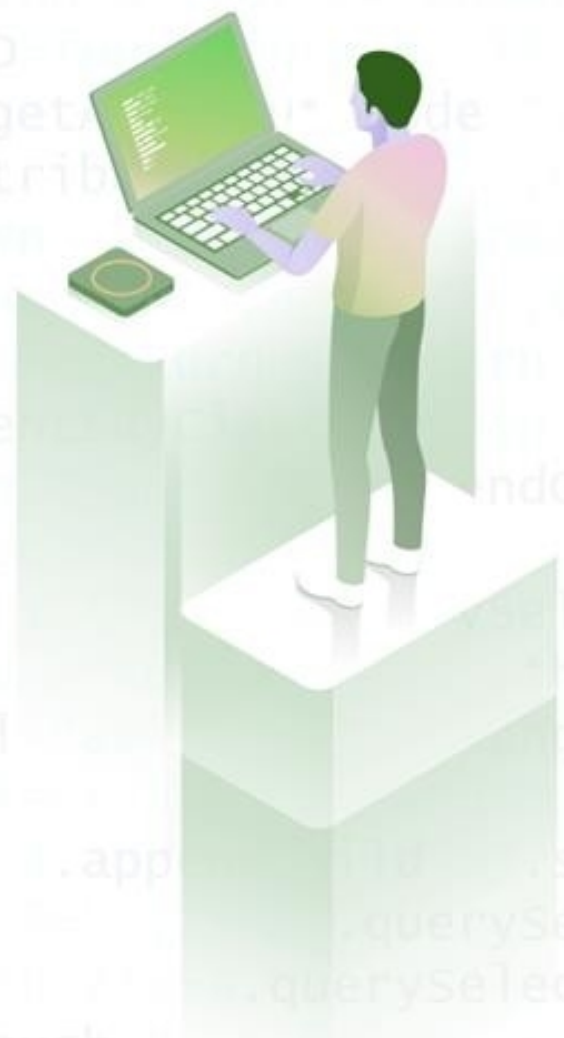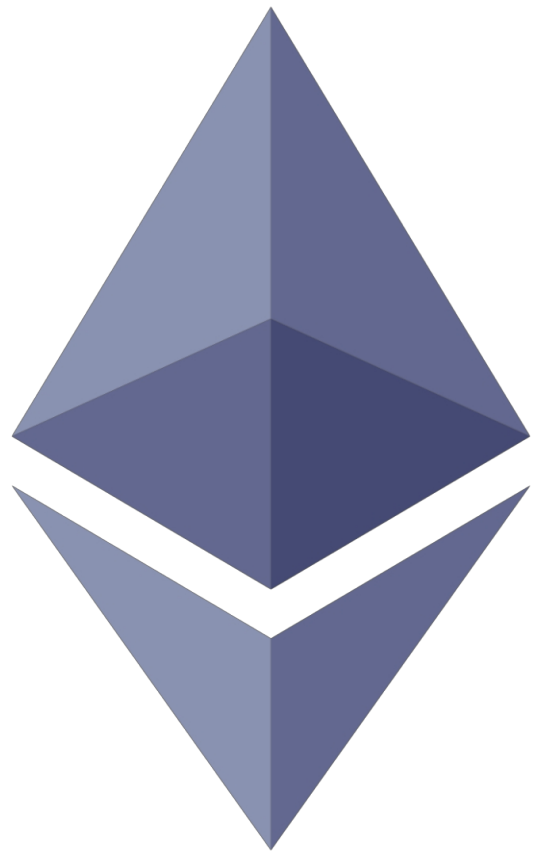TECHNOLOGY

Ethereum Blockchain

Introduction to Ethereum

Ethereum is a decentralized platform that runs smart contracts and has its own cryptocurrency known as Ether.

Features of Ethereum

Smart Contracts

Automated programs that execute upon satisfying certain conditions

Community

Ethereum has extensive developer community support

Currency

They have Ethers based on ERC-20 tokens

Security

Ethash and smart contracts are used to enhance security

Fast Transactions

Mining speeds are very high and transactions are completed in 10-12 seconds

Ethereum Ecosystem

The Ethereum ecosystem consists of technologies that help enable decentralized browser and applications such as storage, dynamic communication, and distributed computation.

DApp	DApp	DApp

Decentralized Browser

Storage

Communication

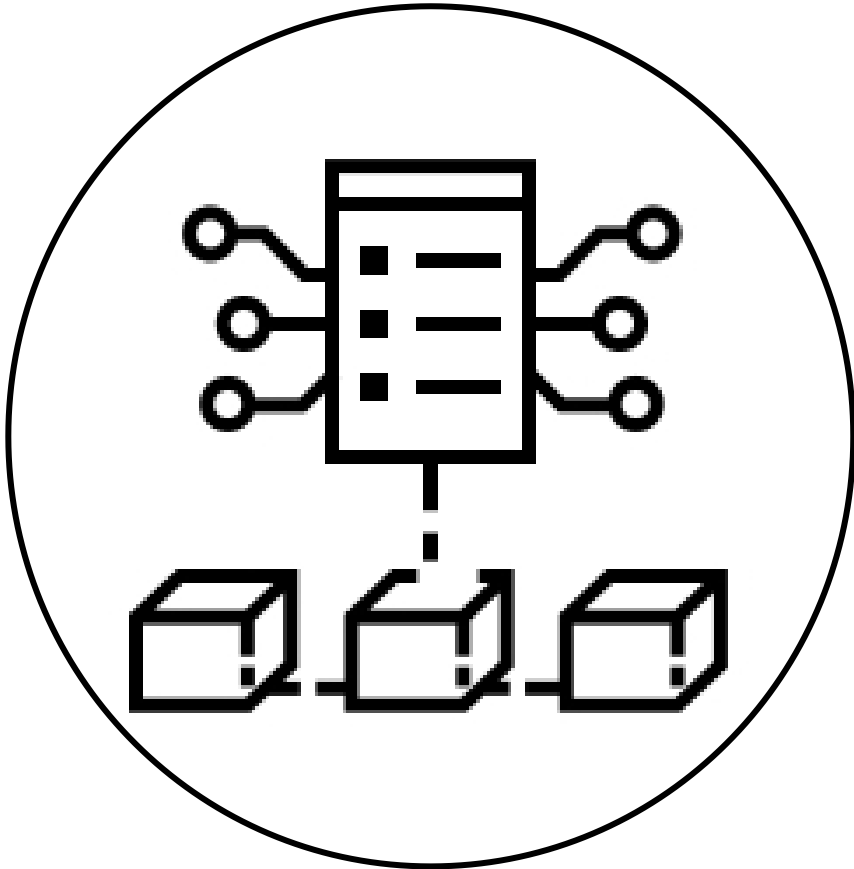**Computation**

Ethereum Blockchain
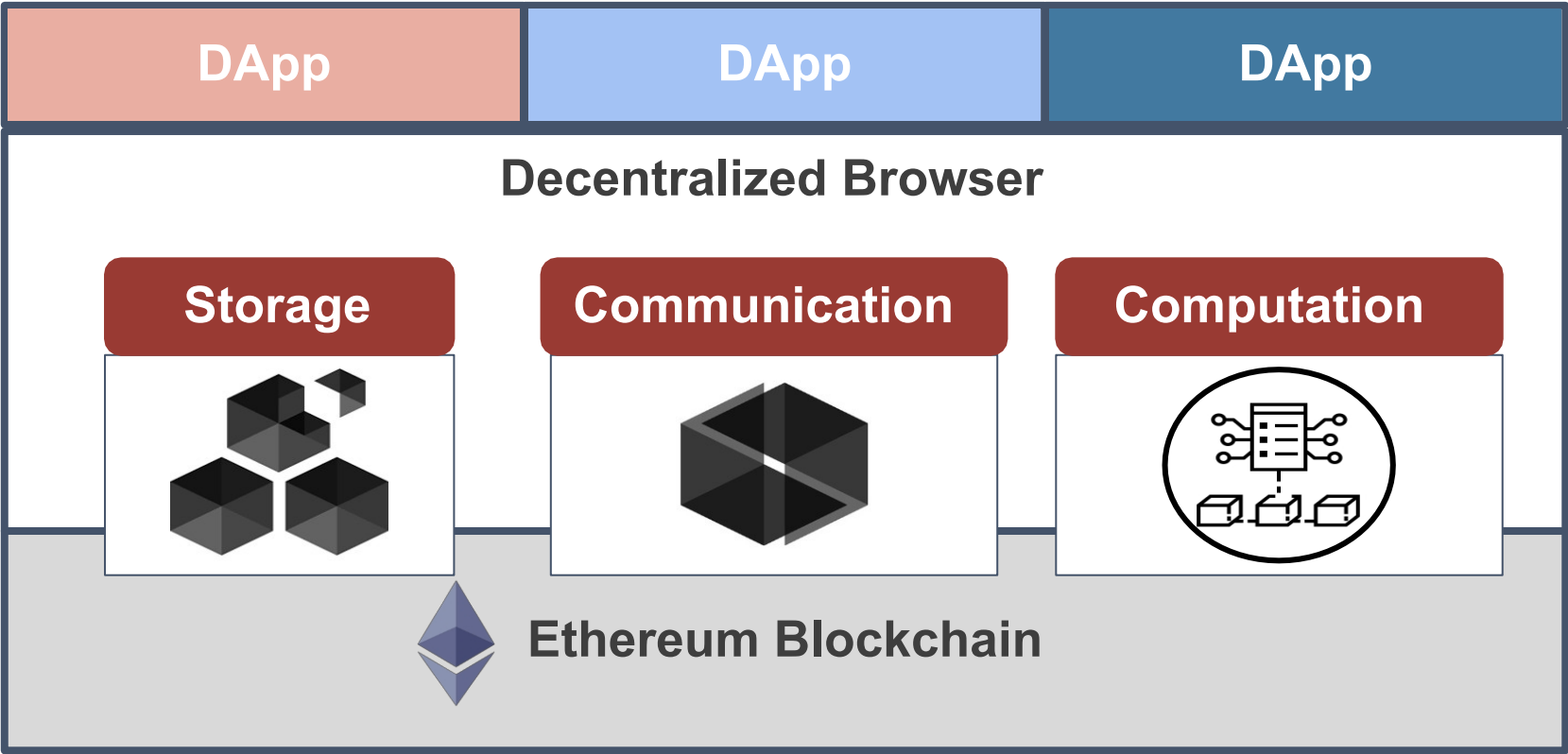
Swarm

- Swarm is a censorship resistant, permissionless, and decentralized file share and storage platform.

- It stores Ethereum records to distribute blockchain data as well as Dapp codes throughout the network.

- It runs on a peer-to-peer basis that allows to transfer resources/data among the nodes.

Smart Contract

- Smart contracts are computer programs that are stored on Ethereum's Blockchain.

- Contracts can be used to build currencies and store financial assets.

- They are used to design voting systems, decentralized organizations, data feeds, title registries, and thousands of other applications.

Smart Contract Languages

Contracts are compiled into bytecode on the Ethereum Virtual Machine and deployed to Ethereum Blockchain for execution.

Various languages may be used to write these contracts, but the below mentioned ones are the most popular:
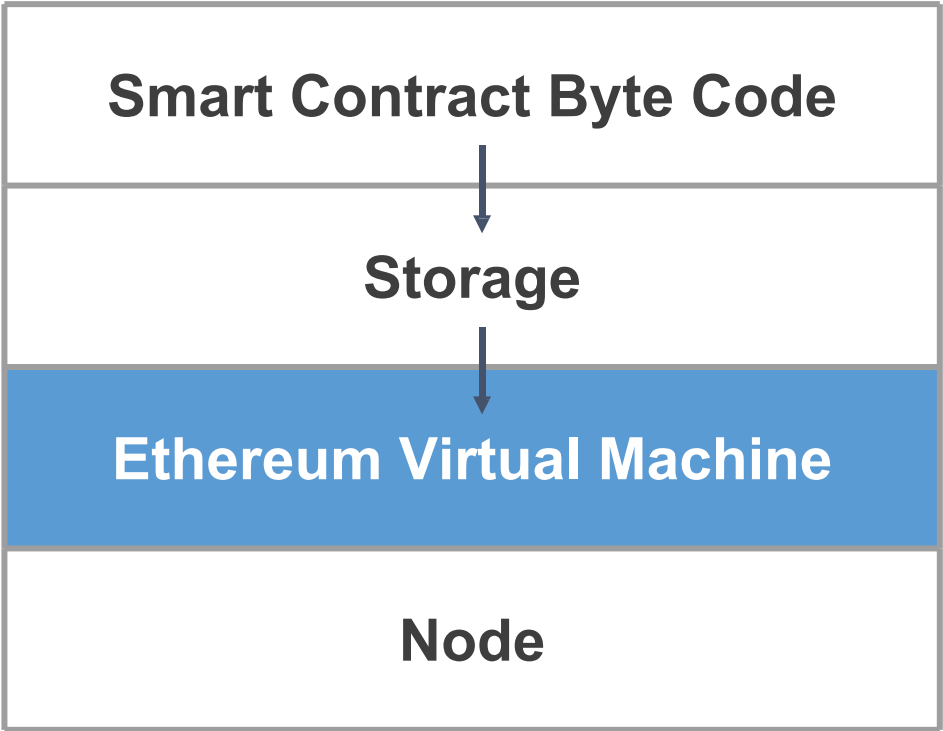
Solidity

Juli

Vyper

Ethereum Virtual Machine (EVM)

Smart Contract Byte Code
Storage
Ethereum Virtual Machine
Node

- Ethereum Virtual Machine (EVM) is the runtime environment for the smart contracts in Ethereum.

- Developers can create applications that run on the EVM using user-friendly programming languages such as Solidity.

- The EVM is sandboxed and completely isolated to protect the host computers from the threat of viruses or malicious intrusion attempts.

Ether
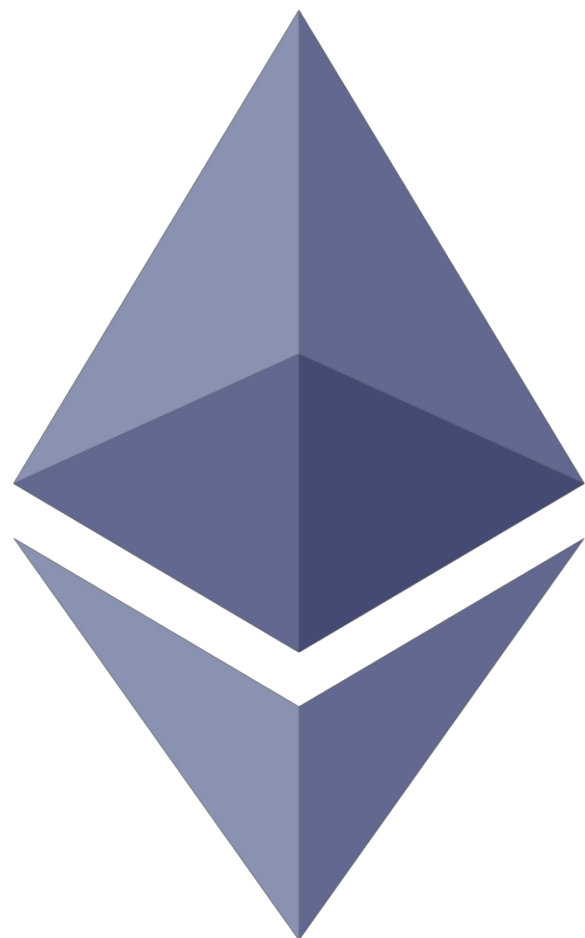
Ether is the primary digital asset or cryptocurrency of the Ethereum platform.

It is a transactional token that facilitates operation on Ethereum.

All Gas prices are paid in Ethers.

Bitcoin Vs Ether

Bitcoin	Ether
Uses secure hash algorithm (SHA-256)	Uses Ethash algorithm
Used as currency for purchasing goods and services	Used as a currency and for making decentralized apps
Digital currency to compete against fiat currencies and gold	Mainly used for smart contracts
Transaction speed is slower	Transaction speed is much faster
Very high mining price	Lower Gas prices comparatively