Ethereum

It is an open source platform with the main goal of allowing programmers to write and execute Solidity code across the EVM under certain conditions. Ethereum code is public and anyone can read it. Hence the code must be well written and tested. Ethereum includes state information rather than just transaction information which is useful for writing applications. The cryptocurrency used in Ethereum is called Ether. Hence, Ethereum focuses on providing a complete programming environment.

Ethereum Philosophy:

- Simplicity
- Universality
- Modularity
- Agility

Smart Contracts

It is a blockchain class whose public functions can be called externally and allows storing data in blockchain. Smart contracts have their own address in the blockchain similar to wallets. Smart contracts are grouping of functions and state variables which is located in the blockchain. It allows storing data and interacting with blockchain. Write operations in Ethereum costs gas and even money in some cases. Smart contract allows distributed functionality for automation of contract execution and provide back end power to DApps.

Ethereum Virtual Machine (EVM)

EVM processes smart contracts. EVM is co-located with the Ethereum blockchain and is its true power. Data is stored in the Ethereum block chain whereas processing smart contract and other programming functionality is handled by EVM. EVM has some non-persistent memory during execution of functions for variables. Some of the popular EVM are go-ethereum, Parity, Pyethereum, Ethereum J, Py-EVM, etc. These EVM run in different programming languages such as Java, Python, Rust, etc.