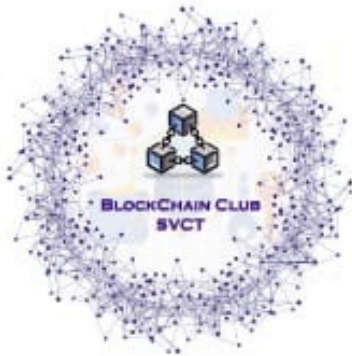




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## INTRODUCTION TO ETHEREUM

Ethereum was invented by Vitalik Buterin, with development beginning in late 2013 and the project being publicly announced in early 2014. The Ethereum blockchain officially launched on July 30, 2015. It's a decentralized platform that enables smart contracts and decentralized applications to be built and run without any downtime, fraud, or interference from a third party.



## ETHEREUM

ETHEREUM IS A DECENTRALIZED BLOCKCHAIN PLATFORM THAT ENABLES THE CREATION OF SMART CONTRACTS AND DECENTRALIZED APPLICATIONS USING ITS NATIVE CRYPTOCURRENCY, ETHER (ETH), FOR TRANSACTIONS AND OPERATIONS ON THE NETWORK.

# Surprising facts about **ETHEREUM**

- 1 .....  
Ethereum Was Funded  
Through Crowdfunding
- 2 .....  
Ether is the crypto unit, not Ethereum
- 3 .....  
Ethereum is a cryptocurrency platform  
and programming language
- 4 .....  
Ethereum platform is an open-source
- 5 .....  
Ethereum is not bound by limits like Bitcoins



# How Do Smart Contracts Work?



Registered



Automated  
Settlement of  
Contracts



No Third  
Party Need



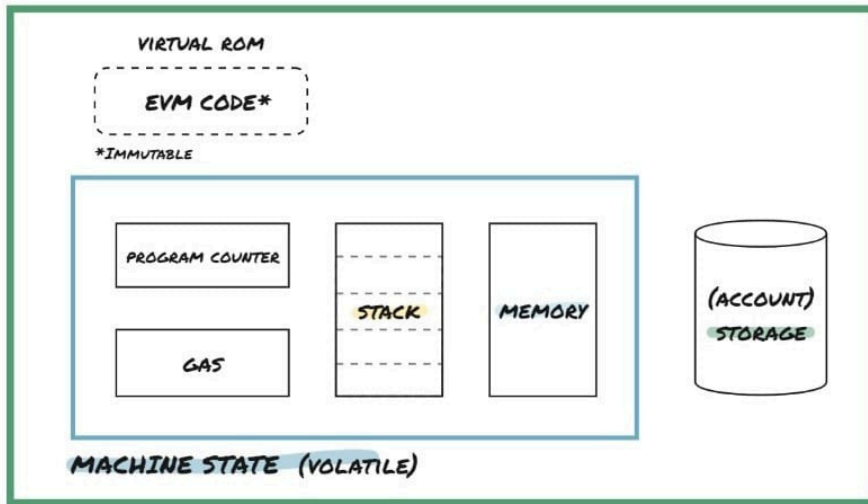
# METHODS FOR REDUCING ETHEREUM GAS FEES



## ETHEREUM VIRTUAL MACHINE



- THE ETHEREUM VIRTUAL MACHINE (EVM) IS THE CORE COMPONENT OF THE ETHEREUM BLOCKCHAIN, DESIGNED TO EXECUTE SMART CONTRACTS AND MANAGE TRANSACTIONS. IT CONVERTS SMART CONTRACTS WRITTEN IN HIGH-LEVEL LANGUAGES LIKE SOLIDITY INTO BYTECODE THAT IT CAN UNDERSTAND AND EXECUTE. THE EVM MAINTAINS THE STATE OF THE BLOCKCHAIN AND ENSURES CONSISTENT EXECUTION ACROSS ALL NODES, ALLOWING DECENTRALIZED APPLICATIONS (DAPPS) TO RUN SECURELY AND PREDICTABLY. IT PLAYS A CRUCIAL ROLE IN ENABLING THE FUNCTIONALITY AND FLEXIBILITY OF THE ETHEREUM NETWORK.



## EVM ARCHITECTURE

### STACK :

- MAX OF 1024 WORDS OF 256 BITS
- LIFO LOGIC
- ACCESS AND MANIPULATION OF THE TOP 16 WORDS

### MEMORY :

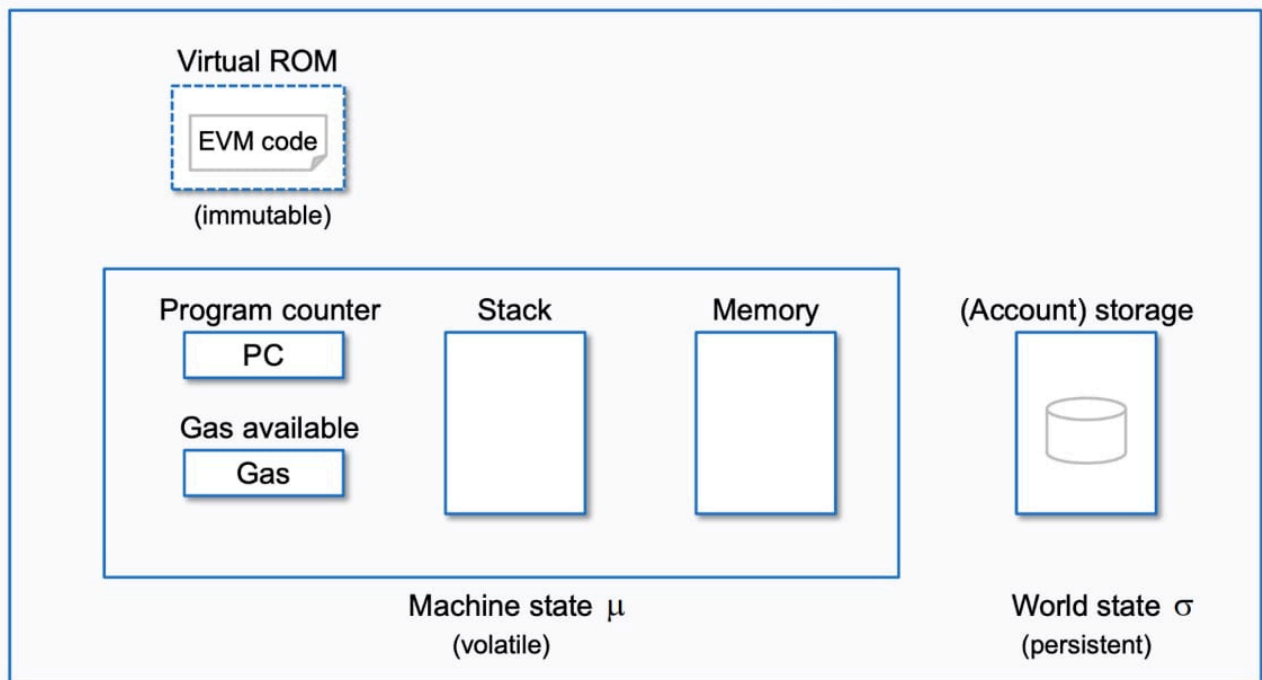
- LINEAR MEMORY
- BYTE ADDRESSABLE
- MUTABLE + VOLATILE

### STORAGE :

- STORES KEY (256 BITS) - VALUE (256 BITS) PAIRS
- MUTABLE + PERSISTENT
- GAS INTENSIVE

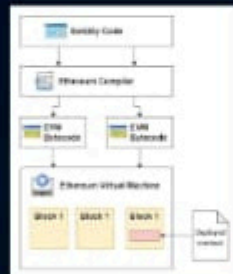
## EVM architecture

### Ethereum Virtual Machine (EVM)



The EVM is a simple stack-based architecture.

## EVM Architecture in Block chain



## SOLIDITY FEATURES

- Solidity, a primary programming language for Ethereum and other blockchain platforms, has numerous features designed to facilitate smart contract development and blockchain interactions. Here's an overview of some key features
- TYPES OF SOLIDITY FEATURES
- MODIFIERS
- EVENTS
- INHERITANCE



# MODIFIERS

In Solidity, modifiers are a powerful feature that allow you to modify the behavior of functions, often by adding preconditions or enforcing rules before the function's execution. They act like decorators in other programming languages, providing a convenient way to add common logic to multiple functions without repeating code. Modifiers are useful for enforcing access control, validating inputs, ensuring state conditions, and more.

**Events :** Solidity provides an event system, enabling contracts to emit events to signal state changes or other important information. External applications can listen for these events, facilitating interactions between the blockchain and off-chain systems.

**Inheritance:** Solidity supports contract inheritance, allowing you to create more complex contracts from simpler ones, encouraging code reuse and modular design.



# ETHEREUM PLATFORM

Ethereum is a decentralized platform that enables the creation and execution of smart contracts and decentralized applications (dApps). It was proposed by Vitalik Buterin in late 2013 and officially launched in 2015. Here's a breakdown of its key components and how it works

# ETHEREUM WALLET

An Ethereum wallet is a digital tool used to interact with the Ethereum blockchain. It allows you to store, send, and receive Ether (ETH) and other tokens, as well as interact with decentralized applications (dApps) and smart contracts. Here's a breakdown of what an Ethereum wallet is and how it works



# ETHEREUM SOFTWARE

An Ethereum software wallet is a digital tool that allows users to store, manage, and transact with Ethereum and Ethereum-based assets (like ERC-20 tokens) through software applications. These wallets can be desktop-based, mobile-based, or browser-based

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# Thank You All