



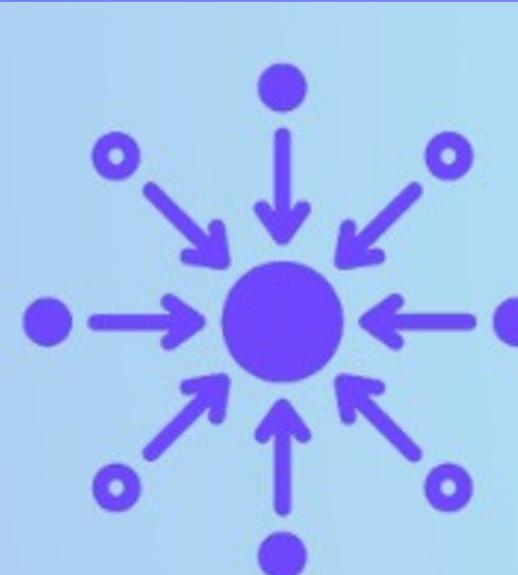
BLOCKCHAIN 101

HISTORY OF THE WEB

Web 1.0

1994

- **Start of the Internet:** This era marked the beginning of the internet.
- **Read-Only Content:** Websites were static and non-interactive, mainly providing information without user interaction



WEB 1.0

Read-Only: 1990-2004

Web 2.0

2004

- **Interactive Internet:** The development of technologies like HTML5, CSS3, and JavaScript made the web more interactive.
- **Social Media Platforms:** Websites like YouTube, Facebook, and Instagram emerged, allowing users to interact, share, and create content.



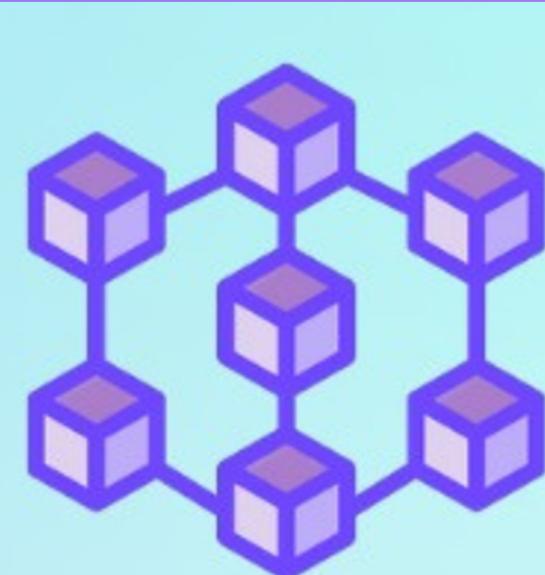
WEB 2.0

Read-Write: 2004-now

Web 3.0

2009

- **Next Evolution:** Represents the next step in the internet's evolution.
- **Advanced Data Processing:** Uses AI and blockchain technology to process data with near-human intelligence.
- **Characteristics:**
 - **Open Networks:** Accessible to everyone.
 - **Trusting Networks:** Secure and reliable.
 - **Permissionless Networks:** No need for central authorities or intermediaries to access or use the network.



WEB 3.0

Read-Write-Own: 2014-?

INTRODUCTION TO BLOCKCHAIN

What is Blockchain?

- A blockchain is like a giant notebook that everyone can see but no one can change.

How Does Blockchain Work?

- Each page in the notebook is called a "block."
- Every time a new transaction happens, it gets added to a new block.
- All the blocks are linked together in a chain, hence the name "blockchain."

What is blockchain

- **Breakdown of the Term**
 - **Block:** A block is a bunch of data or a collection of records.
 - **Chain:** Blocks are linked together in a sequence, forming a chain.
- **How It Works**
 - **Data Storage:** Each block can only store a certain amount of data. Once it's full, a new block is created.
 - **Forming the Chain:** New blocks are added to the previous block, creating a continuous chain of blocks. This chain of blocks is called the blockchain.
- **Example: Bitcoin**
 - **Ledger:** In Bitcoin, the collection of blocks is referred to as the ledger, which keeps a record of all transactions.

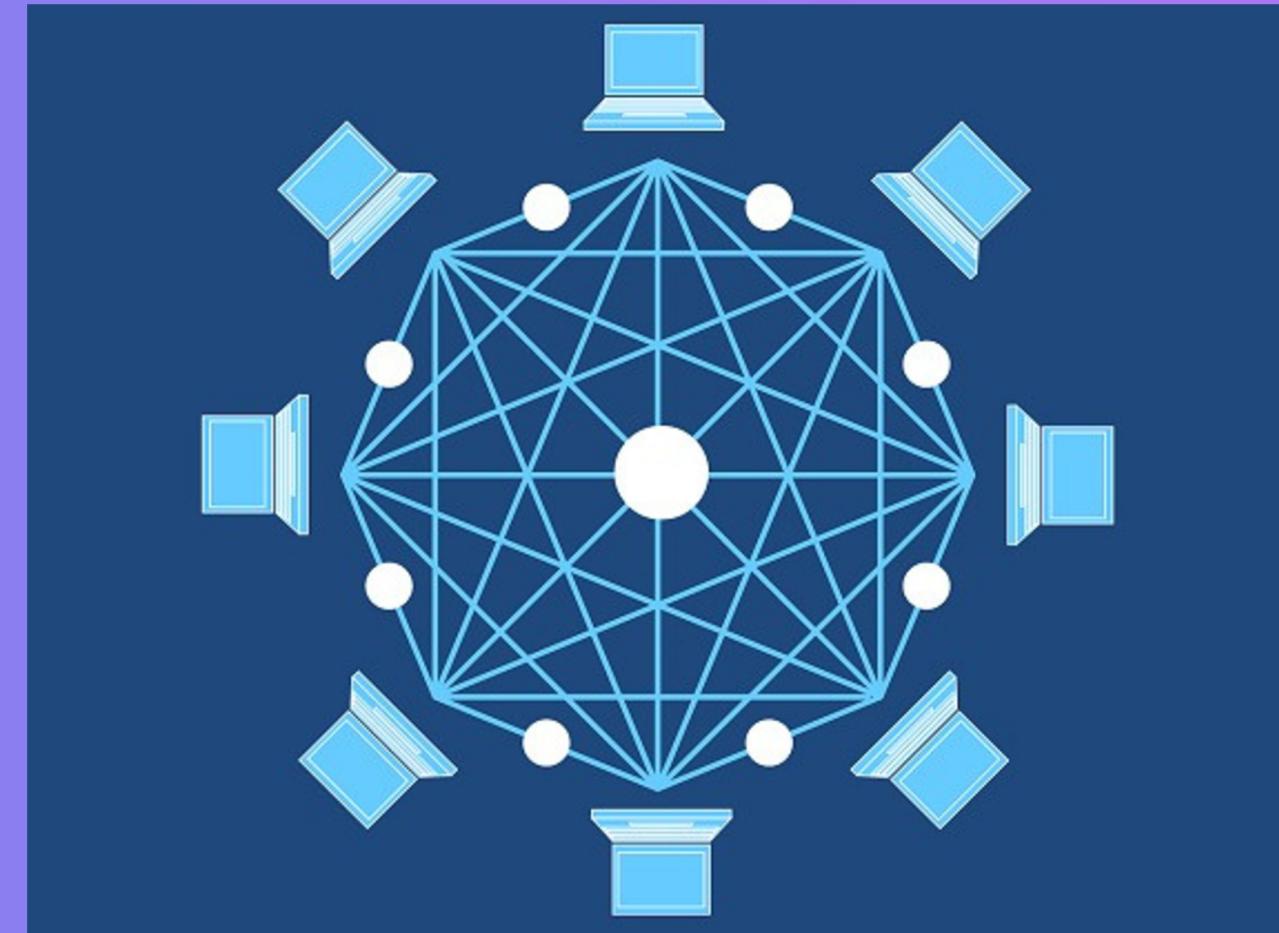


Why is Blockchain Special?

- Transparent: Everyone can see the transactions.
- Secure: Once a block is added, it can't be changed.
- Decentralized: There's no single person or company in charge; everyone helps keep it running.

Blockchain is Decentralized

- **Centralized vs. Decentralized**
 - **Centralized:** Controlled by one person or entity.
 - **Decentralized:** Control is distributed among many participants. Anyone can access and validate the data.
- **Incentives for Participation**
 - **Rewards:** Participants, known as validators, are rewarded for validating transactions and maintaining the network.



Blockchain is Immutable

- **Unchangeable Data**
 - **Immutability:** Once data is recorded in a block, it cannot be altered.
- **How It's Achieved:**
 - **Cryptographic Hashing:** Ensures data integrity.
 - **Consensus Algorithms:** Methods for network participants to agree on the validity of transactions.
 - **Proof of Work (PoW):** Used by Bitcoin, requires solving complex puzzles.
 - **Proof of Stake (PoS):** Validators are chosen based on the amount of cryptocurrency they hold and are willing to "stake" as collateral.



EVOLUTION OF BLOCKCHAIN

~~Early Ideas (1970s - 2005)~~

- **Cryptography and Computer Science:** The idea of secure, decentralized ledgers started in the 1970s and 1980s within cryptography and computer science research.
- **Early Systems:**
 - **Hashcash (1997):** Created a system for limiting email spam and denial-of-service attacks.
 - **Bit Gold (2005):** Proposed a decentralized digital currency.

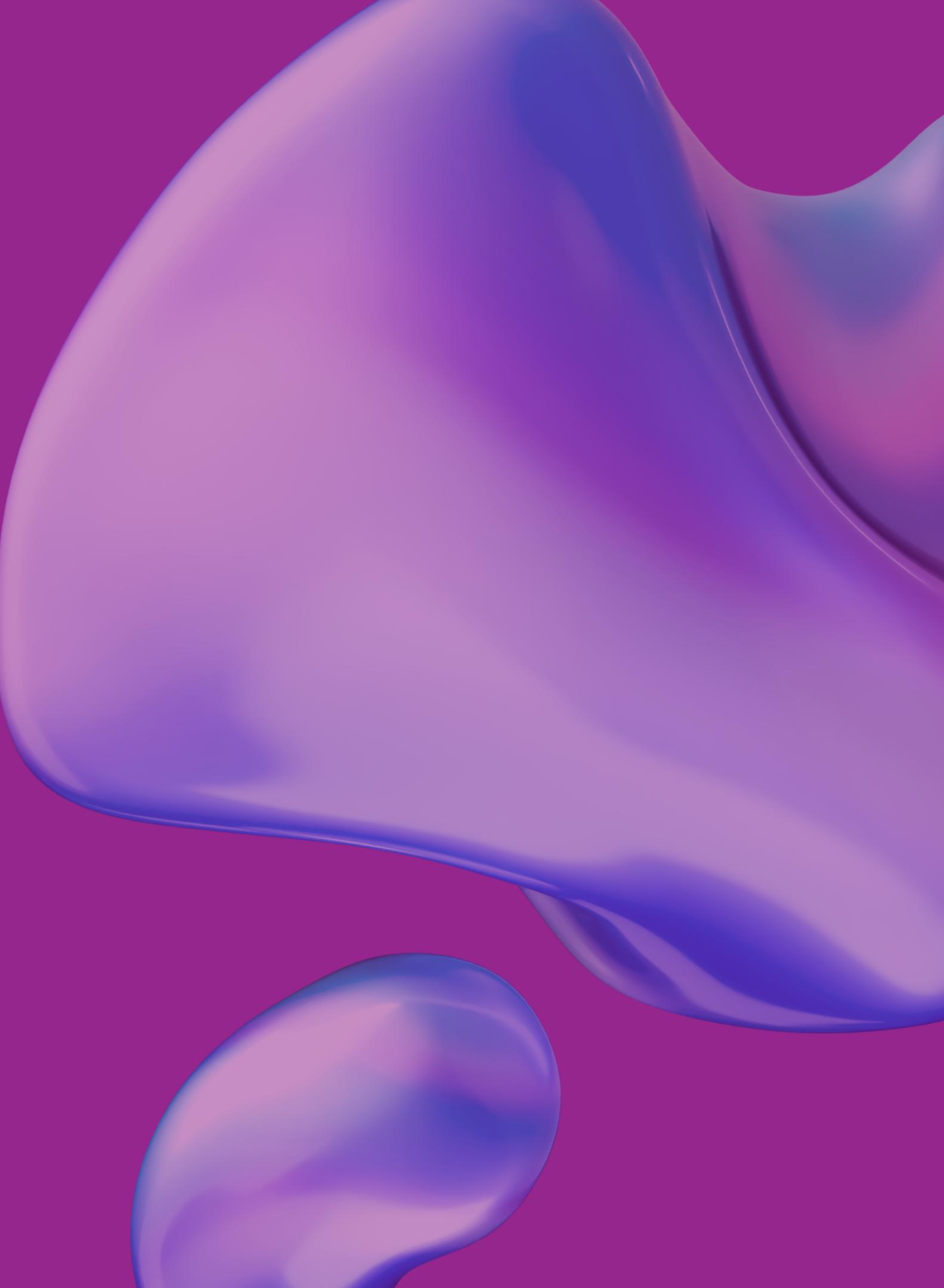
Birth of Bitcoin (2008-2009):

- **Bitcoin Whitepaper:** In 2008, an unknown person or group named Satoshi Nakamoto published a paper describing Bitcoin.
- **Bitcoin Launch:** In 2009, Bitcoin was introduced as the first decentralized cryptocurrency using blockchain technology.

Blockchain Technology Explored (2010-2014):

- **Beyond Bitcoin:** Developers began looking at blockchain's use beyond just Bitcoin.
- **New Projects:**
 - ***Namecoin (2011)***: Used blockchain for domain name registration.
 - ***Litecoin (2011)***: Offered faster transaction times than Bitcoin.
 - ***Ripple (2012)***: Focused on enabling instant, global payments.

DEFINITION OF TERMS



Smart Contracts

- **Smart Contracts:** A smart contract is self-executing code that runs on a blockchain. It automatically enforces and executes the terms of an agreement when specific conditions are met. .

Enterprise Blockchain Adoption (2016-2018):

- **Corporate Interest:** Businesses started exploring blockchain beyond cryptocurrencies.
- **Hyperledger:** Launched by the Linux Foundation in 2016 to support business blockchain development.
- **Industry Use Cases:** Finance, supply chain, healthcare, and more began using blockchain for better transparency, security, and efficiency.

Regulatory Challenges and Scaling (2019-Present):

- **Regulatory Challenges:** Governments are figuring out how to regulate cryptocurrencies and blockchain technology.
- **Scalability Issues:** As blockchain usage grows, there are challenges in handling more transactions.
- **Solutions:** New approaches like layer 2 solutions (e.g., the Lightning Network for Bitcoin) and updates to blockchain protocols are being developed to address these issues.

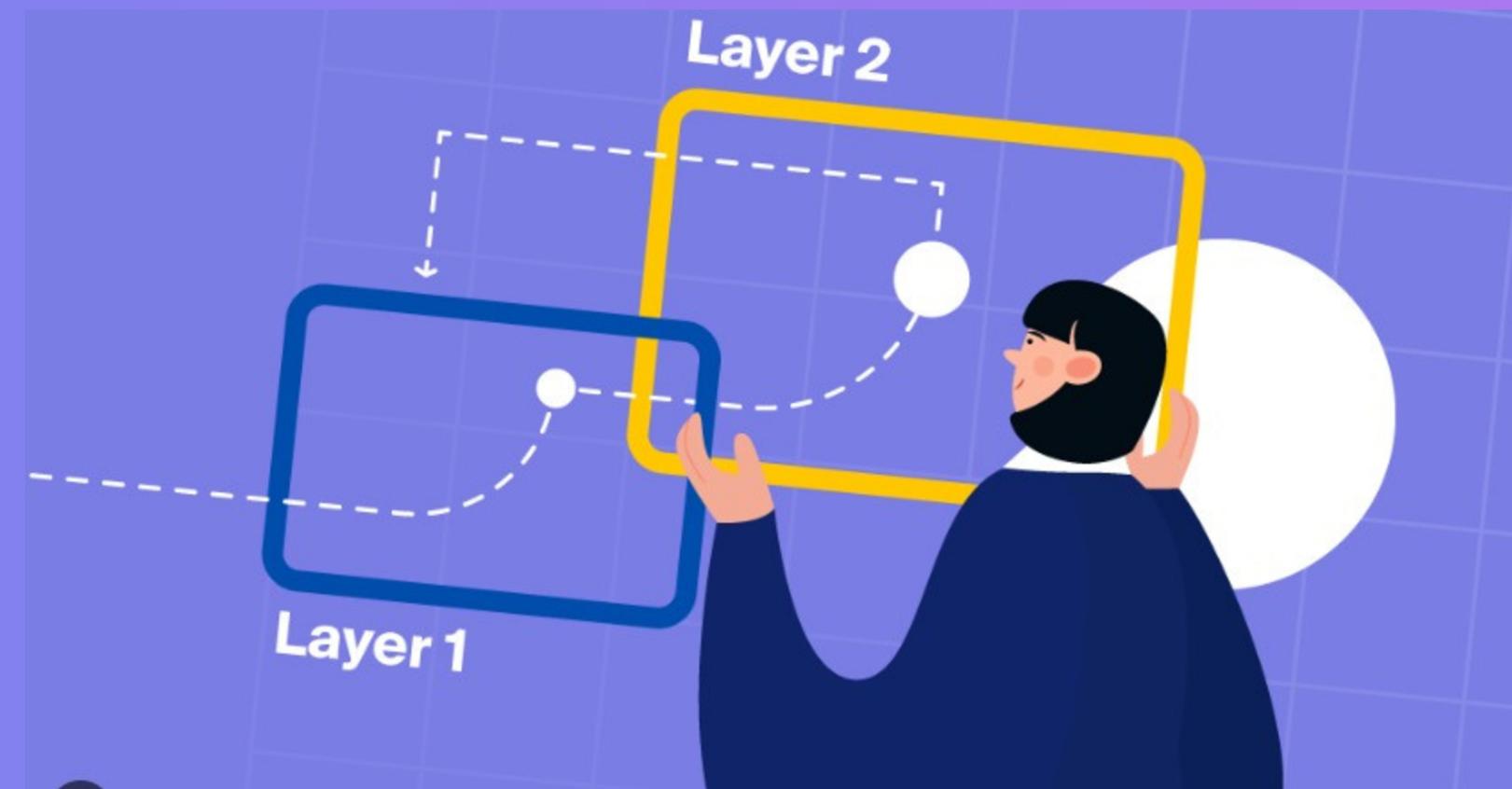
Blockchain Networks

- **Layer 1 Networks**

- **Foundation Networks:** The primary infrastructure for blockchain.
- **Examples:** Ethereum, Solana, Bitcoin, ICP.
- **Functions:** Include consensus mechanisms that determine security and speed.

- **Layer 2 Networks**

- **Enhancements:** Built on top of Layer 1 to improve functionality.
- **Benefits:** Reduce fees and increase transaction speed.
- **Examples:** Solutions that work with Ethereum, Bitcoin, and other Layer 1 networks.



Blockchain Networks

- Unique Features of Layer 1 Networks

- **Ethereum:** Supports smart contracts, NFTs, and tokens.
- **Solana:** Known for high transaction throughput.
- **ICP (Internet Computer Protocol):** Advanced technology and fast adoption rate.
- **Bitcoin:** The original cryptocurrency, primarily used as a store of value and digital currency.



MEMECOINS IN CRYPTOCURRENCY

Definition: Meme coins are cryptocurrencies that originated from internet memes or have some humorous characteristic. They gained massive popularity due to social media and online communities.

Current Blockchain Use-cases

- **Cryptocurrency**
 - *Underlying Technology:* Blockchain is the foundation for cryptocurrencies like Bitcoin and Ethereum.
- **Art Collecting & Investing**
 - *NFTs:* Non-Fungible Tokens represent ownership of unique digital art and collectibles.
- **Decentralized Finance (DeFi)**
 - *Peer-to-Peer Finance:* Traditional finance systems are transformed into decentralized, peer-to-peer networks.
- **Supply Chain Management**
 - *Tracking:* Blockchain is used to track goods from their origin to the consumer, ensuring transparency and authenticity.
- **Gaming**
 - *Digital Asset Ownership:* Blockchain enables secure ownership and transfer of digital assets in games.



Blockchain Use Cases

- **Healthcare:** Secure and transparent medical records management.
- **Voting Systems:** Ensuring transparent and tamper-proof elections.
- **Real Estate:** Secure property transactions and title management

THANK YOU

