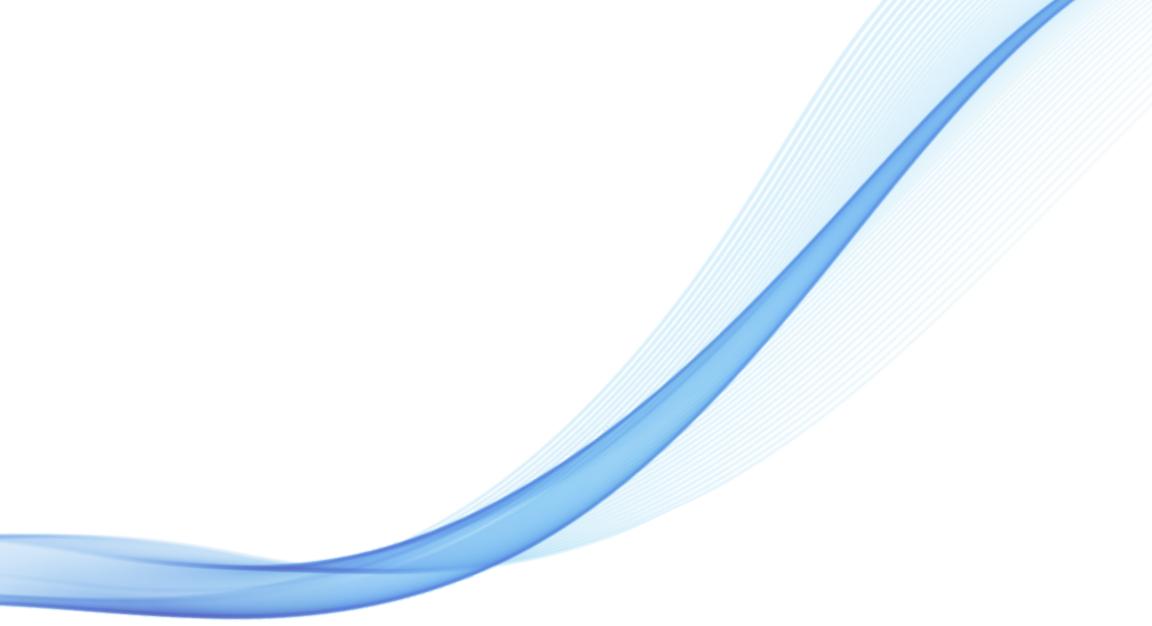


# **GETTING STARTED WITH BLOCKCHAIN**

**Ranju G.C.  
Supriya Khadka**





# Agenda

1

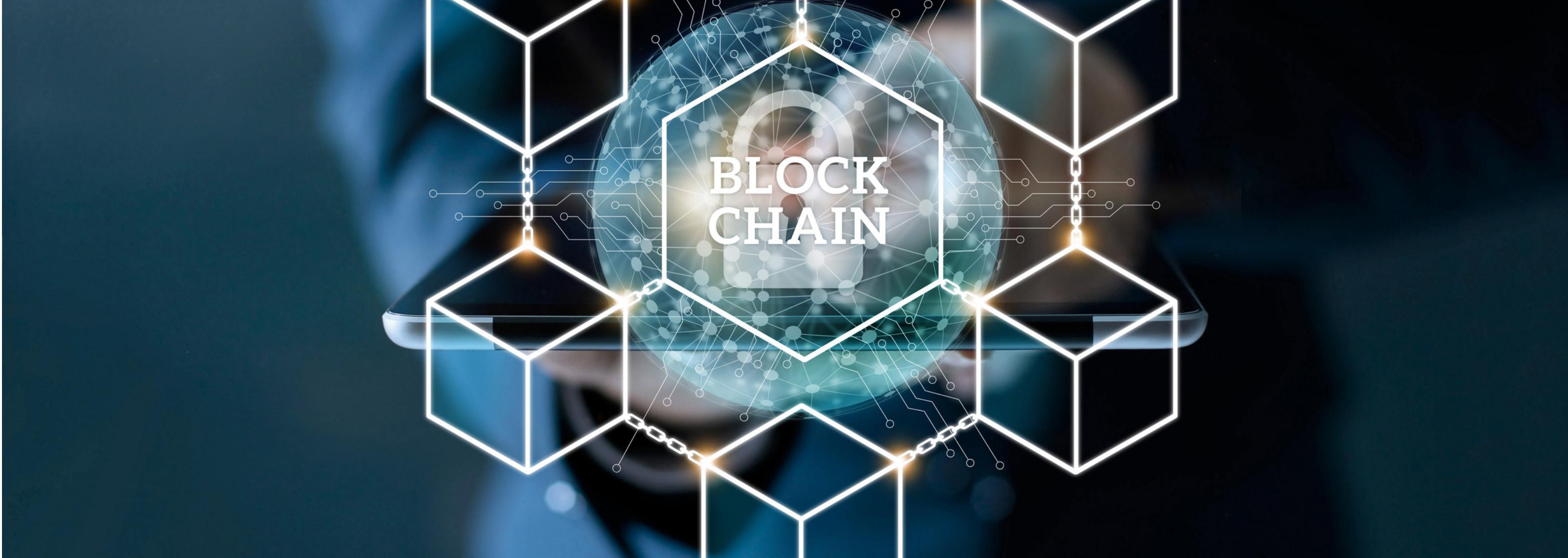
What is  
Blockchain?

2

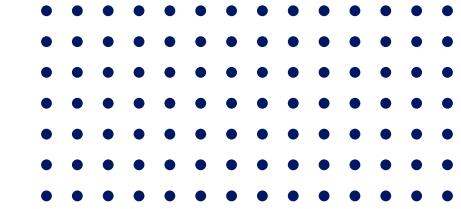
Why is it so  
popular?

3

How do I get  
started with it?

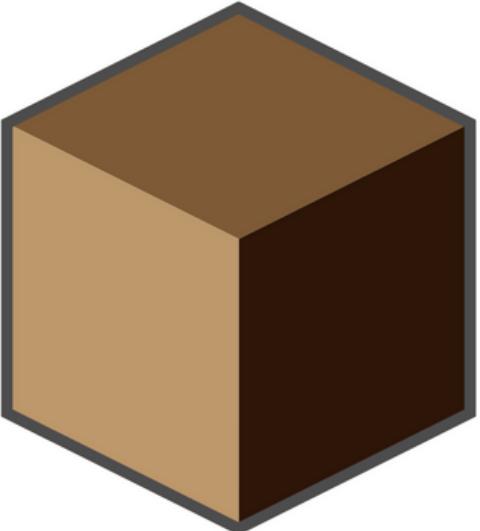


# What is Blockchain?

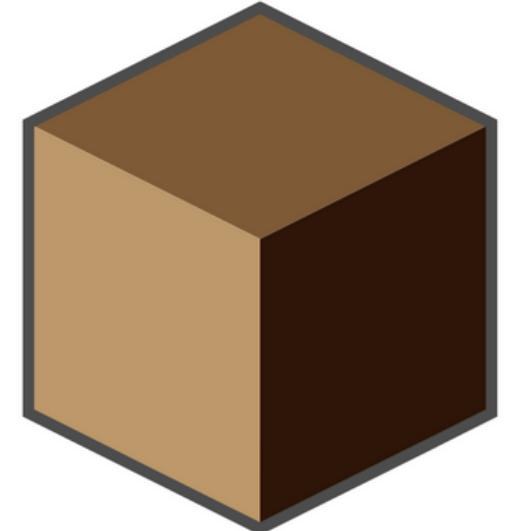


# A chain of blocks

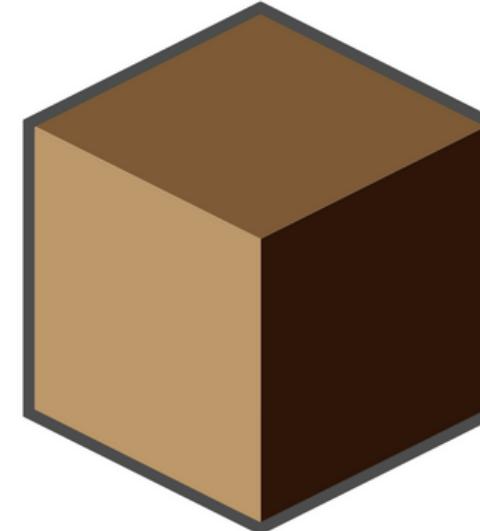
**Block 1**



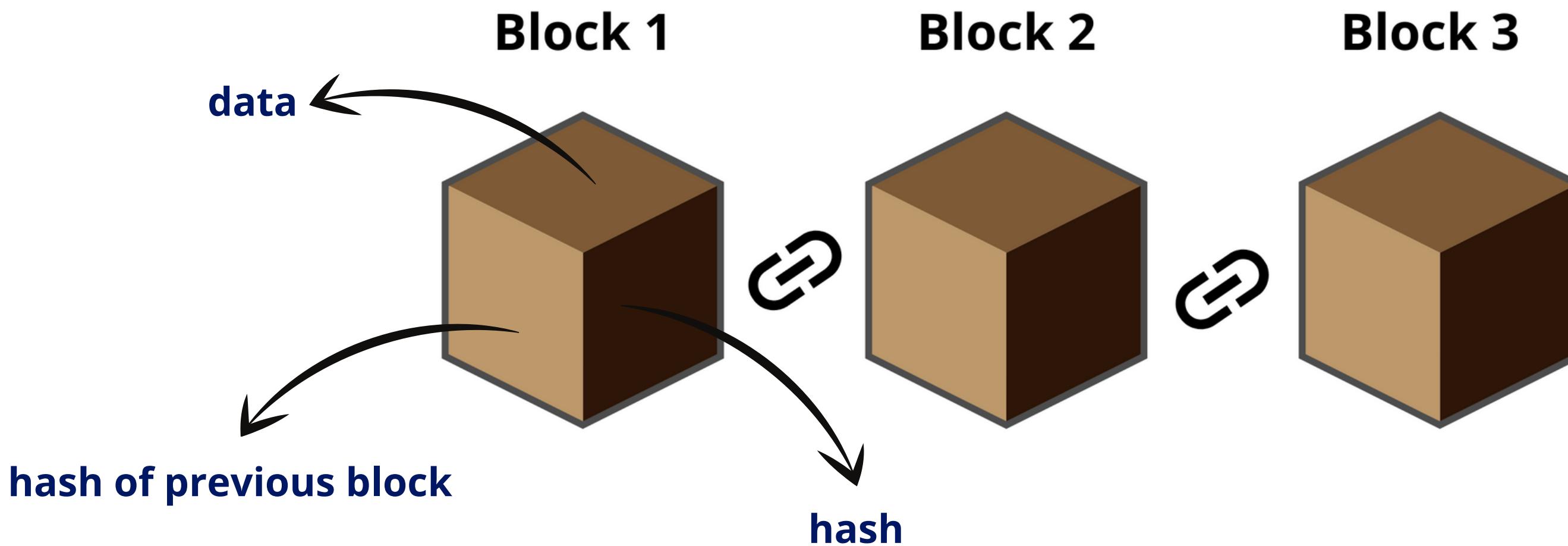
**Block 2**



**Block 3**

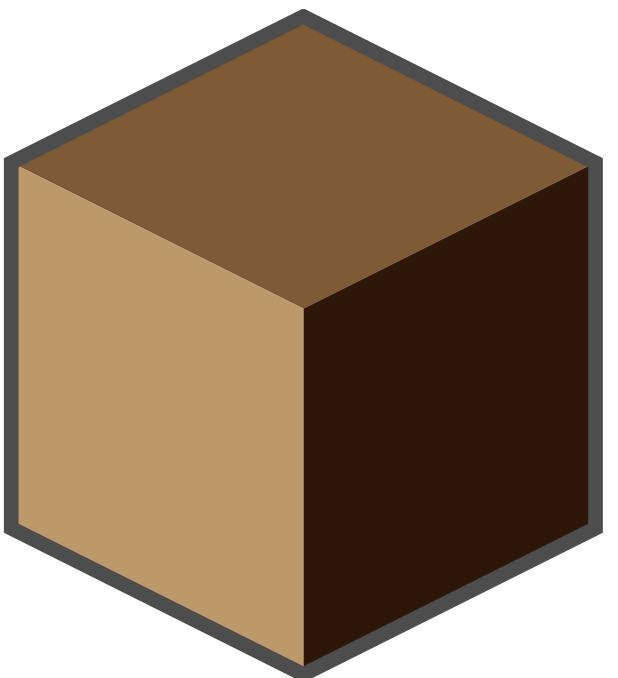


# A chain of blocks

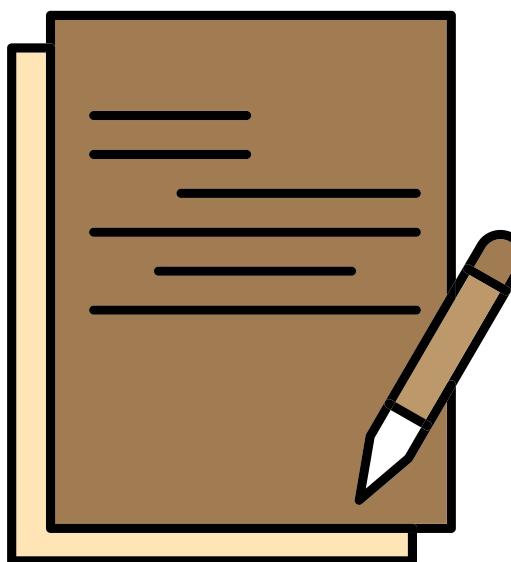


In simple terms,

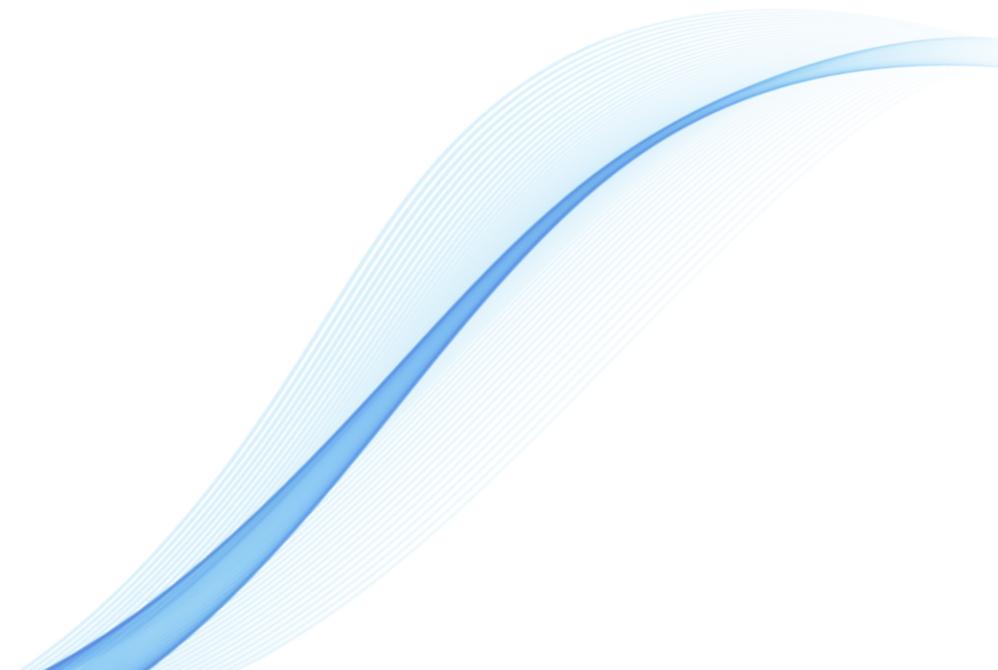
# A Block is equivalent to a Record



≈

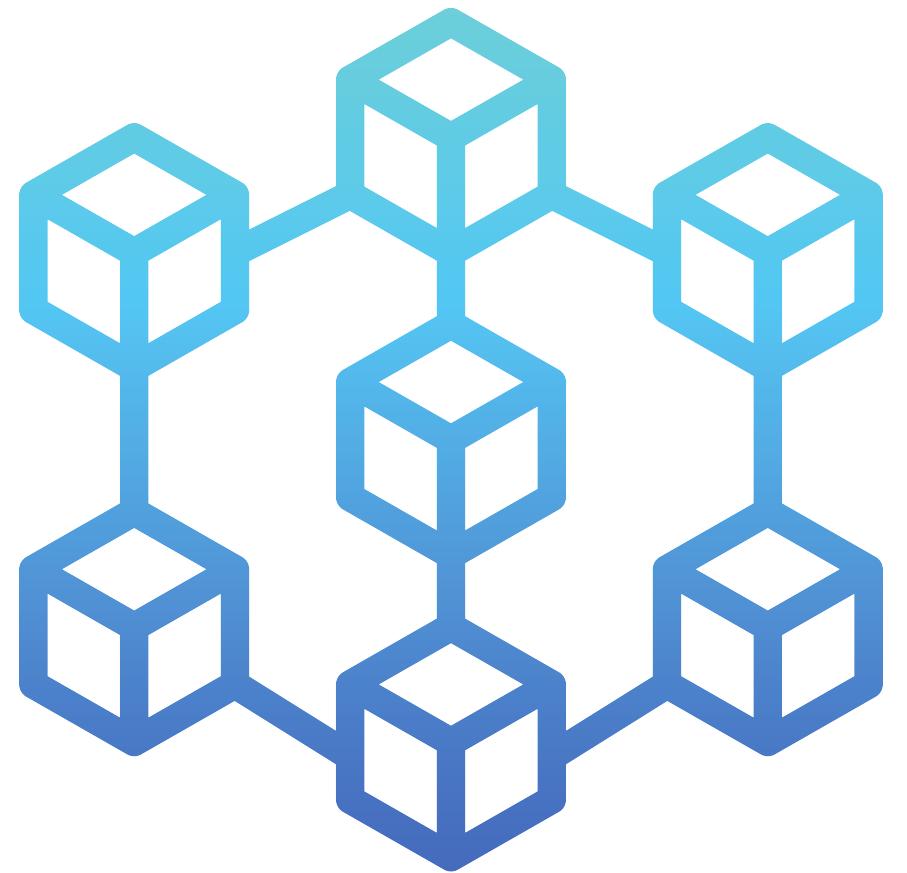
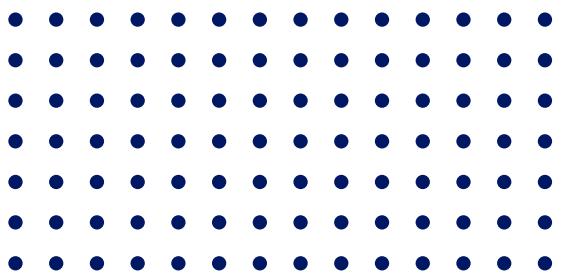


# A Blockchain is equivalent to a Ledger

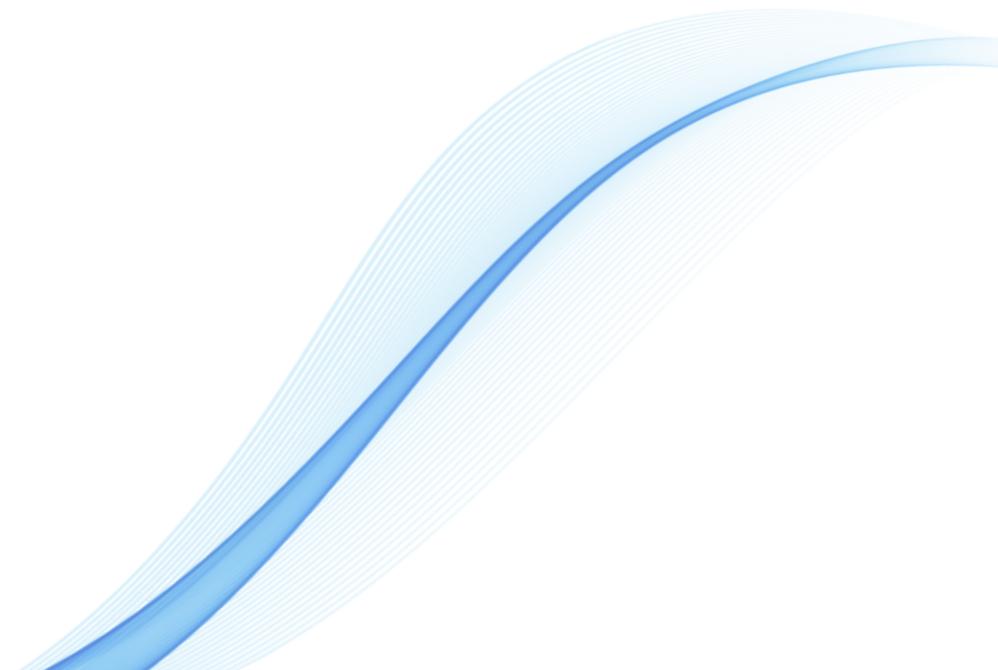


# Blockchain

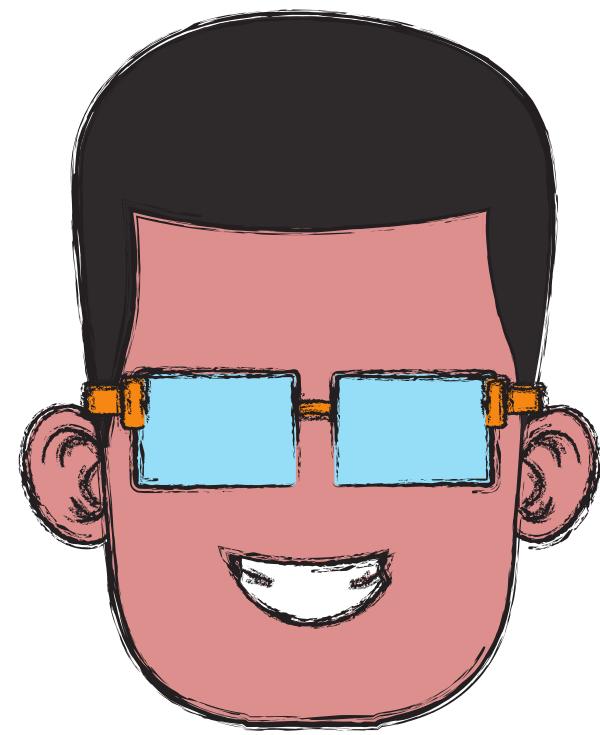
A digital ledger that facilitates the process of recording transactions and tracking assets in a business network



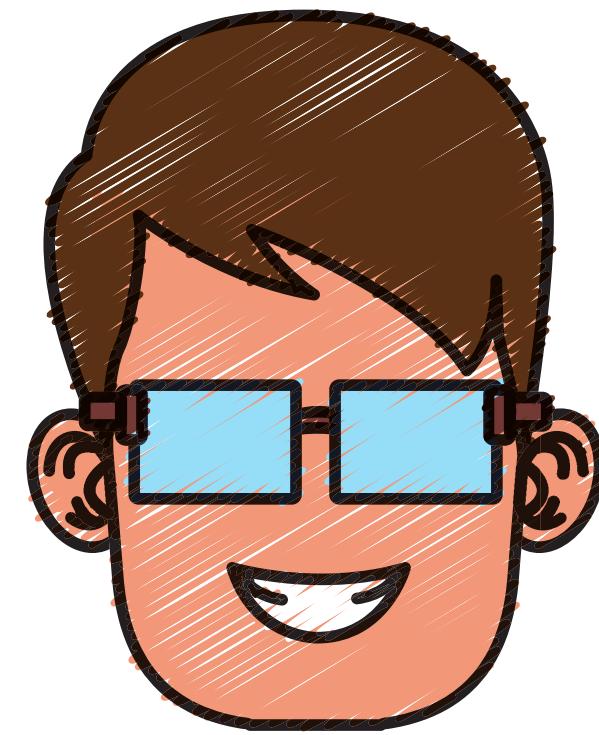
# **What is so special about this ledger?**



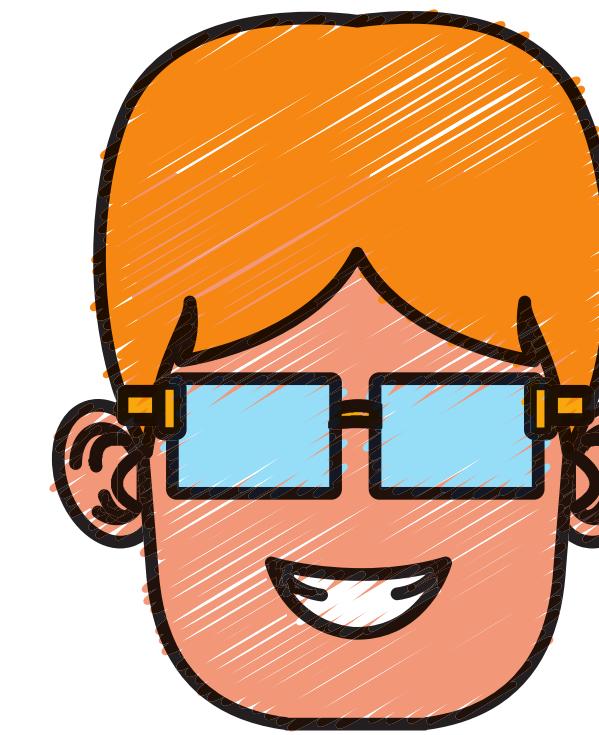
# Story Time



Sagar



Sanskar



Sandip

# Story Time

Sagar	Sanskar	Sandip
		

# Story Time

Sagar	Sanskar	Sandip
		
		

# Issues in Centralized Systems

1

No Transparency

2

Single Point of  
Failure

3

Very Powerful  
Admin

# Story Time

Sagar	Sanskars	Sandip

Sagar's Copy

Sagar	Sanskars	Sandip

Sanskars Copy

Sagar	Sanskars	Sandip

Sandip's Copy

# Story Time

Sagar	Sanskars	Sandip

Sagar's Copy

Sagar	Sanskars	Sandip

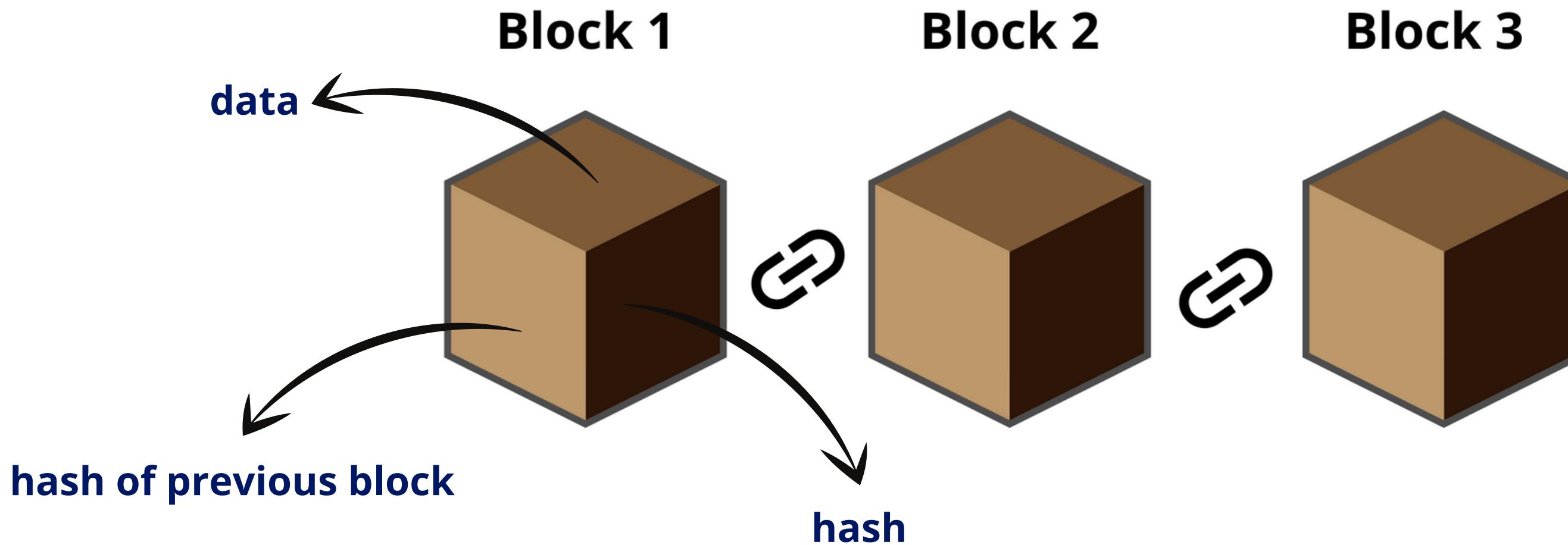
Sanskars Copy

Sagar	Sanskars	Sandip

Sandip's Copy

Now with better understanding,

# A chain of blocks



# Features of Blockchain

Immutable

Distributed

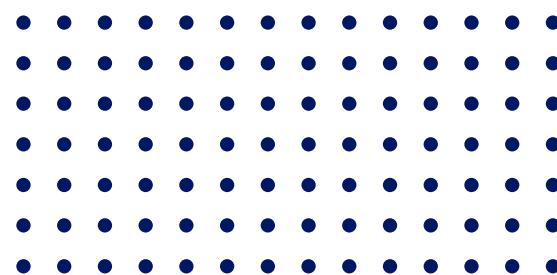
Transparent

Secure

# Smart Contract

Smart Contracts are simply programs stored on a blockchain that run when predetermined conditions are met.

They typically are used to automate the execution of an agreement so that all participants can be immediately certain of the outcome, without any intermediary's involvement or time loss.



# Applications of Blockchain





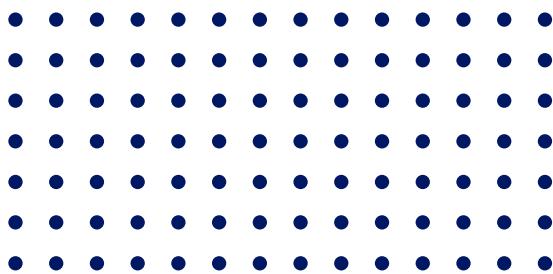
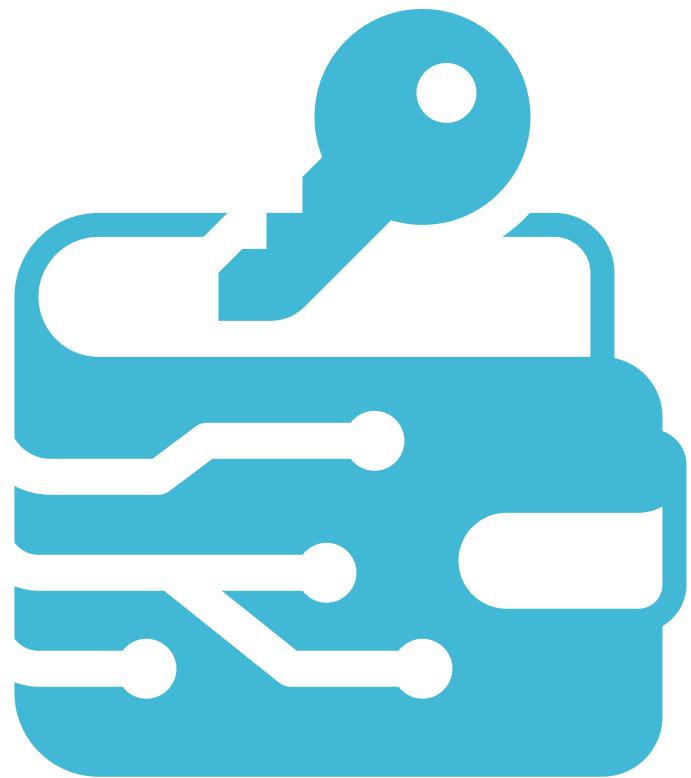
1

# Cryptocurrency

- Cryptocurrency != Blockchain
- Blockchain enables the existence of cryptocurrency

# Wallets

- A crypto wallet is a place where you can securely keep your crypto.
- Crypto wallets store your private keys, keeping your crypto safe and accessible. They also allow you to send, receive, and spend cryptocurrencies





2

## Peer-to-peer Technologies

- All nodes have equal power and perform the same tasks
- Online Marketplaces, File Sharing, Ride Sharing



3

## Non Fungible Tokens

Individual Tokens with Unique  
identifications



4

## Voting

Using blockchain technology can make sure that nobody votes twice, only eligible voters are able to vote, and votes cannot be tampered with.

# Applications

## Insurance

Transparency for customers and providers

Avoiding duplicate claims

## Real State

Secure and accessible to verify and transfer ownership

## Artist Royalties

Ensuring artists get royalties for their work

## Data Storage

Provides greater security and integrity

Decentralization advantage

# Applications

## Gambling

Transparency to its potential gamblers

No need to provide personal information

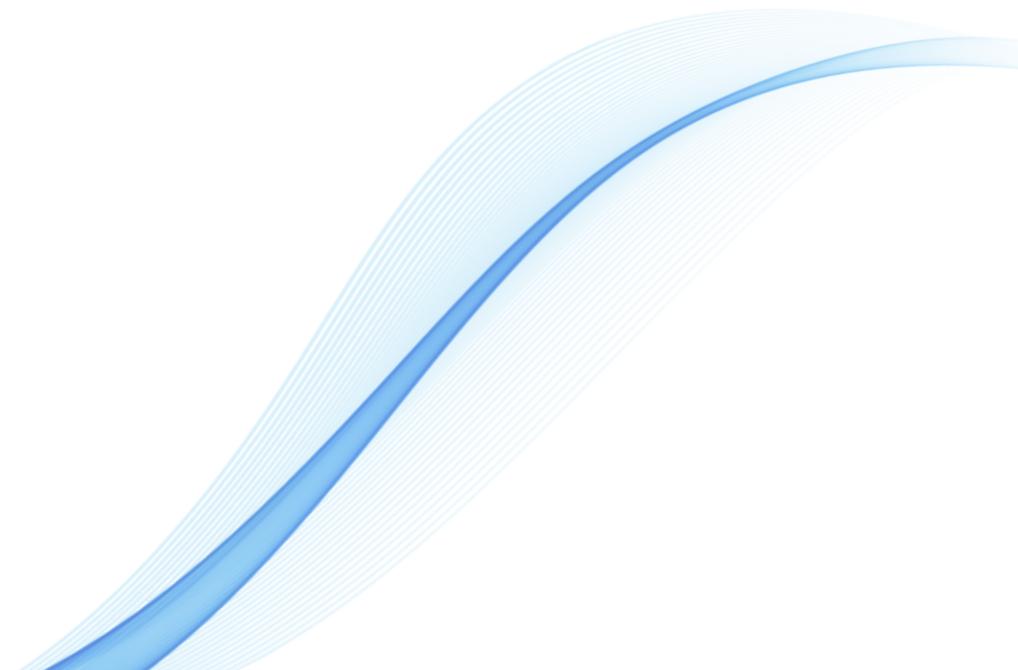
## Secure IoT

Provides greater security by storing passwords and other data on a decentralized network

## Securely share Medical Data

Helps medical professionals to obtain accurate information on their patients

# How to Get Started?



# Before You Start

1

Data Structure  
and Algorithm

2

Object Oriented  
Programming

3

Blockchain  
Concepts

4

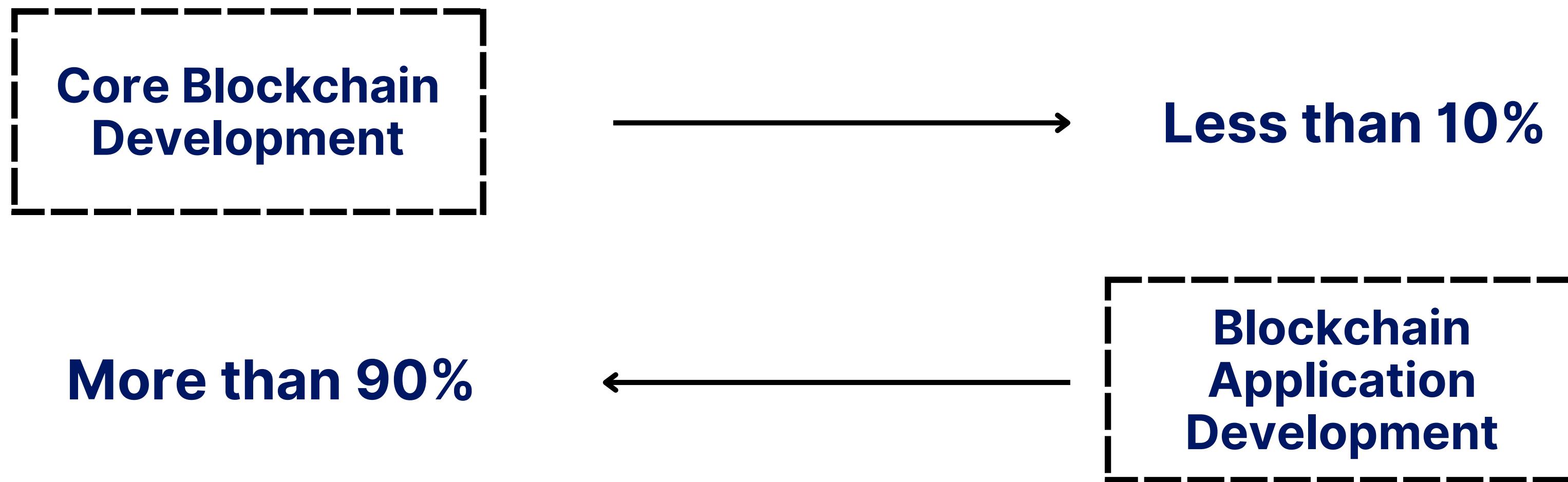
Cryptography  
Concepts

# Blockchain Development

**Core Blockchain  
Development**

**Blockchain  
Application  
Development**

# Blockchain Development



# Core Blockchain

## Databases and Networking

How is data stored?

Decentralized Network Architecture

## Learn about Cryptonomics

Read Bitcoin White Paper

Calculation of Gas Amount/ Transaction

## Programming Languages

Golang  
C++  
Rust  
Python

## Blockchain Advanced

Blockchain Protocols  
Proof of Work/ Stake  
Features and Functions

# Decentralized Application Development (DApp)



**Smart Contract Development**



**Frontend Development**

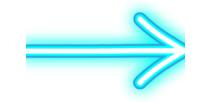


**Glue Code : web3.js Ether.js**

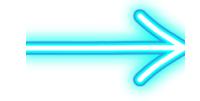
# Next Steps...



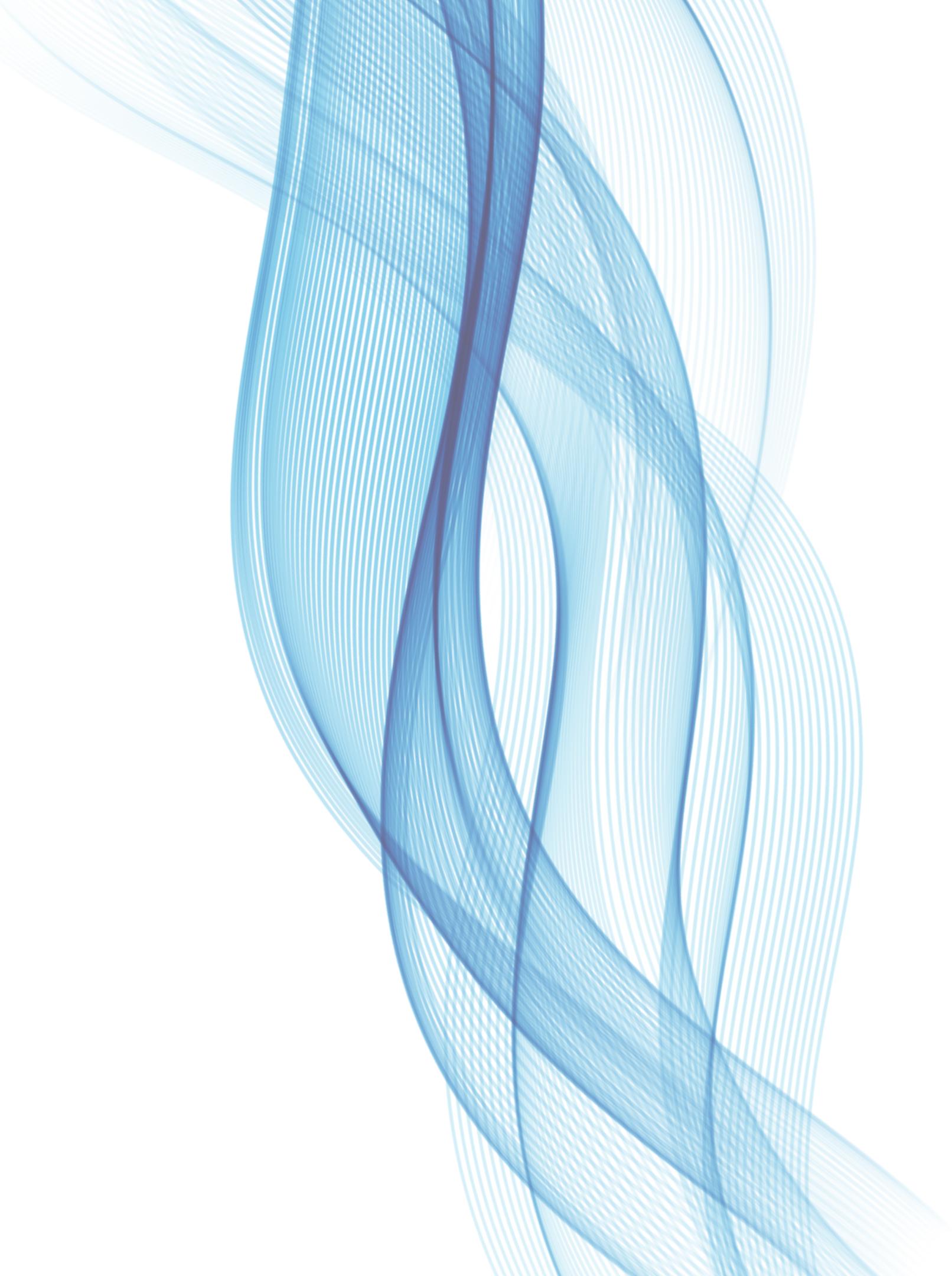
**ERC20 Tokens**



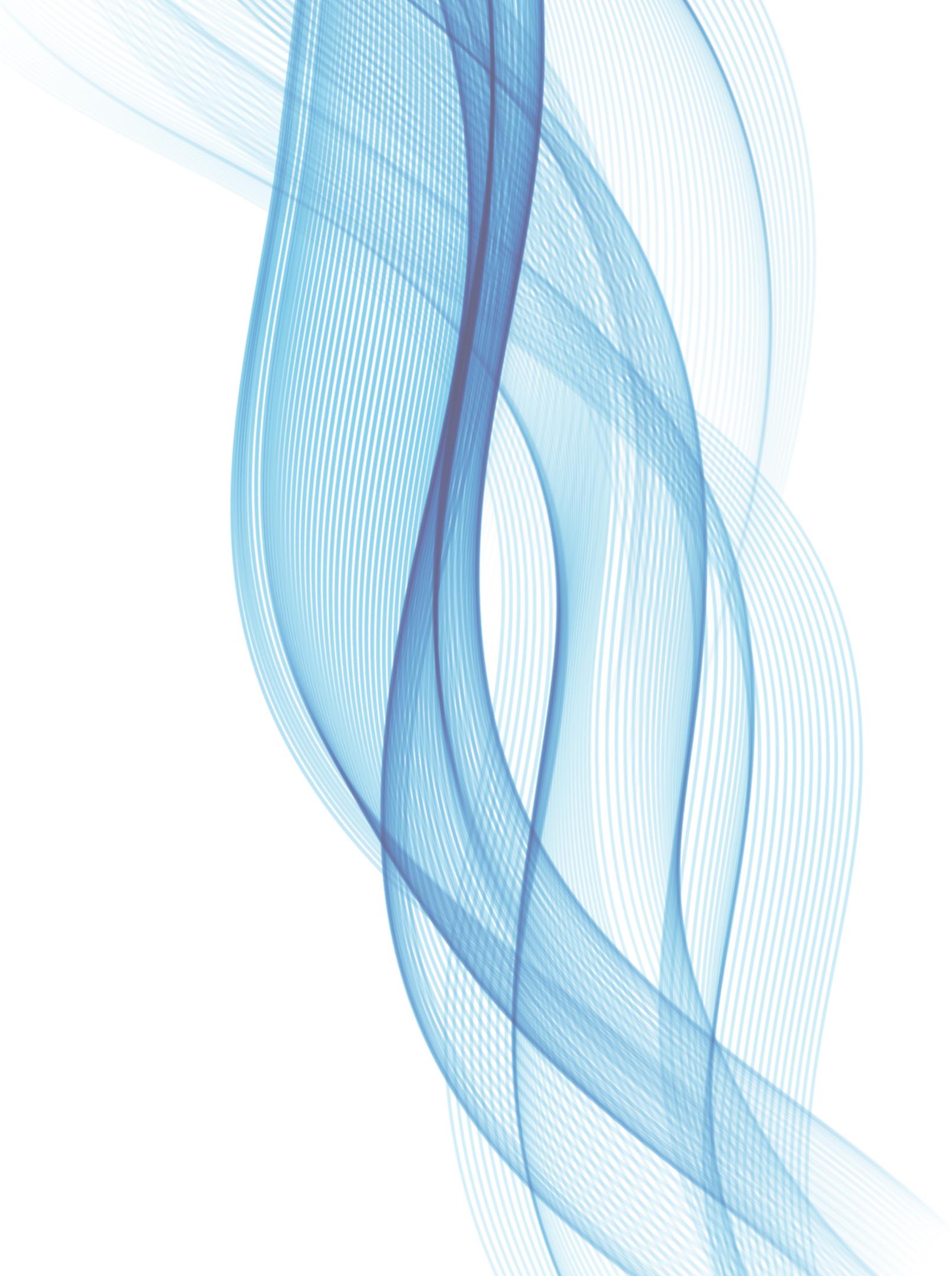
**NFTs : ERC721, ERC 1155**



**Decentralized Finance and so on**



# Thank You for Listening



# Resources

- <https://www.coursera.org/learn/cryptocurrency/home/welcome>