A Workshop on

Blockchain Technology

PDSC
Plan | Design | Solve | Create

Lecture 4
Blockchain Applications

Contracts

Lecture 4

Blockchain Applications

Contracts

Agreement between parties

Eg: between employer and employee

Between application developer and user

Set of rules, defined by developer

Different applications, based on the rules

Blockchain

Lecture 4
Blockchain Applications

Associated With

1. **Money (Cryptocurrency)**

2. **Decentralized, immutable system**

Blockchain applications are based on these. Let's start!
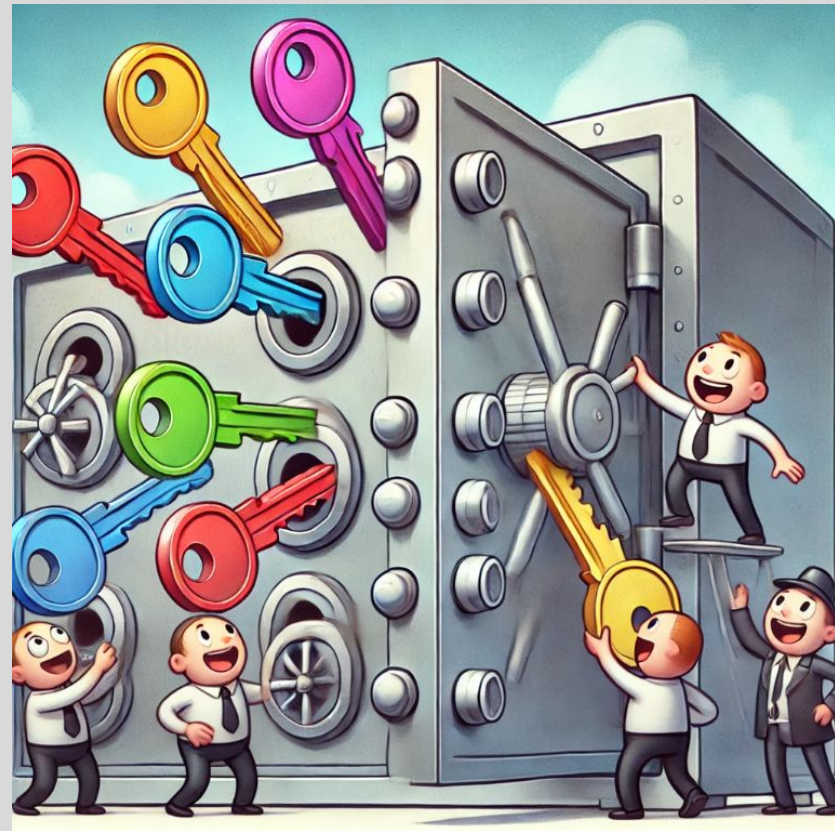
Multisig Wallets

Lecture 4
Blockchain Applications

- k / N approvals before txn execution

- Shared Control

  Suitable for organizations, DAOs

  and group ownership.

DeFi

Lecture 4
Blockchain Applications

Introduction

What is DeFi

TradFi and DeFi

Limitations of TradFi

Limitations of DeFi

Stablecoins

Dollar Backed Stablecoins

UDST, USDC

Crypto Backed Algorithmic Stablecoins

UST, DAI, bnUSD

Money Market

Algorithmic Financial System

Reference to a bank

Multiple reserves (tokens)

Variable Interest Rates

Eg. AAVE, Compound, Cedro

Decentralized Exchange

Swap cryptocurrencies within a chain

Differences with Centralized Exchange

Liquidity Pools

Eg. Uniswap, Sushiswap

Staking

Fixed Deposit for Blockchain

Lock up ETH, get rewards

Other perks (member of DAO)

DAO

Community Voting To Make Decisions

Eg. AAVE, Curve, MakerDAO, etc

Risks Associated

Smart Contract Risk

Scammers

Flash Loans

NFT

Lecture 4
Blockchain Applications

NFT

Non Fungible Tokens

Based on ERC721 Standard

Eg. Bored Ape Yacht Club, CryptoPunks

Metadata

Storing data on chain is expensive

Images, Videos, not feasible to store onchain

Decentralized file storage system (IPFS)

Oracles

Lecture 4
Blockchain Applications

Oracles

Data within chain

Bring off chain data on chain

External data like stock prices, currency prices

Risks of using onchain prices

Private and Public Blockchains

Lecture 4

Blockchain Applications

Other Blockchains

Lecture 4
Blockchain Applications

Bridge

Lecture 4
Blockchain Applications

Bridge

Interoperability

Exchange data between chains

How to build a simple bridge

Let's merge applications with bridge!!

Cedro Finance

Defi over multiple chains

Supercharge with AI !

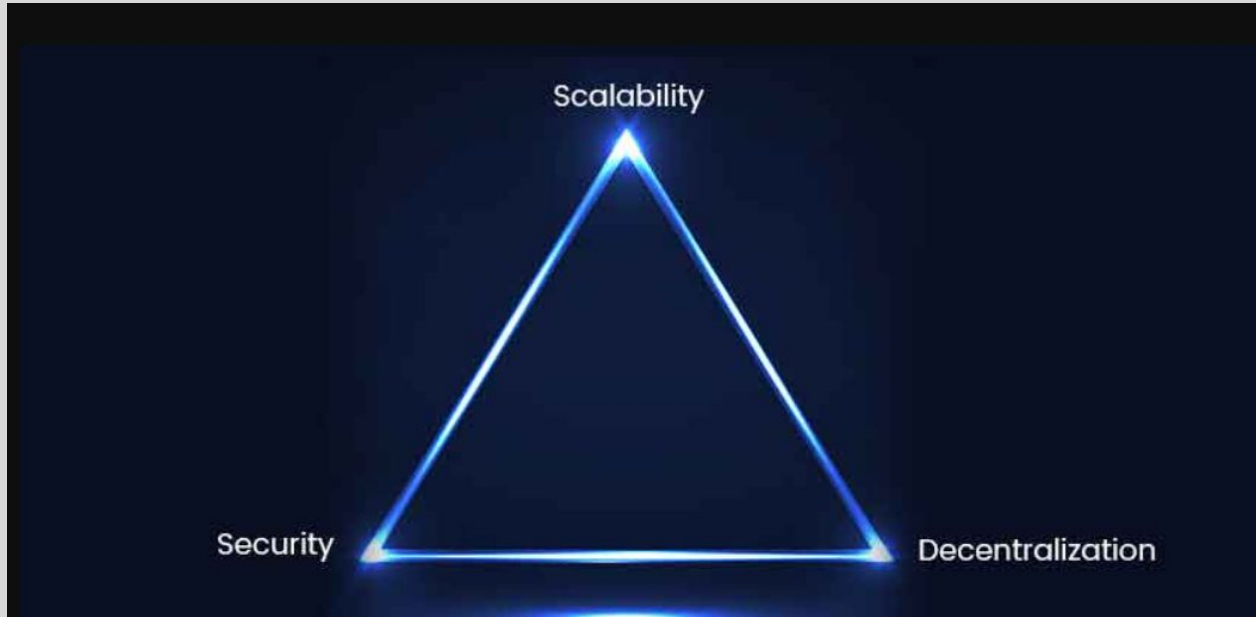Yes, you can integrate AI in blockchain.

Layer 2's

Lecture 4
Blockchain Applications

A fundamental problem

Increasing gas prices

More gas to include your txn

Ethereum: 15 tps

VISA: 2400 tps

Layer 2 solutions

Handle transactions off main ethereum
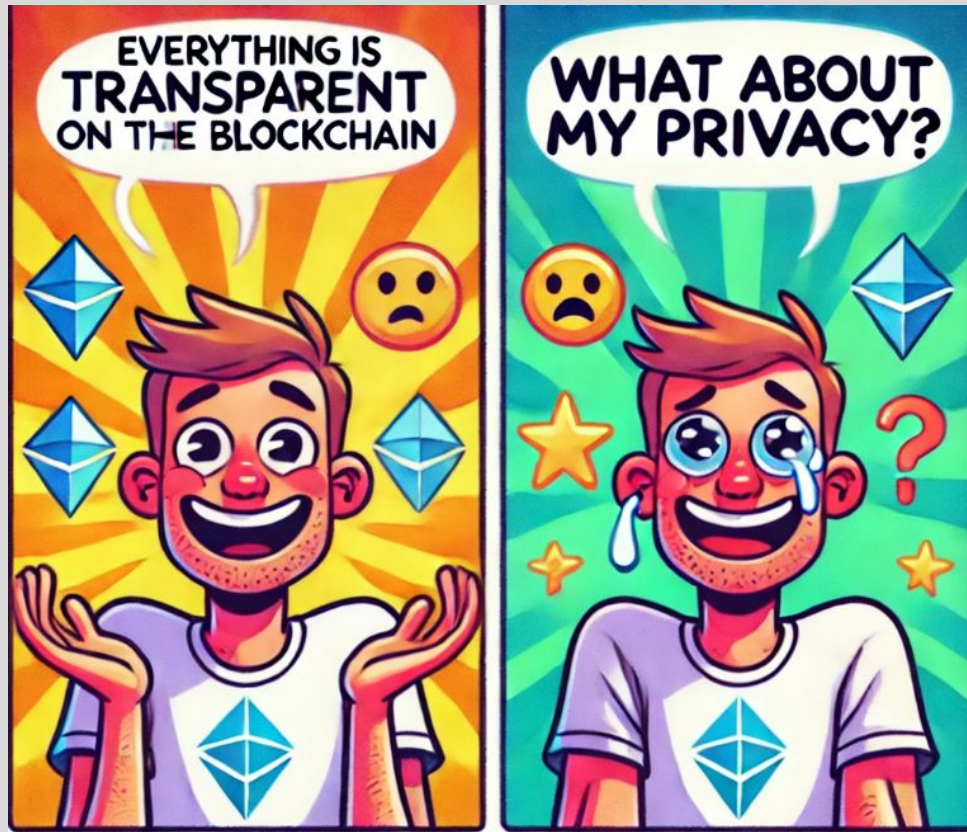
Submit transaction proof / data to ethereum

Rollups/Sidechains

Privacy

Lecture 4
Blockchain Applications

Privacy solutions

Zero Knowledge

Proving off chain, verifying on chain !

Means, no lying!

Ethereum Improvement Proposal (EIP)

Lecture 4
Blockchain Applications

Still not enough features?

Create an EIP

Get it approved from community

Feature implemented on ethereum !

Other Applications

Supply Chain

Identity Management System

Medical Data Management

Zero Knowledge Proofs