BLOCKCHAIN | Batch 1 - Day 2 (Part 1 & Part 2) Overview

- Practical of Blockchain with Anders.com
- Knowing technical terms in Blockchain
- Types of Blockchain
- Bitcoin Mining

andersbrownworth.com:-

It is the platform where we can perform a practical demo of Blockchain Technology

SHA 256 - HASH:-

SHA-256 is a cryptographic hash function that takes an input of the random size and produces an output of a fixed size. Hash functions are powerful because they are 'one-way'. What this is means is, it is possible for anyone to use a hash function to produce an output when given an input; however, it is impossible to use the output of the hash function to reconstruct its given input. This powerful feature of the SHA-256 hash function makes it ideal for application within the Bitcoin network.

Block in andersbrownworth.com:-

- Block Number - 2

- Trans Record - Any Important Data you want to store

- Previous Block Key 0000acbdefxzancba

- Mining Key

Why 0's are required in the HASH?

- Its like game theory

These 'N' Number of zeros are required for Mining

- Mining is only a part of PUBLIC Blockchain
- So only for Public Blockchain, we need that concept of 'N' 0's in the beginning.

Types of Blockchain?

- **Public Blockchain - Ethereum, Bitcoin - Mining**
  A public blockchain is not governed by any industry or anyone it is been stored and maintained by Individuals
    --> It has Mining involved in it
    --> eg., Ethereum, and BitCoin

- **Private Blockchain - R3 Cord**
  This is a Blockchain type which been governed by a Private Company

- **Consortium Blockchain - Multi Chain, Hyperledger**

  It is governed by a Group of Private Stakeholders/ Orgs.

  It is a kind of Shared resources which is hosted by all the stakeholders, and they all store the data in it

  Hyperledger and Multichain

Advantages of Blockchain Technology:-
- It is a Decentralized System. Yes, most of the cases blockchain is a decentral system that means no central authority can take control of the ...
- The Blockchain is Transparent.
- The Blockchain is More Secure.
- Faster and Cost-Effective.
- It is Immutable.

Disadvantages of Blockchain Technology:-
- Blockchain is not a distributed computing system. Blockchain is a network that relies on nodes to function properly.
- Scalability Is An Issue. Blockchains are not scalable as their counterpart centralized system. If you have used the...
- Some Blockchain Solutions Consume Too Much Energy. Blockchain technology got introduced with Bitcoin. It uses the...
- Blockchain Cannot Go Back — Data is Immutable. Data immutability has always been one of the biggest...

Bitcoin:-

Bitcoin is a cryptocurrency. It is a decentralized digital currency without a central bank or single administrator that can be sent from user to user on the peer-to-peer bitcoin network without the need for intermediaries.

What makes Bitcoin so much Loveable?
- Works on Decentralized network
- Can send currency peer to peer
- No fiat currency needed
- No single point of failure
- More secure
- Less Prone to frauds & Tampering

Steps that are involved in mining?

1. Trans of BitCoin is happening in real-time between two peers

2. These Trxsn are grouped and sent in a Block

3. These Blocks are then sent to all the miners for finding a perfect nonce, which gets the required number of 0 in the beginning

4. The person finding the perfect nonce first will get rewarded with X number of New Virgin BitCoins

5. Those Virgin BitCoins are then out in the market for rotation

6. This cycle continues and then we have our bitcoins running and new BitCoins are generated like this.

A limited supply of bitcoins to increase demand:-

- The total number of bitcoins which will ever be available is 21 million bitcoins, last bitcoin will be mined sometime in the year 2140.

- But now we have 17 Million already mined to date

How this is possible?

- The " **Halving** " effect

- 50 BitCoins - 3rd Jan 2009 - 3rd Jan 2012

- 25 Btc - 4th Jan 2012 - 3rd Jan 2016

- 12.5 Btc - 4th Jan 2016 - 3rd Jan 2020

- 6.25 BTC - 4th Jan 2020 - 3rd Jan 2024

- 3.125 BTC - 4th Jan 2024 - 3rd Jan 2028

which means For every interval of time the Bitcoin value gets halved.

Smart Contract?

- A certain piece of code(contract) which is stored inside the Blockchain network, when certain conditions are met they are executed on their own