Blockchain Technology

Core Elective 3 – CS423

B. Tech. IV CSE 7th Sem

Lecture#3 and 4 (2 Aug 2022)

Dr. Dhiren Patel

Bitcoin

- Bitcoin enabled an innovative platform for peer to peer transfer of value without any central authority
- By implementing software programs for validation, verification, consensus in the blockchain
- Recording the transaction in an immutable distributed ledger
- Establishing trust among unknown peers
- BTC price on 17 March 2020 – USD 4.9 k
- BTC price mid-April 2021 – USD 64 k !!!!
- BTC price – USD 31.7 k (19 July 2021)
- BTC price – USD 22.7k (today)

21,075.30 USD

-18,413.40 (46.63%) ↓ past year

27 Jul, 3:59 am UTC · Disclaimer

| 1D | 5D | 1M | 6M | YTD | **1Y** | 5Y | Max |

64,976.60 | 10 Nov 2021

Dec 2021

May 2022

Bitcoin price – historical

BTC price – Fall 2021 lecture
(ATH – April 2021 USD 64k)

07/18/2020 to **07/18/2021**

Bitcoin (July 2020)!
(Fall 2020 first lecture)

08/05/2019 to **08/06/2020**

1h 12h 1d 1w 1m 3m 1y all

$11000

$10000

$9000

$8000

$7000

$6000

$5000

Oct   Jan   Apr   Jul

coindesk

Why Crypto price fluctuates?

- India Banknote Demonetization (2016)
- Donald Trump's election as President (2016)
- Elon Musk (Tesla BTC investment (Jan 2021), Doge meme coin tweet (Jan 2021))
- Colonial Pipeline Attack (May 2021) and Recovery of Ransom BTC by FBI
- China crack down on Mining Farms (June 2021)
- Mining as a business (abstract view)

Altcoins

- best-known cryptocurrency Bitcoin – BTC (max. supply 21 M)
- And a selected number of alternative cryptocurrencies known as "Altcoins" (coins that are an alternative to Bitcoin)
- Altcoins that are built using Bitcoin's original open-source protocol (e.g. Litecoin – LTC, max. supply 84 M)
- //The Litecoin Network aims to process a block every 2.5 minutes, rather than Bitcoin's 10 minutes. This allows Litecoin to confirm transactions much faster than Bitcoin.
- Altcoins that are not based on Bitcoin's open-source protocol, but that have their own protocol and distributed ledger. (e.g. Ethereum – ETH max. supply – unlimited!, Ripple – XRP max. supply 100 B)
- //**Ethereum** is a decentralized, open-source blockchain with smart contract functionality

Market Cap = Current Price x Circulating Supply (July 2021)

Market cap of BTC ~600 B USD

Circulating supply = 18,759,981 BTC

April 2021 – market cap ~ 1.2 Trillion USD

Why?

BTC - Store of Value – digital gold //Universal currency?

Market cap of Eth ~223 B USD

Ethereum Eth- Utility token

Market cap of BNB ~ 52 B USD

BNB – exchange token used for payment of fees (trading)

Market cap of UNI ~ 10 B USD

UNI – DeFi (landing protocol – governance token)

BAT – (Basic Attention Token)…. digital advertisement industry

CHIA token - XCH (Proofs of Space and Time - Storage as a Service)….

Why Crypto price fluctuates?

- El Salvador declaring BTC as a legal tender (Sept 2021)

- Wars (US force leaving Afghanistan (Aug 2021), Russian Invasion in Ukraine (Feb 2022)) ….

- Political resistance (old school) across the world ….

- Market movers (Eth2.0, DeFi, NFTs, Gaming and Metaverse, CBDC etc.)

Blockchain Technology
(domain, keywords and symbols)

- Cryptocurrency (coins, addresses, wallets and exchanges)
- Transactions, Blocks, Hash function, Public Key Cryptography
- Remittance, Payment system(?), Stable coins,
- Mining, Consensus, Burning, Governance, Fees
- Smart contracts
- Tokenization and Virtual assets
- Supply-chain, Value-chain, Circular economy
- Scalability (Main chain, Side chain, Para chains..)

BLOCKCHAIN

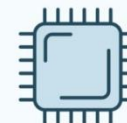|					
BITCOIN	BLOCKCHAIN	DISTRIBUTION	LEDGER	MINING	EXCHANGE
DATA ANALYTICS	CRYPTOGRAPHY	CHAIN	CONFIRMATION	TRANSACTION	MINER
MINING NETWORK	DIGITAL KEY	CLOUD MINING	SECURITY	CALCULATOR	GLOBAL NETWORKING
BITCOIN MOBILE	DIGITAL CURRENCIES	BLOCK REWARD	MINING	USER	INVESTMENT
WALLET	WHITE PAPER	BLOCK	PORTFOLIO	MINING POOL	PLATFORM

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Pre-test (scheduled at 11:30 AM)

- Google classroom
- Test Link
- Participation is important

Blockchain – visualization – hands on

- https://andersbrownworth.com/blockchain/distributed