

International Interdisciplinary Virtual Conference on 'Recent Advancements in Computer Science, Management and Information Technology' International Journal of Scientific Research in Computer Science, Engineering and Information Technology| ISSN : 2456-3307 (www.ijsrcseit.com)

Block Chain Technology and its application

Mrs. Kalatre Ujwala R.

At Post Lihakhedi Tq. Sillod, Dist: Chhatrapati Sambhajinagar(431112), Maharashtra, India

ABSTRACT

A block chain is pear to pear distributed legers technology which is an enabled, decentralized, encrypted distributed ledger technology, records of cryptocurrency, transaction verify, everyone owns info not stored in one entity, everyone have copy of data, access to all the transaction one entered not tampered.

Keywords: Decentralization, Transparency, Immutability, time saving, centralization, verification.

I. INTRODUCTION

Introduction of Block Chain:

Block chain was developed by a group of individuals under the concept of distributed computing has been around since 1990s, then 2009 Nakamoto developed bit-coin and introduced the notion of block chain to use decentralized and distributed ledger, the deployment of crypto currency in practical application related 2011-2012, Currency and digital payments 2012-2013, blockchain has emerged in various applications with further developments, 2017-2018.the goal of block chain is to allow digital information to be recorded and distributed, but not edited, in this way ,a blockchain is the foundation for immutable ledgers, or records of transactions that cannot be altered, deleted ,or destroyed.

This is why blockchains are also known as a distributed ledger technology (DLT),First proposed as a research project in 1991,the block chain concept predated its first widespread application in use: Bit coin ,in 2009.In the years since ,the use of blockchains has exploded via the creation of various crypto currencies, decentralized finance (DeFi) applications ,non fungible tokens (NFTs),and smart contracts. to make a decentralized, publicly accessible ledger for recording digital transactions.

Bit coin is the first and most prevalent crypto currency launched, in view of the block chain network, a chain of records stored in the from of blocks, which are typically controlled by no single authority makes it difficult or impossible to change, hack or cheat the system, a digital ledger of transactions.

A block chain network can track orders payments, accounts, and production and much more, members share a single view of the truth.



100

II. WORK OF BLOCK CHAIN

- 1. As each transaction occurs, it is recorded as a "Block of Data": The data block can record the record the information of you choice: who, what, when where, such as the temperature of food shipment.
- 2. Each block is connected to the ones before and after it: These blocks from a chain of data, the blocks confirm the exact time and sequence of transactions, and the blocks link securely together to prevent any block from being altered or a block being inserted between two existing blocks.

3. Transactions are together in an irreversible chain: a blockchain

Example:

- 1) A wants to send the money to B.
- **2)** The transaction is represented online as a 'block'.
- 3) The block is broadcast to every party in the network.
- 4) Those in the network approve the transaction is valid.
- 5) The block then can be added to the chain, which provides an indelible and transparent record of transaction.
- **6)** The money moves from A to B.

III. TYPES OF BLOCKCHAIN TECHNOLOGY

1) Public BlockChain:

These blockchains are completely open to following the idea of decentralization, they don't have any restrictions, anyone having a computer and internet can participate in the network.

2) Private BlockChain:

These blockchains are not as decentralized as the public blockchain only selected nodes can participate in the process making it more secure then the others.

3) Consortium BlockChain:

It is a creative approach that solves the needs of the organization .this blockchain validates the transaction and also initiates or receives transactions, it is also known as Federated blockchain.

4) Hybrid BlockChain:

It is the mixed content of the private and public blockchain, where some part is controlled by some organization and other makes are made visible as a public blockchain.

IV. APPLICATIONS OF BLOCKCHAIN TECHNOLOGY

- 1) Money Transfers
- 2) Financial Exchange
- 3) Lending
- 4) Insurance



- 5) Secure Personal Information
- 6) Voting
- 7) Real Estate
- 8) Virtual currency
- 9) Secure sharing of Medical Records
- 10) Supply chain and logistic monitoring
- 11) Original Content Creation
- 12) Payment and transfers
- 13) Health care
- 14) Real Estate
- 15) Bit coin
- 16) Internet of things

V. METHODOLOGY OF BLOCKCHAIN TECHNOLOGY

Blockchain technology is a way is a safe and secure for the financial transaction of virtual values. Like bit coins. For softy of transaction HASH codes plays important role.

This technology stores values digitally, which Enables peer to peer transactions to internet without interruption of any other third party.

For every transaction of the digital currency, there is need of private key, which is generated for every transaction, this is nothing but for squaring and indentifying ownership of digital currency.

Suppose, someone is buying a some digital currency like bitcoin, the transaction is processed, private key should match with starting of transaction. If this both key matched then only digital currency will be transferred, if not match then transaction will decline.

VI. ADVANTAGES OF BLOCKCHAIN TECHNOLOGY

- 1) **Open:** one of the major advantage of blockchain technology is that it is accessable to all means any one can become a participant in the contribution to blockchain technology.
- **2)** Verifiable: Blockchain technology is used to store information in a decentralized manner so everyone can verify the correctness of the information by using zero-knowledge.
- **3) Permanent:** Records or information which is store using blockchain technology is permanent means one needs not worry about losing the data,
- **4) Tighter Security:** Blockchain uses hashing techniques to store each transaction on a block that is connected to each other so it has tighter security.
- **5) Efficiency:** Blockchain removes any third party intervention between transactions and removes the mistakes making the system efficient and faster. Settlement is made easier and smooth.
- 6) Cost Reduction: As blockchain needs no third man it reduces the cost for the businesses and gives trust to the other partner.



VII. DISADVANTAGES OF BLOCKCHAIN TECHNOLOGY

- 1) **Scalability:** It is one of the biggest drawbacks of blockchain technology as it can not be scaled due to the fixed size of the block for storing information.
- **2) Energy Consuming:** For verifying any transactions a lot of energy is used so it becomes a problem according to the survey it is considered that 0.3 percent of the world's electricity had been used by 2018 in the verifications of transactions done using blockchain technology.
- **3) Time-Consuming:** To add the next block in the chain miners need to compute none values many times so this is a time consuming process and needs to be speed up to be used for industrial purposes.
- **4)** Legal Formalities: In some countries, the use of blockchain technology applications is banned like cryptocurrency due to some environmental issues.
- 5) Storage: Blockchain databases are stored on all the nodes of the networks creates an issues with the storage, increasing number of transactions will require more storage.

VIII. CONCLUSION OF BLOCKCHAIN TECHNOLOGY

Today, the world has found applications of blockchain technology in several industries, where the trust without the involvement of a cauterized authority is desired. So welcome to the world of blockchain.

Blockchain technology is only going to grow in the fields of business, finance, law, medicine, and real estate. Whether you're an experienced blockchain developer, or you're aspiring to brake into this exciting industry, enrolling in our blockchain certification training programme will help individuals with all levels of experience to learn blockchain developer techniques and strategies.

IX.REFERENCES

- [1]. https://en.wikipedia.org/wiki/Blockchain
- [2]. https://www.investopedia.com/terms/b/blockchain.asp
- [3]. https://www.pngegg.com/en/search?q=blockchain+technology
- [4]. Blockchain By Released January 2015 Publisher(s): O'Reilly Media, Inc. ISBN:9781491920497

