



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 6, Issue 3, March 2018

A Unique way to Secure the Digital Currency and Data: Blockchain Technology

Tadpatri Haseeb Shareef¹, Shaik Farhana², V. Chudaamani³, V. Sandhiya⁴

Dept. of C.S.E., GATES Institute of Technology, (Affiliated to JNTUA), Gooty, A.P, India. ¹

Dept. of C.S.E, GATES Institute of Technology, (Affiliated to JNTUA), Gooty, A.P, India. ²

Dept. of C.S.E, Bharath University, Chennai, Tamil Nadu, India. ³

Dept. of C.S.E., DhanaLakshmi College of Engg, (Affil to Anna University), Manimangalam, Tambaram,
Chennai, India⁴

ABSTRACT: This paper presents a Blockchain technology is a technique of securing data in which it contain a list of encrypted records, stored in the form of and interlinked with another block with hash code or cryptographic hash single blockchain contains and transaction data cryptographic hash and timestamp. Blockchain technology is a distributed ledger which contains transaction data will be accessed by a person in a network each transaction will take place in a particular network once the block is validated will not be erased by anyone in a network the updated transaction to all the peers so that no chance of modification done by any individual. As the blocks are connected with each other with the timestamp and information link which actually points to a previous block. Bitcoin and Ethereum are the two major platforms of blockchain Technology. This paper will tell you about how blockchain technology works, Secure the data future scope of usage areas of blockchain Technology and its importance. Mainly this is used in the financial sectors as well as non financial sectors.

KEYWORDS: Blockchain Technology, Cryptocurrencies.

I. INTRODUCTION

Blockchain Technology will allow us to make a transaction without third party involvement directly peer to peer communication is established in this type of Technology and copy of every transaction will be placed in the open ledger of a network. It is decentralised data structure in which it stores every transaction. Users should be aware of the transaction in the network.

PROBLEM FACING IN CURRENT DAYS

Now a days we are actually using cloud storage but the remote accessing of our personal data which was given to the third party normal is the date of centralized and stored in a single database from this there is a chance of manipulating the data on their own without knowing to the management authority. And also in the cloud the trusted party men swindle you that may leads to The Razing of your company. The hacker will easily get into the centralized database using SQL injection technique and steal and modify the data. Blockchain Technology will solve this issue completely and Secure our data from unauthorised usage.

HISTORY

And the great thing necessity is the mother of invention this leads to the blockchain technology invention on the digital currency and digital assets the researchers has been conducted the researches since 1991 and the finally succeeded in 2004 the concept of blockchain was documented by SANTOSHI NAKAMOTO in 2008 it was implemented for the first time in digital coin popularly known as Bitcoin in the year 2014 with this blockchain technology Bitcoin become



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 6, Issue 3, March 2018

first digital currency uninstalls the trusted authority the Automatic voting system has been conducted in Russia by the use of this technology international business machines (IBM) company has opened blockchain research innovative centre Singapore in July 2016 all the global industrialized groups are joined to create a global blockchain forum in the same year.

II. LITERATURE SURVEY

WHY TO USE BLOCKCHAIN TECHNOLOGY

With the blockchain technology the transaction will be done without any middleman transaction will be trusted transaction will be with transparency It also reduces the cost of transaction that can be done. For example if you want to send \$10 to the haseeb from the bank it charges \$1 as the transaction charges and also it takes time to do the transaction but in the blockchain technology send the accurate amount that we want to send to the other person and all the transaction will be done within seconds. No single point of failure will transactions. You can track the transaction in the real time no alterable will be done and it provides high security to our transaction.

WHY BLOCKCHAIN IS IMPORTANT

We all know that the sharing information can be done over the medium of internet you can share anything that present around you but when it comes to the money transfer we usually fallback and old fashioned centralised financial establishment like Bank as said earlier the blockchain technology consists of secure hash algorithm which cannot be cracked by and any individual.

WORKING OF BLOCKCHAIN TECHNOLOGY

If someone wants to request a transaction the required transaction is broadcast to a peer-to-peer network consists of a computers known as nodes this node should be validate in a network by a peer. It is impossible to add a record unless all parties in the network agrees. The genesis block is the starting block of blockchain Technology. Once the node is verified then it was added in the network and it will not be removed from there.

- It has no intrinsic value in that is not redeemable for another commodity such as gold
- It has no physical form and exist only in a network
- Its supply is not determined by a central bank and the network is the completely decentralized
- Once verified the transaction is combined with the another transaction to create a new block of data for ledger
- The new block is then added to the existing blockchain in a way that is permanent and unalterable and hence the transaction has been completed.

Hash: the digital signature or fingerprint of the data present in the block

Data : this is a transaction made by any peer

Previous hash : the hash that points to the next block.

III. HOW THE BLOCKCHAIN TECHNOLOGY PROVIDE SECURITY FOR THE DATA

As mentioned in the past block contains hash which is the fingerprint of the data and the previous hash this are interlinked with one another if any unauthorised person has been entered in the network and try to modify the data, then the hash will change automatically resultant that criminal will be caught . Being decentralised it was shown to everyone so that its securing our data. It's hard to the hackers to break the hash code of the blockchain technology.



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 6, Issue 3, March 2018

WHAT TYPE OF DATABASES CAN BE LINKED TO THE BLOCKCHAIN TECHNOLOGY

For this blockchain technology we can link any databases such as real estate and wallet bank and public sector and companies and many more databases, hence every transaction will be done with the help of our smart phone.

IV. AREAS OF USAGE

Being blockchain is an emerging Technology this can be used in wide areas. This is having in both financial and non financial sectors.

FINANCIAL SECTOR

Data storage: The blockchain is used mainly for the data security as hard to break the hash algorithm

Currency exchange : In an exchanging with the currency this technique will play a major role each and every single record is very important peer-to-peer transfer: It established a communication between sender and receiver so that there is no chance of middleman to enter into it.

Ride sharing: No problem take place while sharing the ride in cabs

Trading platform: Main intention of the blockchain technology is to provide a data safe in the marketing each and every transaction is essential to make the record.

Gaming: Every line of code is important to the developer in order to make his game successful what is blockchain technology helps a great.

NON-FINANCIAL SECTOR

Real estate: For the registering of land, house & plot every document is essential so with the help of blockchain technology we can track the all the registered documents in a particular area so that it is easy to buy land house and Plot for an individual.

Application development: Technology is most useful for the developers and the team in a way such that the Project leader and his team can easily communicate and share the code that they was developed and the every programmer is intended to be write the blocks of code every single line of code is important in the application development

Blockchain in IOT: With the help of this technology we can make the improvement in the internet of things as it is decentralized you can share the information to any peer in the network. **Example :** a women safety using iot and woman was in danger so that message can be sent to everyone in a network.

Smart contract: computer program that directly controls the transfer of digital currencies or assets between parties under certain conditions. It does this by taking in information as input, assigning value to that input through the rules set out in the contract, and executing the actions required by those contractual clauses – for example, determining whether an asset should go to one person or returned to the other person from whom the asset originated. These contracts are stored on blockchain technology, a decentralized ledger that also underpins bitcoin and other cryptocurrencies. Blockchain is ideal for storing smart contracts because of the technology's security and immutability.



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijirce.com

Vol. 6, Issue 3, March 2018

V. FUTURE SCOPE OF BLOCKCHAIN

Healthcare: Using this technology it is easy to track treatment of a patient of similar department how far is medicated.

Voting system: In an voting system each and every vote is important for an individual to be a winner so the data should not be centralized using this technology the data will be decentralized if anyone tries to manipulate will be easily identified and there is no chance of fake votes.

Cyber risk reduction: As it is hard to crack the hash algorithm produce the cyber risk reduction authorized can be used no record will be entered without the peer acceptance.

Criminal tracking: As it is a decentralized a network if any unknown entity has been entered and tries to change the data will be easily tracked by the all the members and hence the criminal will be easily tracked.

New industry opportunity: Being this technology is evolution of a new era of a data security this provides a lot of opportunity to the upcoming students to provide job opportunity and to establish new industries.

Transaction speed increased: As it provides direct communication between the sender and the receiver the transaction speed was increased as Bank stake 2 to 3 days to complete the transaction from India to New York with the help of this technology the transaction will be completed within seconds thus makes the transaction speed more.

VI. CONCLUSION

Blockchain has been given high expectations in recent years. The application of blockchain has already extended to ICT and network security fields from finance. As revolutionary new technology in the Internet era, blockchain is accelerating its combination with existing technology and constantly generating new business model. Blockchain technology is a revolution on the level of the invention of the Internet all seven years of existence bitcoin did not stop trying to hack the system, but they were unsuccessful. This paper could conclude that hope this technology may give a high data security in to databases from all the manipulations done and in future the scope of usage will be more in this technology.

VII. ACKNOWLEDGEMENT

The author would like to thank the Correspondent, **HOD of Computer Science & Engineering** for their motivation and constant encouragement. The author would like to specially thank Dr. K.P. Kaliyamurthie, Dean of CSE for his guidance and for critical review of this manuscript and for his valuable input and fruitful discussions in completing the work and the Faculty Members of Department of Computer Science & Engineering. Also, he takes privilege in extending gratitude to his **parents and family members** who rendered their support throughout this Research work.

REFERENCES

1. Ehsani and Farzam, "Blockchain in Finance: From Buzzword to Watchword," CoinDesk (News), 22 December, 2016.
2. Blockchain Adoption Moving Rapidly in Banking and Financial Markets: Some 65 Percent of Surveyed Banks Expect to be in Production in Three Years, <https://www-03.ibm.com/press/us/en/pressrelease/50617.wss>
3. D. Tapscott, A. Tapscott, "Blockchain Revolution: How the Technology behind Bitcoin is Changing Money, Business, and the World,"
4. J. Yli-Huumo, D. Ko, S. Choi, S. Park, K. Smolander, "Where Is Current Research on Blockchain Technology?- A Systematic Review," PLoS ONE, 2016, 11(10), pp: 1-27.
5. B. Liu, "Sentiment analysis and opinion mining," Synthesis Lectures on Human Language Technologies, vol. 5, no. 1, pp. 1-167, 2012.
6. J. Bollen, H. Mao, and A. Pepe, "Modeling public mood and emotion: Twitter sentiment and socio-economic phenomena." in ICWSM, 2011, pp. 17-21.
7. B. O'Connor, R. Balasubramanian, B. R. Routledge, and N. A. Smith, "From tweets to polls: Linking text sentiment to public opinion time series." in ICWSM, 2010, pp. 122-129.
8. M. Hu and B. Liu, "Mining and summarizing customer reviews," in KDD.ACM, 2004, pp. 168-177.
9. T. Chen, R. Xu, Y. He, Y. Xia, and X. Wang, "Learning user and product distributed representations using a sequence model for sentiment analysis," IEEE Computational Intelligence Magazine, vol. 11, no. 3, pp.34-44, 2016.



International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 6, Issue 3, March 2018

10. Y. Wu, S. Liu, K. Yan, M. Liu, and F. Wu, "Opinion flow: Visual analysis of opinion diffusion on social media," TVCG, vol. 20, no. 12, pp. 1763–1772, 2014.
11. E. Cambria, "Affective computing and sentiment analysis," IEEE Intelligent Systems, vol. 31, no. 2, pp. 102–107, 2016.
12. K.G.S. Venkatesan. Dr. V.Khanna, Dr. A.Chandrasekar, "Autonomous system for mesh network by using packet transmission & failure detection", Inter. Journal of Innovative Research in computer & comm. Engineering, Vol. 2, Issue 12, December -2014.
13. M. Brust, C. Ribeiro, and J. Filho, "Border effects in the simulation of ad hoc and sensor networks," in Computer Modelling and Simulation, 2009. UKSIM '09. 11th International Conference on, March 2009, PP. 180–185.
14. K.G.S. Venkatesan and M. Elamurugaselvam, "Design based object oriented Metrics to measure coupling & cohesion", International journal of Advanced & Innovative Research, Vol. 2, Issue 5, PP. 778 – 785, 2013.
15. M. Matsumoto and T. Nishimura, "Mersenne twister: A 623-dimensionally equidistributed uniform pseudo-random number generator," ACM Trans. Model. Comput. Simul., vol. 8, no. 1, PP. 3–30, Jan. 1998.
16. Sathish Raja and K.G.S. Venkatesan, "Email spam zombies scrutinizer in email sending network infrastructures", International journal of Scientific & Engineering Research, Vol. 4, Issue 4, PP. 366 – 373, April 2013.
17. G. Bianchi, "Performance analysis of the IEEE 802.11 distributed coordination function," IEEE J. Sel. Areas Commun., Vol. 18, No. 3, PP. 535–547, Mar. 2000.
18. K.G.S. Venkatesan, "Comparison of CDMA & GSM Mobile Technology", Middle-East Journal of Scientific Research, 13 (12), PP. 1590 – 1594, 2013.
19. P. Indira Priya, K.G.S.Venkatesan, "Finding the K-Edge connectivity in MANET using DLTRT, International Journal of Applied Engineering Research, Vol. 9, Issue 22, PP. 5898 – 5904, 2014.
20. J. P. Coon, C. P. Dettmann, and O. Georgiou, "Full connectivity: Corners, edges and faces," Journal of Statistical Physics, Vol. 147, No. 4, PP. 758– 778, 2012.
21. K.G.S. Venkatesan and M. Elamurugaselvam, "Using the conceptual cohesion of classes for fault prediction in object-oriented system", International journal of Advanced & Innovative Research, Vol. 2, Issue 4, pp. 75 – 80, April 2013.
22. Ms. J.Praveena, K.G.S.Venkatesan, "Advanced Auto Adaptive edge-detection algorithm for flame monitoring & fire image processing", International Journal of Applied Engineering Research, Vol. 9, Issue 22, PP. 5797 – 5802, 2014.
23. A. Eslami, M. Nekoui, H. Pishro-Nik, and F. Fekri, "Results on finite wireless sensor networks: Connectivity and coverage," ACM Trans. Sen. Netw., vol. 9, no. 4, pp. 51:1–51:22, Jul. 2013.
24. K.G.S. Venkatesan. Dr. V.Khanna, "Inclusion of flow management for Automatic & dynamic route discovery system by ARS", International Journal of Advanced Research in computer science & software Engg., Vol.2, Issue 12, PP. 1 – 9, December – 2012.
25. Needhu. C, K.G.S.Venkatesan, "A System for Retrieving Information directly from online social network user Link ", International Journal of Applied Engineering Research, Vol. 9, Issue 22, PP. 6023 – 6028, 2014.
26. M. Grottko, H. Sun, R. Fricks, and K. Trivedi, "Ten fallacies of availability and reliability analysis," in Service Availability, ser. Lecture Notes in Computer Science, T. Nanya, F. Maruyama, A. Pataricza, and M. Malek, Eds. Springer Berlin Heidelberg, 2008, vol. 5017, PP. 187–206.
27. K.G.S. Venkatesan, R. Resmi, R. Remya, "Anonymizing Geographic routing for preserving location privacy using unlinkability and unobservability", International Journal of Advanced Research in computer science & software Engg., Vol. 4, Issue 3, PP. 523 – 528, March – 2014.
28. Selvakumari. P, K.G.S.Venkatesan, "Vehicular communication using Fvmr Technique", International Journal of Applied Engineering Research, Vol. 9, Issue 22, PP. 6133 – 6139, 2014.
29. K.G.S. Venkatesan, G. Julin Leeya, G. Dayalin Leena, "Efficient colour image watermarking using factor Entrenching method", International Journal of Advanced Research in computer science & software Engg., Vol. 4, Issue 3, PP. 529 – 538, March – 2014.
30. L. A. Laranjeira and G. N. Rodrigues, "Extending the reliability of wireless sensor networks through informed periodic redeployment." in SERE. IEEE, 2012, pp. 167–176.
31. K.G.S. Venkatesan. Kausik Mondal, Abhishek Kumar, "Enhancement of social network security by Third party application", International Journal of Advanced Research in computer science & software Engg., Vol. 3, Issue 3, PP. 230 – 237, March – 2013.
32. Annapurna Vemparala, K.G.S. Venkatesan, "Routing Misbehavior detection in MANET'S using an ACK based scheme", International Journal of Advanced & Innovative Research, Vol. 2, Issue 5, PP. 261 – 268, 2013.
33. K.G.S. Venkatesan. Kishore, Mukthar Hussain, "SAT : A Security Architecture in wireless mesh networks", International Journal of Advanced Research in computer science & software Engg., Vol. 3, Issue 3, PP. 325 – 331, April – 2013.
34. Annapurna Vemparala, K.G.S. Venkatesan, "A Reputation based scheme for routing misbehavior detection in MANET'S ", International Journal of computer science & Management Research, Vol. 2, Issue 6, June - 2013.
35. K.G.S.Venkatesan, "Planning in FARS by dynamic multipath reconfiguration system failure recovery in wireless mesh network", International Journal of Innovative Research in computer & comm. Engineering, Vol. 2, Issue 8, August -2014.