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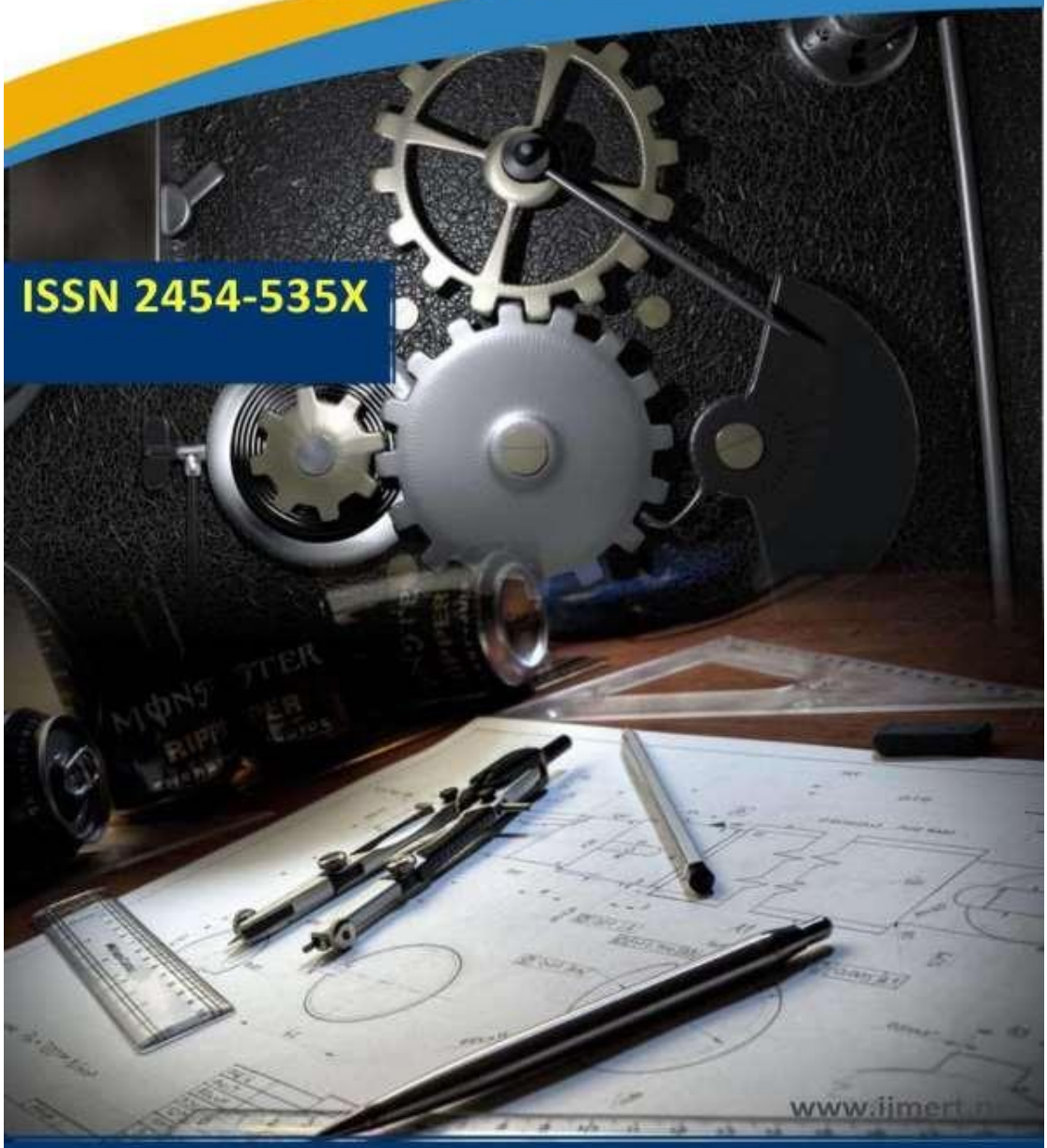

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BLOCK CHAIN A GAME CHANGER FOR SECURING IOT DATA

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ABSTRACT:

Blockchain and the Internet of Things (IoT) can be the keys of the advancements that will hugely affect the mechanical advertising organizations in the following 10 years. Web of Things (IoT) it will introductory stage that will very soon, it will impact our everyday things we use and the most on our way of life. The two noteworthy effect for InternetofThings(IoT) ,2,3,4]foundation will be on shrewd structures, keen urban areas, and so on. IOT will be use In a Smart City situation, similar to an IoT-Cloud system for the administration of sheets and assets dissipated over a geographic territory. Very soon IoT will grow in the zone for the digital assaults on homes and organizations by changing items that will be utilized to be disconnected into online frameworks. Existing security advances that are sufficiently not to manage this issue. Blockchain has developed as the conceivable answer for making increasingly secure IoT frameworks when an opportunity to come.

INTRODUCTION

By using Internet of Things (IOT), various devices are connected to a network. It is used in various intelligent applications including the embedded systems, software, sensors and artificial intelligence. Researchers said that the IOT devices that are connected will increases by 140% from 21 billion 2018 to 50 billion 2023. IOT has a large demand in the field of IT. Blockchain growing rapidly and is increasingly being used since it was first introduced by Bitcoin. Blockchain has been used in various fields such as healthcare, transportations etc. IOT devices are vulnerable to cyber-attacks. Security policies are also violated to make IOT devices inexpensive. Blockchain

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technology can be used to strengthen our IOT security. There are four ways for doing this, first providing secure communication, user authentication, legitimating IOT and configuration. This research main aim is to make strong IOT connection by using blockchain technology. By taking two devices we can conduct simulation with or without using Blockchain. Here we are using smart contract. Then the simulation attacks of two IOT devices are carried out then we check the results. Along with that, hash functions and cryptographic algorithms are also used. Blockchain innovation is currently getting excessively of consideration from programming designing and information researchers since it has been made. Blockchain[5-10] innovation in the IOT will change the web world. All things considered, it can change and upgrade the worldwide framework of the advancements which can associated with one another through web. The shrewd structures and Cities are perplexing biological systems where individuals, objects, structures, vehicles and common components will associate with one another in manners that are frequently difficult to break down and get it. Both the social and innovative issues consolidation and making urban communities into to fruitful application area for various sciences and advances use by the IOT. The idea of Smart City has turned out to be inescapable in multi-disciplinary research fields were running from design and urban-getting ready for data and correspondence advances (ICT) to oversee and sort out. In The city life. A Smart City framework can be seen as a numerous system empowered digital physical "things" giving detecting and offices, for example, traffic sensors, surveillance cameras, traffic lights just as residents' cell phones. Such immense measure of articles for the most part has a place with various proprietors and executive of the diverse areas

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SURVEY OF RESEARCH

A. Blockchain Technology as an Enabler of Service Systems: They expected that Blockchain alter the manner in which exchanges are performed, accordingly influencing a huge assortment of potential regions of use. While wants are high, authentic

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impact and benefit are so far cloudy. To undoubtedly overview its impact, the

B. first composed composition review of companion investigated articles is coordinated. As blockchain development is spun around a circulated framework, engaging composed exertion between different social events, the organization system is picked as unit examination to review its potential duty. We have identified a ton of characteristics that enable trust and decentralization, empowering the game plan and coordination of an organization structure. Blockchain Technology: A Literature Review As referenced, fields, for example, government, finances, and securities will be the absolute generally difficult. Blockchain innovation gives an open record, which is incredible for responsibility, however can be a bad dream for keeping data private. One of the greatest difficulties with the writing so far is that the vast majority of the exploration is as yet hypothetical, and not connected. The article on item detectability by Robert Anascavage and Nathan Davis was composed by architects who really assembled a framework that they have connected to genuine frameworks for following items for an amazing duration cycle, from maker to buyer. Robert and Nathan bring up that the framework can't be an independent arrangement. Blockchain innovation works incredible as a freely open record.

C. Blockchain: A Game Changer for Securing IoT Data In this paper, they outline of the blockchain innovation and its execution has been clarified base on talked about the framework of IoT which depends on Blockchain arrange and finally a model has been accommodated the security of web of things utilizing blockchain. Very soon IoT will grow the zone for the digital assaults on homes and organizations by changing articles that were utilized to be disconnected into on the web. D.Blockchain and the Internet of Things in the Industrial Sector The IoT mulls over constant catch of data from sensors. As the expense of sensors and actuators keeps falling, associations in the mechanical fragment will in all probability beaten cost deterrents in grasping IoT stages. Blockchain will

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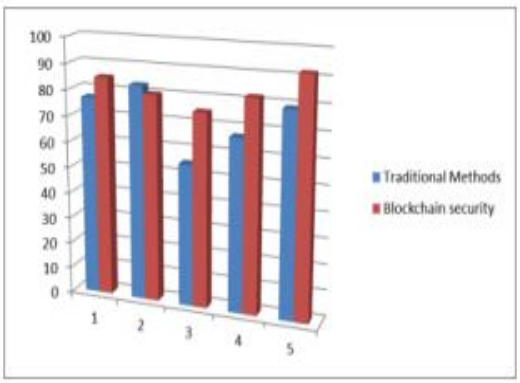
enable the sharing of key appropriate data got from the IoT using[26-29] a scattered, decentralized, shared record that is available to individuals in the business compose. The IoT thinks about ceaseless catch of data from sensors. As the expense of sensors and actuators keeps falling, associations in the mechanical region will likely annihilation cost impediments in accepting IoT stages. Blockchain will engage the sharing of key relevant data got from the IoT using an appropriated, decentralized, shared record that is available to individuals in the business orchestrate.

D. **METHODOLOGY**

Block chain is a kind of decentralized database, which keeps record of every transaction made on a network. Rather than having a traditional central database like that of banks or governments, it has a ledger distributed over a network of nodes. This network can be public, like the internet, which is accessible to any person in the world or it can be private, with accessibility given to only members of an organization. Block chains decentralized cryptographic model allows users to trust each other and make peer-to-peer transactions, eliminating the need of intermediaries.



Smart contract is one important element in Ethereum. A smart contract is an application that is applied to the blockchain network and executed automatically as part of transaction validation. Special creation on the transaction must be executed to implement a smart contract on Ethereum, which is a contract on the blockchain. Smart contracts on Ethereum are basically written in a highlevel language and compiled via

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the Ethereum Virtual Machine (EVM). Solidity is the most widely used programming language [6].

CONCLUSION

Latterly, the evolution of the Internet of Things has expedited but has been followed by security problems. Insecurity of communication is the one of the security problems that occurs between IoT devices. In this study, the design and implementation of the IoT system have been carried out without blockchain and using blockchain technology to compare the results. MQTT is used as communication protocol for The IoT system without blockchain technology. For the time being, Ethereum is used as the platform of the blockchain network for the IoT system with blockchain. Besides, smart contracts are also used to store and retrieve desired data from the blockchain network. Based on various examinations that have been carried out, it can be validated that the IoT system using blockchain technology can fix security problems that appear in communication between IoT devices, because it has a greater level of security than the IoT system without blockchain technology so that data integrity can be assured. This can be seen from the testing of attack simulations and observations of deluge effects carried out where the IoT system using blockchain technology has better security.

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