Computer Society of India

Institute Membership No:100859

Dr. SIVANTHI ADITANAR COLLEGE OF ENGINEERING

TIRUCHENDUR

DEPARTMENT OF COMPUTER SCIENCE *& ENGINEERING*

UG & PG

DEAR READER,

IT'S A GREAT PLEASURE TO PRESENT BEFORE YOU THE NEWSLETTER OF COMPUTER SOCIETY OF INDIA STUDENTS' CHAPTER WHICH HELPS THE ENTIRE CSI FRATERNITY TO KNOW THE CSETIVITIES OF THE STUDENTS' CHAPTER FROM TIME TO TIME.

Volume 1 No.1-2021

Computer Society of India Students' Chapter

PATRON & SBC : Dr.G.Wiselin Jiji, Principal

CSI Coordinators : Dr.R.Jensi, AP/CSE

Mrs.P.Chanthiya , AP/CSE

Secretary : Mr. T.Muthu Manikandan, IV CSE

Joint Secretary : Mr.R.Kaninsan Joshua,III CSE

Treasurer : Mr.D.Viknesh, IV CSE

S.NO	DATE	EVENT	CHIEF GUEST
1.	26.02.2021	Motivational talk on career	Dr.K.Manimala,Prof./EEE
2.	13.3,2021	C Operators Contest	Mrs.P.Chanthiya , AP/CSE
3.	29.3.2021	Online Technical Quiz	Dr.R.Jensi, AP/CSE
4.	31.3.2021	National E-conference on advanced trends in computer science and engineering.	Dr.G.Wiselin Jiji, Principal

Events

1. **Motivational talk on career** was conducted for UG Students of CSE on 26.02.2021. The session was handled by Dr,K,Manimala,Prof EEE.

2. **C Operators Contest** was organised for UG Students of CSE on 13.3.2021. Mrs.P.Chanthiya , AP/CSE judged the contest.

3. **Online Technical Quiz** was conducted for the Students of CSE on 29.3.2021. Dr.R.Jensi, AP/CSE judged the contest.

4. **National E-conference on advanced trends in computer science and engineering** was organised for UG Students of CSE on 31.3.2021. Dr.G.Wiselin Jiji, Principal was the chief guest for the conference.

Innovation at the edge

Submitted By Mr. T.Muthu Manikandan, IV CSE

Key tech trends

We estimate that 70 percent of companies will employ hybrid or multicloud management technologies, tools, and processes.[2] At the same time, 5G will deliver network speeds that are about ten times faster than current speeds on 4G LTE networks,[3] with expectations of speeds that are up to 100 times faster with 40 times faster latency.[4] By 2024, more than 50 percent of user touches will be augmented by AI-driven speech, written word, or computer-vision algorithms,[5] while global data creation is projected to grow to more than 180 zettabytes by 2025, up from 64.2 zettabytes in 2020.[6] The low-code development platform market's compound annual growth rate (CAGR) is projected at about 30 percent through 2030.[7]

Shift: Innovation develops around personal networks of experts at the porous edge of the organization and is supported by capabilities that scale the benefits across the business.

These technologies promise access to virtually unlimited compute power and massive data sets, as well as a huge leap in bandwidth at low cost, making it cheaper and easier to test, launch, and scale innovations quickly. The resulting acceleration in innovation will mean that companies can expect more disruptions from more sources. Centralized strategic and innovation functions cannot hope to keep pace on their own. Companies will need to be much more involved in networks outside their organizations to spot, invest in, and even acquire promising opportunities.

Corporate venture-capital (VC) funds with centralized teams have looked to find and fund innovation, but their track record has been spotty, often because the teams lack the requisite skills and are simply too far removed from the constantly evolving needs of individual business units. Instead, companies will need to figure out how to tap their front lines, particularly business domain experts and technologists, to enable them to act, in effect, as the business's VC arm. That's because the people who are writing code and building solutions are often well plugged into strong external networks in their fields and have the expertise to evaluate new developments. One pharma company, for example, taps its own expert researchers in various fields, such as gene expression, who know well the people outside the company who are leaders in the field.

While companies will need to create incentives and opportunities for engineers to build up and engage with their networks, the key focus must be on empowering teams so they can spend their allocated budget as they see fit—for example, experimenting and failing without penalty (within boundaries) and deciding on technologies to meet their goals (within prescribed guidelines).

The IT organization of the future can play an important role in building up a scaling capability to make that innovation work for the business, something that has traditionally been a challenge. Individual developers or small teams working fast don't tend to naturally think about how to scale an application. That issue is likely to be exacerbated as nontechnical users working in pockets across organizations use low-code/no-code (LC/NC) applications to design and build programs with point-and-click or pull-down-menu interfaces.

One pharma company has taken this idea to heart by giving local business units the flexibility to run with a nonstandard idea when it has proven to be better than what the company is already doing. In return for that flexibility, the business unit must commit to helping the rest of the organization use the new idea, and IT builds it into the company's standards.

In considering how this scaling capability might work, companies could, for example, assign advanced developers to "productize" applications by refactoring code so they can scale. IT leadership can provide tools and platforms, reusable-code libraries that are easily accessible, and flexible, standards-based architecture so that innovations can be scaled across the business more easily.

BLOCKCHAIN

Submitted By- J.Kavya II CSE

Origin of Blockchain Technology

The idea of the protocol of Blockchain at first was suggested by Cryptographer David Chaum in the year 1982. He proposed this idea in his dissertation work on "Computer Systems Established, Maintained, and Trusted by Mutually Suspicious Groups". Stuart Haber and W. Scott Stornetta were first to start working on the concept of blockchain in the year 1991. Later there were many attempts made to carry forward this concept.

The concept of Blockchain came into reality in the year 2008 and the credit for inventing this technology goes to Satoshi Nakamoto. He named this technology Block and Chain i.e. it was of two words in his original paper but later the technology was named Blockchain a single word in the year 2016. This technology came into existence after the advent of cryptocurrency called Bitcoin. Nakamoto wanted to create a Bitcoin ledger as a decentralized system that can easily be assessed by the people connected to the system.

Attributes of Blockchain

There are certain features that are specific to the Blockchain technology and are enlisted below:

- **A Decentralized Technology-** The records of the several transactions and information can be made in excel sheets on computers but there is a difference in the collection of information in Blockchain. The information stored in different blocks in a Blockchain is not only managed by a single person or authority. Every user in the network has a copy of the information on their computers and thus no modification can be made by anyone.
- **No Need for Third-Party-** There is no any need for a third party to be involved in any kind of interaction between two parties. The interaction and transactions can easily be done by using Blockchain technology.
- **Change of Data in the Blocks is Impossible-** Any kind of change in the data stored in the blocks is impossible. It is because the change in data of one block results in changing the hash of all subsequent blocks. Therefore, the change in the data stored in the blocks is nearly impossible.
- **Change Can Be Detected Easily-** The attempt to change information in the blocks can easily be detected by the other users in the network.

Classification of Blockchain Technology

The Blockchain technology network can be broadly be classified into four types of networks and that are stated below:

- **Public Blockchain-** The public Blockchain is a chain of information that has no restrictions for its access. Any user in the network needs no permission to access the history of Blockchain or carry out any kind of transaction. The information can easily be transferred and accessed by people all around the world on this type of network of Blockchain without any prior permission. Bitcoin Blockchain is an example of a public blockchain.

- **Private Blockchain-** This type of Blockchain network needs permission for accessing the information. This type of Blockchain network cannot be joined by anyone without the permission of the owner. The digital ledger in this type of Blockchain is shared among only the trusted members. This type of network is usually managed by different organizations and enterprises.
- **Hybrid Blockchain-** This type of Blockchain network refers to the mixture of the attributes of both centralized and decentralized blockchains. The working of the hybrid blockchain depends upon the percentage of centralization and decentralization.
- **Sidechains-** This is the network of blockchain that executes parallel to the primary blockchain. The side chains work independently from the primary blockchain.

Need of Blockchain

The advent of the internet and different technologies has resulted in several digital technologies in the world. Blockchain is a new and emerging concept in society but is becoming popular at a very fast pace. Earlier when there was no such technology the records and information were noted and maintained in the written format by the people. There was a maximum chance of errors when the data was noted manually. Moreover, the data and information could easily be edited easily that later gave rise to corruption.

There is a dire need for a technology like a blockchain that will ensure the security of the recorded data with full transparency. This will also help in gaining the trust of people and they can access the information in the blocks without any kind of fear of cheating. The copy of the transaction is available on all the computers linked with the blockchain network and this validates the security of the transactions. This technology is preferred by the banks for the process of money transfers, storing records, and different technical works.

Benefits of Blockchain

- The blockchain enables us in getting accurate data on which people can easily rely upon. The private records in blockchains will only be shared with the members of the network who have been granted access by us.
- The transactions that are recorded in the blocks cannot be altered by anybody and any change can easily be detected by the users in the network. This states that this technology is very secure.
- The use of blockchain technology helps in the removal of third-party involvement in transaction and record-keeping processes. There will be no extra charge incurred for the transactions by blockchain technology.
- The data and information can be saved without wasting unwanted time and effort thus blockchain is an efficient technology.

Limitations of Blockchain Technology

- The verification of transactions in blockchain requires huge power or electricity.
- The private key in the blockchain secures Bitcoins and thus it must be kept secret. The knowledge of the private key to the third party means revealing about the Bitcoins to them. Thus, it is necessary to protect these keys from becoming exposed to third parties. These keys if once lost cannot be backed up and money secured in them also gets lost.

- The records and transactions in the blockchains are distributed ledger i.e. it is present on every computer of every user in the network. Any transaction without verification of all the members cannot be entered into the blocks. The verification of the transaction from a large number of users requires time and thus it is a time taking process. This results in a lowering of the transaction speed.

How is Blockchain Essential for Operating Bitcoin?

Bitcoin is a digital currency and it is managed by the Blockchain. There is no authority that is meant for operating the crypto currencies. The transaction of every Bitcoin is stored in the blockchains. Further, the options of the digital currency are distributed on the computers in the network. This facilitates the operating of Bitcoins without the involvement of any kind of central authority. The data of the transactions of Bitcoins are stored in the blocks of the blockchain. This is a risk-free and secure option for operating Bitcoin.

Blockchain Wallet- This is a digital or E-wallet service that is provided by the blockchain company. It enables the users of the blockchain network to store and manage, transfer, and trade cryptocurrencies. The wallet s well provided with the security features that help in reducing the chances of online fraud and thefts.

Applications of Blockchain Technology

- **Development of Smart Contacts-** Different parties signs contract or agreement for the exchange of services and products in businesses. This happens mainly on paper that is mainly prone to different types of errors and frauds. The development of new technology called smart contacts in blockchains ease this work and help it in making it more secure. This technology performs everything exactly like that takes place on paper. The difference is only that it is digital and can be executed by the user. Moreover, there is no risk of editing data in the blockchain. Thus smart contact can be used for carrying out different financial agreements, storing property documents, crowdfunding, healthcare transactions, etc. Every detail from manufacturing to delivery in the process of exchange of products is maintained by the smart contract.
- **Voting and Elections-**The process of elections in the nation are carried out manually and thus there are maximum chances of occurrence of errors. The news of some frauds in the elections is very common during the elections in the nation. The introduction of smart contact if introduced in the system of voting and election might reduce the chances of the occurrence of such errors and frauds. This will also help in conducting free and fair elections in the nation.
- **Reduce the Chance of Cyber Crimes-** The chances of cybercrime are very common nowadays with the fast pace of digitalization. Many people every now and ten are becoming the victim of cyber frauds because while doing online transactions the details are stolen by the hackers. Blockchain technology helps in digitizing the documents that can facilitate the users in doing online transactions and interactions.
- **Prevent Copying of Original Contents-** The information and articles on different topics are available easily on the websites. This information is many times copied and used by people without the permission of the author of the article. Blockchain technology facilitates the authors to prevent the copyright of their written articles by registering their work online in smart contracts with full privacy. There will be no chances of editing or

copying the work of the authors and the authority of the content will be totally restricted in the hands of the owner.