

NEW HORIZON COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Workshop on Blockchain & CryptoCurrency by iSWET(G) Club

The department of Information Science and Engineering has conducted Expert talk on the topic **“Blockchain & Cryptocurrency”** for the 6th semester students on 8th FEBRUARY, 2020 under the supervision of ISE Head of the department, Dr.Anandhi R J at Chanakya Hall. The expert speaker, Mr. Shorupan Pirkaspathy, was invited to conduct the same. Mr. Pirkaspathy is the CEO of Nvest Group of Companies, Toronto (Canada) and CEO of Global Exchange Company. The need for blockchain and cryptocurrency with the real time applications was considered as the key area.

VARIOUS SESSIONS THROUGH THE PROGRAM:





Workshop on “Blockchain & Cryptocurrency” by Mr. Shorupan Pirkaspath

TOPICS COVERED:

- ✓ Introduction of Blockchain Developing & Cryptocurrency
- ✓ Challenges
- ✓ Approaches
- ✓ Tools

➤ Blockchain & Cryptocurrency Introduction:

A blockchain, originally block chain, is a growing list of records, called blocks, that are linked using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data (generally represented as a Merkle tree).

By design, a blockchain is resistant to modification of the data. It is "an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way". For use as a distributed ledger, a blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for inter-node communication and validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without alteration of all subsequent blocks, which requires consensus of the network majority. Although blockchain records are not unalterable, blockchains may be considered secure by design and exemplify a distributed computing system with high Byzantine fault tolerance. Decentralized consensus has therefore been claimed with a blockchain.

Blockchain was invented by a person (or group of people) using the name Satoshi Nakamoto in 2008 to serve as the public transaction ledger of the cryptocurrency bitcoin. The identity of Satoshi Nakamoto is unknown. The invention of the blockchain for bitcoin made it the first

digital currency to solve the double-spending problem without the need of a trusted authority or central server. The bitcoin design has inspired other applications, and blockchains that are readable by the public are widely used by cryptocurrencies. Blockchain is considered a type of payment rail. Private blockchains have been proposed for business use. Sources such as *Computerworld* called the marketing of such blockchains without a proper security model "snake oil".

➤ Challenges of Blockchain

- **SCALABILITY:** A major challenge of blockchain networks is related to the technical scalability of the network which can put a strain on the adoption process, especially for public blockchains. In contrast, legacy transaction networks are known for their ability to process thousands of transactions per second. Visa, for example, is capable of processing more than 2000 transactions per second. In contrast, the two largest blockchain networks, Bitcoin and Ethereum fall short when it comes to transaction speeds. The Bitcoin blockchain can process three to seven transactions per second, and Ethereum can handle approximately 20 transactions in a second. Compared to their centralized counterparts, this gap in performance deems the technology as non-viable for large scale adoption.
- **LACK OF INTEROPERABILITY:** Blockchain has become a rapidly expanding industry that has an abundance of players and solutions. The problem is that with so many different networks, the blockchain space is in a state of disarray due to a lack of standards that would allow different networks to communicate with each other. Currently, most of the blockchains present in the market work in silos, incapable of sending or pulling information from another blockchain. According to a Deloitte report, the lack of

interoperability “grants blockchain coders and developers freedom, and can give IT departments headaches as they discover that platforms can’t communicate without translation help.” The report highlights that on GitHub, over 6,500 projects are leveraging a variety of blockchain platforms with different protocols, coding languages, consensus mechanisms, and privacy measures. “Standardization could help enterprises collaborate on application development, validate proofs of concept, and share blockchain solutions as well as making it easier to integrate with existing systems,” as stated in the Deloitte study.

- LACK OF BLOCKCHAIN TALENT: Whenever a groundbreaking technology emerges, the developer community needs time and resources to accommodate the new demand. Blockchain is currently still in its infancy, as a result, there is an acute shortage of developers proficient in this technology. The fact that educational institutions have just recently begun to introduce blockchain-related courses, will alleviate the market demand but the results will become palpable only after students will finish their training.

A research conducted by Glassdoor indicates that the demand for blockchain-related jobs has increased by 200% between 2017 and 2018. Having a sufficient pool of qualified developers is a top industry concern. The gap in market demand and current availability of skilled developers is reflected by the higher than average salaries a company is willing to pay to a blockchain professional.

➤ Approaches

Blockchain technology can be integrated into multiple areas. The primary use of blockchains today is as a distributed ledger for cryptocurrencies, most notably bitcoin. There are a few

operational products maturing from proof of concept by late 2016. Businesses have been thus far reluctant to place blockchain at the core of the business structure.

- **CRYPTOCURRENCY:** Most cryptocurrencies use blockchain technology to record transactions. For example, the bitcoin network and Ethereum network are both based on blockchain. On 8 May 2018 Facebook confirmed that it would open a new blockchain group which would be headed by David Marcus, who previously was in charge of Messenger. Facebook's planned cryptocurrency platform, Libra, was formally announced on June 18, 2019.

- **FINANCIAL SERVICES:** Major portions of the financial industry are implementing distributed ledgers for use in banking, and according to a September 2016 IBM study, this is occurring faster than expected. Banks are interested in this technology because it has potential to speed up back office settlement systems. Banks such as UBS are opening new research labs dedicated to blockchain technology in order to explore how blockchain can be used in financial services to increase efficiency and reduce costs. Berenberg, a German bank, believes that blockchain is an "overhyped technology" that has had a large number of "proofs of concept", but still has major challenges, and very few success stories. The blockchain has also given rise to Initial Coin Offerings (ICOs) as well as a new category of digital asset called Security Token Offerings (STOs), also sometimes referred to as Digital Security Offerings (DSOs). STO/DSOs may be conducted privately or on a public, regulated stock exchange and are used to tokenize traditional assets such as company shares as well as more innovative ones like intellectual property, real estate, art, or individual products. A

number of companies are active in this space providing services for compliant tokenization, private STOs, and public STOs.

- There are a number of efforts and industry organizations working to employ blockchains in supply chain logistics and supply chain management. The Blockchain in Transport Alliance (BiTA) works to develop open standards for supply chains. Everledger is one of the inaugural clients of IBM's blockchain-based tracking service. Walmart and IBM are running a trial to use a blockchain-backed system for supply chain monitoring — all nodes of the blockchain are administered by Walmart and are located on the IBM cloud. Hyperledger Grid develops open components for blockchain supply chain solution

➤ TOOLS

1. Solidity

Solidity is, undoubtedly, one of the most popular languages used by Blockchain Developers. Influenced by C++, Python, and JavaScript, it was designed to target the Ethereum Virtual Machine(EVM). Solidity is statically typed, supports inheritance, libraries, and complex user-defined types.

Solidity supports the OOP paradigm and is most commonly used for writing smart contracts. With Solidity, Blockchain Developers can write applications that can execute self-enforcing business logic embodied in smart contracts, thereby leaving a non-repudiable, and authoritative record of transactions. This comes in handy for creating contracts for voting, crowdfunding, multi-signature wallets, and blind auctions.

2. Geth

Geth is an Ethereum node implementation built using the Go programming language. It is available in the three interfaces, including JSON-RPC server, command-line, and interactive

console. Geth can be leveraged for Blockchain development on all three major operating systems – Windows, Mac, and Linux.

Geth is used for a host of different tasks on the Ethereum Blockchain, such as transferring tokens, mining ether tokens, creating smart contracts, and to explore block history. After installing Geth, you can either connect to an existing Blockchain or create your own. The good thing is that Geth simplifies things by automatically connecting to the Ethereum main net.

The outcome of this program to the students provided good knowledge about Blockchain & Cryptocurrency.

List of Participants

USN	NAME
1NH17IS001	JAMUNA.A
1NH17IS002	ABHINAV ANAND
1NH17IS004	ADITYA KOKANAY
1NH17IS005	AISWARYA V KUMAR
1NH17IS006	AKASH.K.R
1NH17IS007	AKEPATI SASSANK GOPAL REDDY
1NH17IS008	AKHILA S
1NH17IS009	AKSHAY S PRATHAP
1NH17IS011	PAVEL ANUP
1NH17IS012	ANEESH MOHAN KUMAR
1NH17IS013	ANITHA.B
1NH17IS015	ANUSHA K
1NH17IS016	APURBA BHATTACHARJEE
1NH17IS017	AYUSH ANAND SAHU
1NH17IS018	AYUSH SHARMA
1NH17IS019	BHOOMIKA K C
1NH17IS020	BHUMIKA.V
1NH17IS021	BISHAL KUMAR SAH
1NH17IS022	BRUNDA S G
1NH17IS023	HARSHA VARDHAN.C.R
1NH17IS026	CHETAN YG
1NH17IS027	CHINMAYA KUMAR NAYAK
1NH17IS028	DARSHAN CHANDRA SHEKAR SHETTY
1NH17IS029	DEEPAK KUMAR SAH
1NH17IS030	DEEPTHI P
1NH17IS031	DHANUSH R

1NH17IS032	DHARANI
1NH17IS034	DISHA SINGH
1NH17IS035	DIVYA SHREE M
1NH17IS036	EDWIN JOSHUA JOHN
1NH17IS038	GIRISH R
1NH17IS039	HAMSA P O
1NH17IS040	HARINI V N
1NH17IS042	HELEN HEPHZIBAH. D
1NH17IS043	HIMANSHU BHATT
1NH17IS044	HITESH SUHAS
1NH17IS045	JOICY CASTILINO
1NH17IS046	K N BHANU PRIYA
1NH17IS047	KAKI RAVI TEJA
1NH17IS048	KIRTI DEVI
1NH17IS049	KSHITIJ RAJ
1NH17IS050	KUSHALA R
1NH17IS051	MALAVIKA N
1NH17IS052	MANOJ R
1NH17IS053	MERVIN SHIBU GEORGE
1NH17IS055	MOHAMMED OWEZ
1NH17IS056	MONISHA K
1NH17IS057	N MANVITHA REDDY
1NH17IS059	NETHAN SHAIK
1NH17IS060	N G DIVYA
1NH17IS061	NIRANJAN YADAV
1NH17IS062	NIVEDHA S
1NH17IS063	P KUMAR SATEESH
1NH17IS064	P VISHNUVARDHAN REDDY
1NH17IS067	POOJA M.SAJJAN
1NH17IS068	POOJA S SINGH
1NH17IS069	PRAJWAL G
1NH17IS070	PRANOY ROY
1NH17IS071	PRASANNA BHAT
1NH17IS072	PREETHI S
1NH17IS073	PURAB SHREENIWAS. A
1NH17IS075	R RANJITHA
1NH17IS076	R S SATHVIK REDDY
1NH17IS077	RAAHUL NARAYANA REDDY
1NH17IS078	RACHANA M S
1NH17IS079	RAHUL S BEELUR
1NH17IS080	RAKSHITHA N
1NH17IS081	RISHANK SHARMA
1NH17IS082	ROSHINI P
1NH17IS083	RUSHIKA BALI

1NH17IS084	S KARTHIK
1NH17IS085	S UMA MAHESHWARI
1NH17IS087	SAGAR KHADKA
1NH17IS088	SAHANA K M
1NH17IS089	SAHANA N REDDY
1NH17IS090	SANDEEP P K
1NH17IS091	SANJANA S
1NH17IS092	SATHWIK S SHETTY
1NH17IS093	SAURAV NAMBIAR
1NH17IS094	SHAILESH PM
1NH17IS095	SHALINI R S
1NH17IS096	SHAMI VISHWANATH KATARAKI
1NH17IS097	SHARMISTHA CHITRANSH
1NH17IS098	SHIJO YOHANNAN
1NH17IS099	SHOPHY TYAGI
1NH17IS100	SHRIVATSA HEGDE
1NH17IS101	SIMRAN FATHIMA
1NH17IS102	SIRISHA M
1NH17IS103	SNEHA.B.K
1NH17IS104	SNEHA M
1NH17IS105	SOUJANYA.S
1NH17IS106	SOWJANYA C V
1NH17IS107	SRINIVAS M
1NH17IS108	SRIVATSA R V
1NH17IS109	SUDEEP
1NH17IS110	SUHAS SRINIVAS
1NH17IS111	SUJITH RAMPRASAD TELLAKULA
1NH17IS112	SUMANTH REDDY R
1NH17IS113	SUSHANT CHAUDHARY
1NH17IS114	SUSHMITHA E
1NH17IS115	SWASTI
1NH17IS116	TARLAPALLI PRANEETH VAMSHI
1NH17IS117	TARUN SHARMA
1NH17IS118	TEJASWINI S D
1NH17IS119	THAKUR.KIRAN.SINGH
1NH17IS121	UDAY M R
1NH17IS122	UJWAL.P.B
1NH17IS123	UTTAM GOWDA H G
1NH17IS124	VAISHNAVI.R
1NH17IS125	V VARDHINI
1NH17IS126	VARNA MURALI
1NH18IS400	ANEJA S POPALE

