



RAJEEV INSTITUTE OF TECHNOLOGY

HASSAN- 573 201, KARNATAKA

(Affiliated to VTU, Belagavi., Approved by AICTE, New Delhi.)

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING



Date: 02-03-2023

To
The Principal,
RIT, Hassan

Dear Sir,

Subject: Requesting permission to conduct FDP on “Blockchain Technology”

With respect to above subject, we would like to request your permission to conduct Faculty Development Program on “Blockchain Technology” from 9-3-2023 to 23-3-2023. The program is conducted by CDAC, Hyderabad. The targeted participants are faculty members of our college from the department of CSE, ISE, ECE and EEE. Kindly do needful.

Thanking you,

Permitted to conduct

Onhd
02/03/2023

Yours faithfully

Arjun B C
2/3/23

Head of the Department
Dept. of Information Science & Engg.
Rajeev Institute of Techno!
HASSAN-573201, Karnataka, India



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RAJEEV INSTITUTE OF TECHNOLOGY

DEPARTMENT OF CSE AND ISE

in Association with

CDAC & National Institute of Electronics
& Information Technology, Kolkata

Seven days FDP - Hands on Training on

Blockchain Technology



Start Date: 09.03.2023

End Date: 17.03.2023

Mode of Training: Online



MINISTRY OF
ELECTRONICS &
INFORMATION TECHNOLOGY
GOVERNMENT OF INDIA

NASSCOM

futureskills
— prime

A MeitY - NASSCOM Digital Skilling Initiative



web: rithassan.ac.in



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Blockchain Technology

Session - ToT Workshop

Program Schedule

Start Date: 09.03.2023, End Date: 23.03.2023 (Updated),

Mode of Training: Online, Infrastructure Requirement: Desktop/Laptop with Internet

Sl No	Day	Date	11:00 AM – 01:00 PM	Faculty name	2:00 PM - 4:00PM	Faculty	04:000 PM - 6:00PM	Faculty
1	THURSDAY	09-03-23	Blockchain – The Basics & Applications	KK	Linux Fundamentals and Dockers Platform	KP		
2	FRIDAY	10-03-23	Blockchain – The Basics & Applications	KK	Blockchain – The Basics & Applications	KK	Hyperledger -Fabric	DB
3	MONDAY	13-03-23	Blockchain – The Basics & Applications	KK	Ethereum and Its Applications	RMV	Hyperledger -Fabric	DB
4	TUESDAY	14-03-23	Ethereum and Its Applications	RMV	Hyperledger-Fabric	DB	Linux Fundamentals and Dockers Platform	KP
5	WEDNESDAY	15-03-23	Hyperledger -Fabric	DB	Node.js	SS	MongoDB	KP
6	THURSDAY	23-03-23	Ethereum and Its Applications	RMV	Hyperledger-Fabric	DB	Mongo DB	KP
7	FRIDAY	24-03-23	Ethereum and Its Applications	RMV	Node.js	SS	Assignment/ Teaching Effectiveness Evaluation/ Discussion	
8	WEDNESDAY	29-03-23	Final MCQ Exam					



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REPORT ON
7 DAYS Online FDP ON
“BLOCKCHAIN TECHNOLOGY”

From 09-Mar-2023 to 17-Mar-2023

Organized by

Department of Information Science and Engineering

Rajeev Institute of Technology, Hassan

In association with



CDAC – Hyderabad

Meeting Name: Blockchain Technology-ToT Batch 4

Meeting Dates and Time: Mar 9, 2023 to Mar 17, 2023 from 10:00 am to 6:00 pm

Meeting link: <https://meet.jit.si/ToT-BlockchainTechnology-09-03-2023>

The recurrent meeting link used for attending the online sessions from Mar 09 to Mar 17, 2023.

Resource Person & Training Coordinator

FutureSkills PRIME-Blockchain Technology listed below session wise

csfs@cdac.in or call us at 9100682644



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Course Objectives

- Objective of the course is to build expertise in analyzing the feasibility of enabling Blockchain in their organization/department applications.
- Overview of Blockchain Technology, architecture and other required background will be discussed in detail during the course.
- It also covers Cryptography essentials and how these are implemented in Blockchain Platforms.
- Course includes Hands-on sessions on Ethereum Blockchain platform, Hyperledger Fabric 2.0, MongoDB, Node Js.

Course Highlights

- Insights on Blockchain applications.
- Sessions delivered by Expert members from NIELIT Kolkata.
- Practical exposure to popular Blockchain platforms:
 - Ethereum
 - Hyperledger
 - MongoDB
 - Node Js

Course Benefits

Blockchain is the most Emerging Technology in the decentralized information system. It is the distributed ledger and shared ledger Technology used by multi parties to establish trust between each other. It enables

- i. Trust in data/ Asset transfers
- ii. Immutable Transactions logs for auditing purposes and
- iii. Authentication & Authorization.

It improves the transaction networks such as Government, Supply Chain, Banking, Healthcare, etc. which makes the process more feasible for trading in the digital world reliable and secure. Blockchain Technology also enables a new way of development and enhance the applications across a network of participants.



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Report on formal function

Rajeev Institute of Technology, Hassan, organized 7 days workshop on “BLOCKCHAIN TECHNOLOGY” in association with CDAC-Hyderabad, for faculties of VTU affiliated colleges from Rajeev Institute of Technology, Hassan, from 09-03-23 to 23-03-23.

The **Training of Trainers (TOT)** workshop started at 10:00 AM on 09-03-2023 with greetings and inviting the dignitaries and trainers presented by Dr Arjun B C, Associate professor and Head, Department of ISE, RIT, Hassan.

The TOT workshop sessions started at 11.00 AM as per schedule.

Session wise Summary

Day 1- Session 1 (11.00 am to 1.00 pm): Blockchain – The Basics & Applications

The resource person introduced the Blockchain. He started the session by briefing the history of Blockchain Technology. He explained the workflow of traditional financial system, the concept of centralized, decentralized and distributed networks, basic concept of Blockchain, the session was ended with the objectives of Permission less and Permissioned model of Blockchain.

Day 1- Session 2 (2.00 pm to 4.00 pm): Linux Fundamentals and Dockers Platform

The resource person introduced the Linux Fundamentals. He started the session with the installation process of oracle VM virtual Box, Ubuntu installation, Network setup. Expalined about File structure, Linux architecture and the session ended with the basic commands.

Day 2- Session 1 (11.00 am to 01.00 pm): Blockchain – The Basics & Applications

In continuation with the session1 of day 1, he explained about hash function, Cryptographic hash function.

He covered:

- a. Cryptography & its Applications



b. Digital signature, Digital signature in blockchain.

Day 2- Session 2 (2.00 pm to 04.00 pm): Blockchain – The Basics & Applications

This session covered the topics Mining, mempool & mining statistics, Merkle tree, Merkle path and finally discussed why Merkle tree is used in blockchain.

Day 2- Session 3(4.00 pm to 6.00pm): Hyperledger-Fabric

The session was cancelled due to unavailability of resource person.

Day 3- Session 1 (11.00 am to 1.00 pm): Blockchain – The Basics & Applications

In this session topics listed below were discussed

- a. Block , Metadata of blockheader, Block structure, Block header
- b. Coin base transaction
- c. Cryptocurrency

Blockchain demo was given

Day 3- Session 2 (2.00 pm to 04.00 pm): Ethereum and Its Applications

In this session understanding the basic concepts of Ethereum was explained. The resource person covered the topics related to Ethereum like definition and about Ethereum block chain in detail.

Day 3- Session 3(4.00 pm to 6.00pm): Hyperledger-Fabric

In this session the resource person explains about Consensus, transactions, bitcoins and about hyperledgers in detail. She takes an example and explains in detail the ledger and its usage. Also discussed about transaction log header.

Day 4- Session 1 (11.00 am to 1.00 pm), Day 6- Session 1(11am to 1pm), Day 7 – Session 1 (11 am to 1 pm):Ethereum & its applications

In these sessions, the resource person elaborated about Ethereum application where the metamask installation process is discussed and the secret recovery phrase is demonstrated. ETH transactions were also demonstrated and practical sessions were done.

Day 4- Session 2 (2.00 pm to 4.00 pm): Hyperledger- Fabric

Practical session was conducted by resource person, hands-on training was done along with



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her as per her directions by sharing our screen and discussing issues that we are facing while doing practical sessions.

Day 4- Session 3 (4.00pm to 6.00pm): Linux Fundamentals & dockers platform

The Resource person of this session discuss Dockers for windows in detail, docker for windows installs docker engine, docker compose and docker machine, they are the major components. Installation of the components are demonstrated in virtual environment. Define docker, docker registry, dockers with cloud were also discussed.

Linux commands were demonstrated at the end of the session.

Day 5- Session 1 (11.00am to 1.00pm), Day 6- Session 2 (2pm to 4pm): Hyperledger-Fabric

It is the continuation of Day 4 practical session, Hands on training was done on Hyperledger, creation of account, transactions were made.

Day 5- Session 2(2.00pm t 4.00pm), Day 7- Session 2(2pm to 4 pm): Node.js

In these sessions the resource person explained about Node.js that Node.js is an open-source and cross-platform JavaScript runtime environment. It is a popular tool for almost any kind of project. Node.js runs the V8 JavaScript engine, the core of Google Chrome, outside of the browser. This allows Node.js to be very performant.

A Node.js app runs in a single process, without creating a new thread for every request. Node.js provides a set of asynchronous I/O primitives in its standard library that prevent JavaScript code from blocking and generally, libraries in Node.js are written using non-blocking paradigms, making blocking behavior the exception rather than the norm.

In continuation, the installation and hands on sessions were carried out.

Day 5- Session 3 (4.00pm to 6.00pm), Day 6- Session 3(4pm to 6pm): Mongo DB

In these sessions, Mongo DB database was explained, Hands on session carried out.

Summary of valedictory function

As the valedictory function began, the attendees shared their feedback on stage. Organizers shared the online feedback link with attendees.



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Dr Arjun B C, HOD & Associate Professor, Department of Information Science & Engineering, RIT, Hassan, concluded the workshop by delivering a vote of thanks and thanked all the faculties and management of Rajeev Institute of Technology, Hassan for organizing this workshop. He also thanked all the resource persons for sharing their valuable insights and all the faculties for attending this workshop.

Outcome of the workshop

This workshop was very informative, and also a hands-on virtual lab session and software implementation related to blockchain were practised and executed in the Linux virtual laboratory. At the end of this training, all faculties are confident in blockchain concepts.

CDAC-Hyderabad conducted a TOT- certification exam for all the participants, and all the faculties successfully cleared the exam and were certified as trainers.

Overall CDAC –Hyderabad team provided valuable knowledge regarding the Blockchain Technology TOT program and upgraded faculty skills in Technology.

This 7 days TOT workshop on “BLOCKCHAIN TECHNOLOGY- CDAC HYDERABAD” was a grand success and provided the attendees with great insight into blockchain and using the virtual lab, and also congratulations to all the faculties who were certified as Trainers for Blockchain Technology.





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SNAPSORTS

Editing Ethernet connection 1

Connection name: eth0

General Ethernet 802.1x Security DCB IPv4 Settings IPv6 Settings

Method: Automatic (DHCP)

Addresses

Address	Netmask	Gateway	Add	Delete

Additional DNS servers:

Additional search domains:

DHCP client ID:

Require IPv4 addressing for this connection to complete

Routes...

Cancel Save

KP's screen

Blockchain as a tree

T1 T2 T3 T4 T5 T6

Block 1 → Block 2 → Block 3 → Block 6

Block 2 → Block 4 → Block 5 → Block 7 → Block 8 → Block 12

Block 7 → Block 9 → Block 10

Block 9 → Block 11

- The blocks which are not part of the longest chain

✓ Orphan Block
✓ Always accept longest chain

Krishnakali's screen

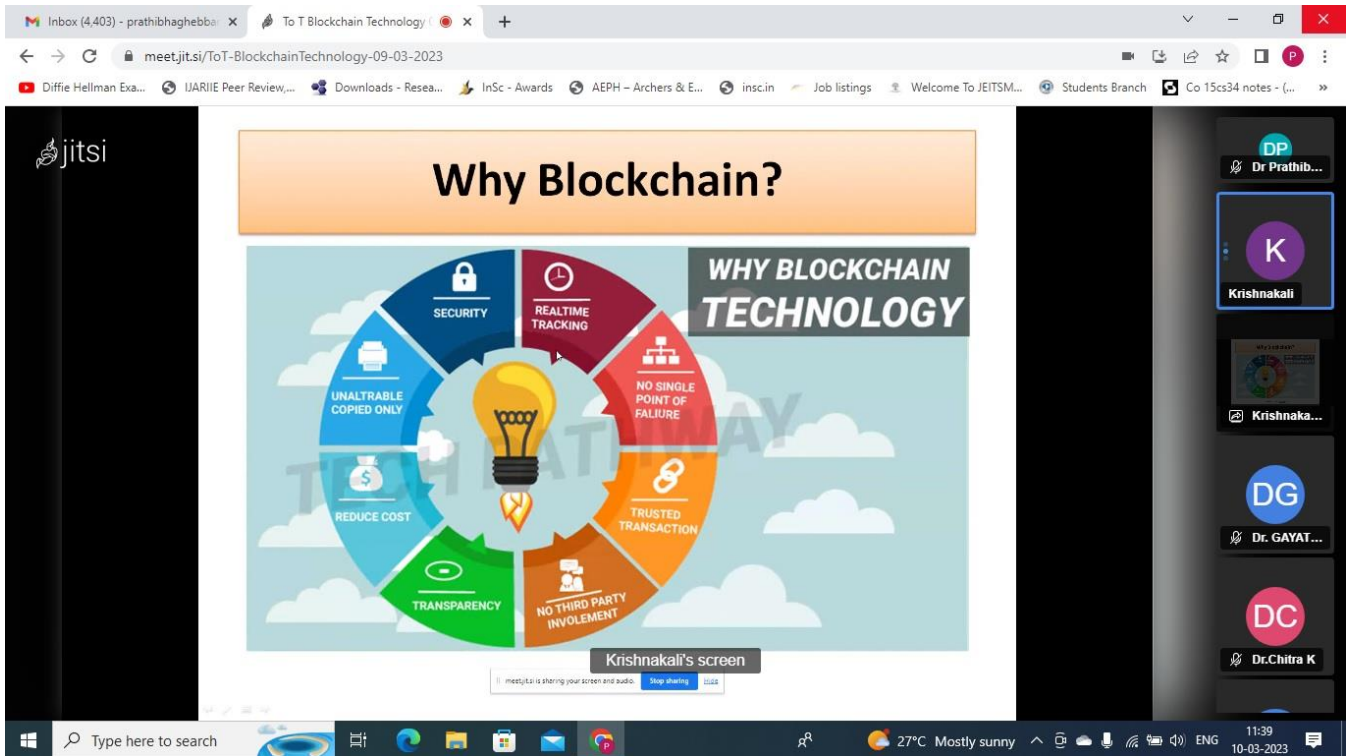
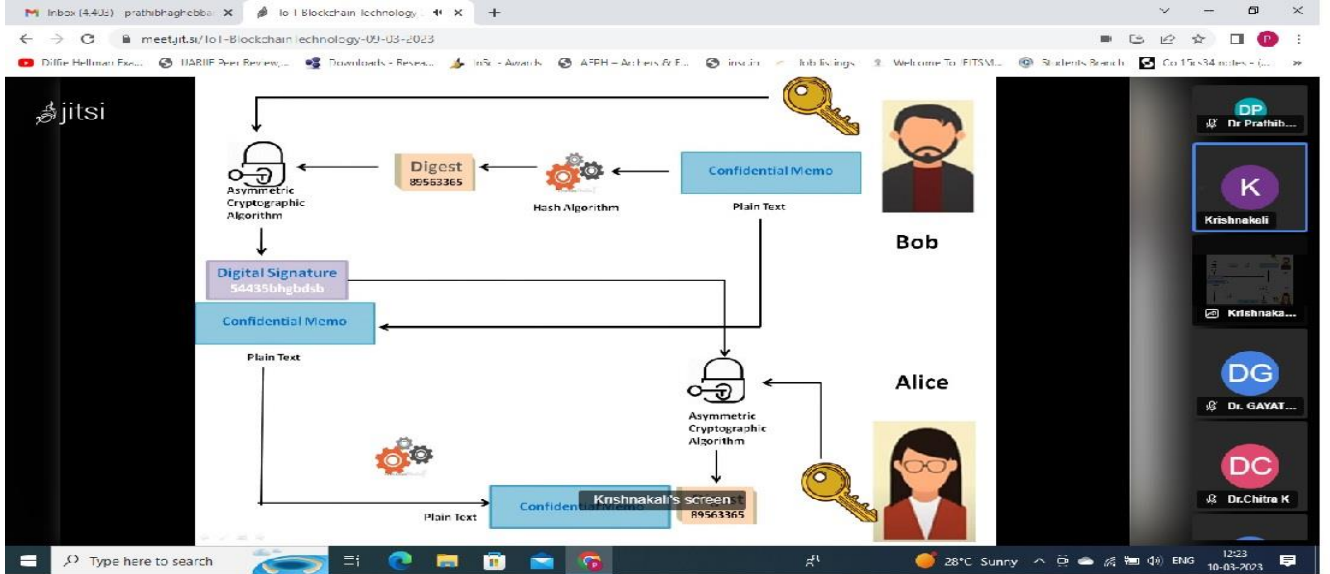


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Attendees

Faculties of VTU Affiliated College from Rajeev Institute of Technology, Hassan.

The below-listed faculties participated in Blockchain Technology Program.

1. Dr Prathibha G	ISE
2. Umme Sadiya	CSE
3. Sahana G C	CSE
4. Roopesh A R	CSE
5. Gagana Deepa J	ISE
6. Rekha M G	ECE
7. Ravi L S	ECE
8. Lokeshwari H S	ECE
9. Jayaram M V	EEE
10. Rashmi N	EEE
11. Sandhya P	EEE



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No.: BC/2023/TrT/NIELITKolkata/Training of Trainers/2/2/3
MAY 12, 2023

Certificate of Completion

It is certified that
Dr. Prathibha G
Of
Rajeev Institute of Technology
has successfully completed the Training of Trainers
on
Blockchain Technology
Under 'Future Skills PRIME' Program
held from 09th March 2023 to 24th March 2023


Chief Investigator
NIELIT Kolkata
Lead RC


Executive Director
NIELIT Kolkata



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Feedback of the Participants for FDP on “Blockchain Technology”

Full Name	Department	The FDP was valuable & added to my understanding of knowledge about the topic	The content of the FDP met the expectations of the participants	Rate the speaker presentation skill	How would you rate overall experience of this FDP?	How likely are you to recommend this FDP?
Dr Prathibha G	ISE	4	5	3	4	3
Umme Sadiya	CSE	5	4	4	4	5
Sahana G C	CSE	4	5	3	4	3
Roopesh A R	CSE	5	4	4	4	5
Gagana Deepa J	ISE	4	5	3	4	4
Rekha M G	ECE	5	5	3	4	3
Ravi L S	ECE	4	4	4	4	4
Lokeshwari H S	ECE	5	4	4	4	5
Jayaram M V	EEE	5	5	5	4	3
Rashmi N	EEE	4	4	4	4	4
Sandhya P	EEE	4	5	3	4	4