SIES Graduate School of Technology
Department of Computer Engineering
Organizing
Student Development Program and Internship
Blockchain Technology
June 15-20, 2020, 10.00 AM to 5.00 PM

The widespread popularity of digital crypt-currencies has led the foundation of Blockchain, which is fundamentally a public digital ledger to share information in a trustworthy and secure way. The concept and applications of Blockchain have now spread from crypto-currencies to various other domains, including business process management, smart contracts, IoT and so on. This course is a covers both the conceptual as well as application aspects of Blockchain. This includes the fundamental design and architectural primitives of Blockchain, the system and the security aspects, along with various tools to implement the Blockchain for various application domains.

Course Objectives:

- Learn about the concept of Blockchain and crypto-currencies.
- Understand the importance of Blockchain technology in Business
- Use of various tools to implement the Blockchain.

Course Outcome:
After This Course the students should be able to:
- Identify the problem of security associated with the third party inclusion in transaction.
- Identifying the need for Blockchain Technology in various use cases.
- Demonstrate the various tools used for Blockchain technology.
- Implementing Blockchain in any security application.

Course Contents:

- Basics of Blockchain Technology and Crypto-currency
- Permissioned and Permission-less Blockcahin
- Consensus protocols and Algorithms.
- Implementation of Blockchain using JAVA
- Creating of SMART contract using solidity
- Design, Test and Deploy Secure Smart Contracts
- Creating of Block Chain Network using Hyperledger Composer platform
- Implementing block chain using Node JS
- Creating the Ethereum Blockchain using a Tool.

Who Should Attend: Any student from SE/TE (CE/IT)

Course Fees: Course is free of cost (only for SIES GST students)

Certification: Course completion and internship certificate is provided.

Internship: At the end of 6 days program participants will undergo 15 days internship covering developing secure web applications, identification of security threats and developing the security solution for various organizations (For ex: Bank Sector/Medical Sector/Insurance/IT Sector).

Registration link:

https://docs.google.com/forms/d/e/1FAIpQLSe-ujQPPtqZNvSVhvdKSJh7brVRSqqARJYlz_ZdeB_YXDbXwA/viewform?usp=sf_link

Contact for Registration:

Prof. Rizwana Shaikh: rizwana.shaikh@siesgst.ac.in, 9619197014
Prof. Masooda Modak: masooda.modak@siesgst.ac.in 9833161007
Prof Kalyani P: kalyani.pampattiwar@siesgst.ac.in, 9819370257

Day Wise Schedule:

Date	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Resource person	Dr,Rizwana Shaikh	Ms. Kalyani Pampattiwar	Ms. Masooda Modak	Ms. Namrata Patel	Dr. Rizwana Shaikh	NA
Time	10 am to 1:30 pm	10 am to 1:30 pm	10 am to 1:30 pm	10 am to 1:30 pm	10 am to 1:30 pm	10:00 am to 5:00 pm
	Introduction to Blockchain, Applications and advantages Bitcoin: Introduction Cryptocurrency and applications	Cryptography and Cryptanalysis, Use of cryptography in Blockchain, Symmetric key cryptography, Asymmetric key cryptography, RSA cryptosystem with example.	What are Smart Contracts? Key Properties of smart Contracts, Language for Smart Contracts.	Environment setup for blockchain development Constructor function explaination Prototype explaination,Creating new Transaction,	Ethereum components, features ,Wallets, Transactions, Public & Private keys	

Assignment/ Activity	Case Study of Bitcoin and Blockchain	Quiz on cryptography basics	Design of Smart Contracts	Generate hash when nonce is 7890 Current block data having two transactions George sent Jacob 345666 Shyam sent ram 34123 Take previous block hash as "23986yasjdasudyr326gyajsd" Generate hash value by changing atleast one string in any of above value.	Implementation of Blockchain using Ethereum, creating wallet, writing transaction, mining and generating crypto currency	
Time	1:30 pm to 5 pm	1:30 pm to 5 pm	1:30 pm to 5 pm	1:30 pm to 5 pm	1:30 pm to 5 pm	
	Components of blockchain , Types of blockchain and applications, Blockchain Structure, How Blockchain Works , Smart Contracts , Various implementation tools.	Cryptographic Hash function, Hash Chain, Merkle Tree, Digital signature, Cryptocurrency using hash, chain and digital signature.	Deploying Smart Contracts, Using Metamask for transfer of ethers	Adding hash block,Creatingand Testing proof of work, Adding nonce and mining the transaction,Creating Genesis block	Projects topics to be selected for Internship after discussion with All Trainers	

Assignment/ Activity	Hyperledger Composer- creating blockchain network for business application	Demo of SHA256 and other cryptographic tools, Assignment on RSA cryptosystem	Test, and deploy secure Smart Contracts	Creating Blockchain from javascript and node js	Two assignments and two quizzes	

Department of Computer Engineering

Event Report

Student Development Program on Blockchain Technology

Event Information
Event Type: Student Development Program
Event Title: Blockchain Technology
Resource Persons: Dr.Rizwanashaikh, Prof.MasoodaModak, Prof.KalyaniPampattiwar, Prof.Namrata Patel
Event Date: 15/06/2020 to 20/06/2020
Organized for: SE, TE Comp/IT/EXTC Students
Organized by: Computer Engineering, SIES GST
Target Audience (Branch & Nos.): Undergraduate Students (CE/IT/EXTC : 13 students)
Attachments: **1. Photographs (JPEG/PNG)** **2. Attendance Report** **3. Feedback Report**

Event Description

Department of Computer Engineering of SIES GST organized an SDP from 15/06/2020 to 20/06/2020 for SE/TE students.
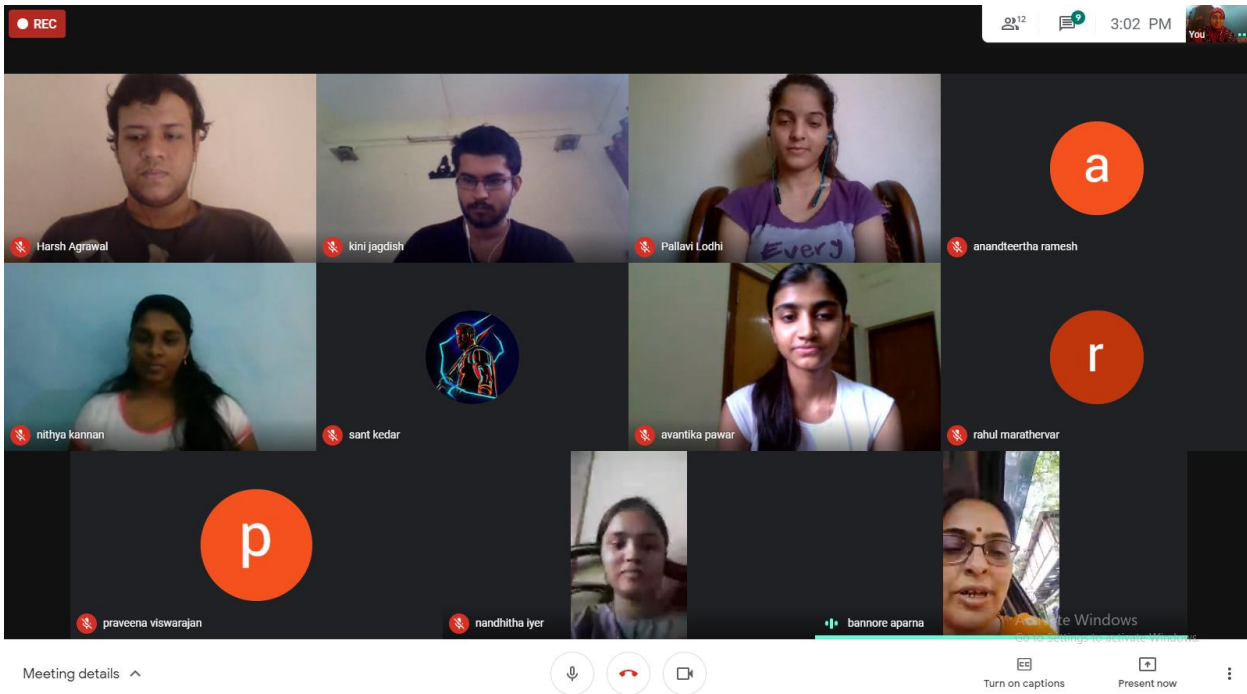
Dr. Aparna Bannore, HOD CE has addressed the students about the overview of program and internship to be conducted. She explained the benefits of learning security and blockchain. Also various career opportunities available in the field of security.
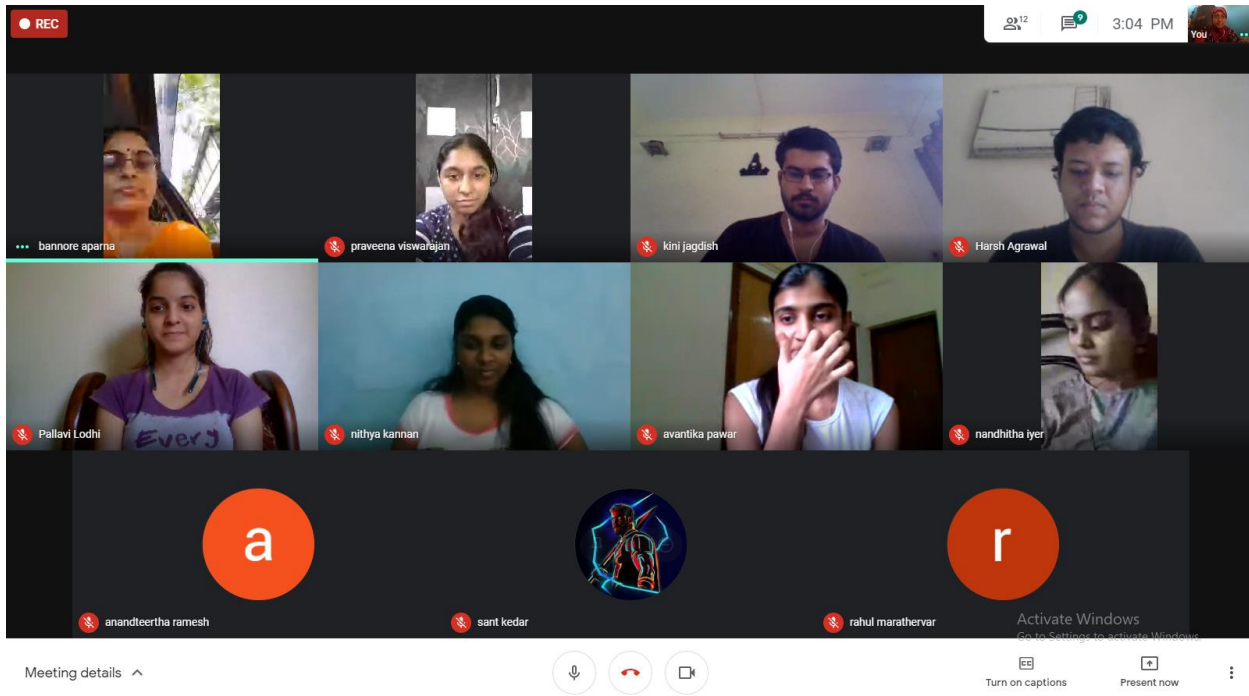
Around 13 participants from SE and TE attended the SDP . Entire program was carried out in six days span. Eveready's session is divided into two halves morning and afternoon.

The Sessions started with covering basics of Security and need of Blockchain. Various tools were identified and studied along with the demonstration. A sample project in the form of mini project is the expected outcome of the course.

The first day session was conducted by Dr. Rizwana Shaikh. She has covered Introduction to blockchain, Bitcoin: Introduction Cryptocurrency and applications followed by afternoon session on Smart Contracts, Various implementation tools. Second day session was conducted by Prof. Kalyani Pampattiwar on Cryptography required for Blockchain, Public key cryptography and Markeley tree and Hash function. Day 3 session was conducted by prof. Masooda Modak on Introduction to solidity, Remix IDE framework and Sample contract., Deploying Smart Contracts, using Metamask for transfer of ethers.. Day 5 session was delivered by Prof. Namrata Patel on Building a Blockchain using javascript, Accessing Blockchain using API and Consensus algorithms. Day 6 was conducted by Dr. Rizwana Shaikh on Case study on Blockchain and at the end internship project topics were discussed with students. Students have been given 15 days time to complete their project. Vote of thanks was presented by HOD CE, Dr. Aparna Bannore. She has congratulated all the students for attending the SDP with full enthusiasm.

1. Photographs (in JPEG/PNG):

SIES Graduate School of Technology
Sri Chandrasekarendra Saraswati Vidyapuram
Sector 5, Nerul, Navimumbai-400706

## 2. Attendance and Feedback Report (Scanned copy):

Attendance report for SDP on "Blockchain Technology" (15/06/2020 to 20/06/2020)

Sr. No.	Roll No.	Class	Name	15-06-2020	16-06-2020	17-06-2020	18-06-2020	19-06-2020	20-06-2020
1	118A1067	SE CE D	Anandteertha Ramesh Rao	P	P	P	P	P	P
2	117A3038	TE-IT	Avantika Pawar	P	P	P	P	P	P
3	117A2005	TE EXTC A	Harsh Agrawal	P	P	P	P	P	P
4	117A1031	TE-CE-C	Kini Jagdish	P	P	P	P	P	P
5	117A3012	TE-IT	Nandhitha Iyer	P	P	P	P	P	P
6	117A3035	TE-IT	Nithya Kannan	P	P	P	P	P	P
7	118A2054	SE EXTC	Pallavi Lodhi	P	P	P	P	P	P
8	117A3043-TE-IT		praveena viswarajan	P	P	P	P	P	P
9	117A3026	TE-IT	Rahul marathervar	P	P	P	P	P	P
10	118A1074	SE CE D	sant kedar	P	P	P	P	P	P
11	118A2049	SE EXTC	Sumaiya Khan	P	P	P	P	P	P
12	118A1059	CE SE D	Girish Parulkar	P	P	P	P	P	P
13	118A3055	SE-IT	Pooja Shetty	P	P	P	P	P	P

3. Feedback Analysis

1. General impression about the content of the course?

12 responses

- Outstanding
- Excellent
- Very Good
- Good
- Average
- Poor

33.3% / 33.3% / 33.3%
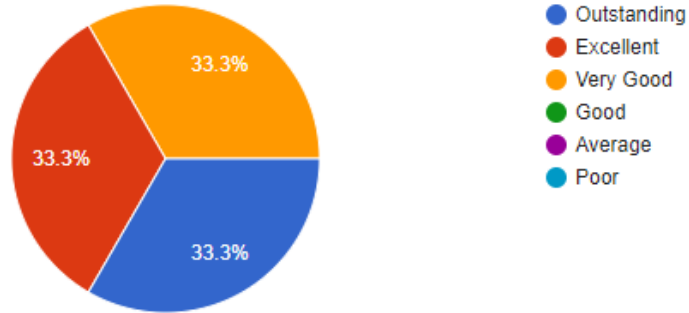
2. How well did the content address your expectations?

12 responses

- Outstanding
- Excellent
- Very Good
- Good
- Average
- Poor

50% / 25% / 25%
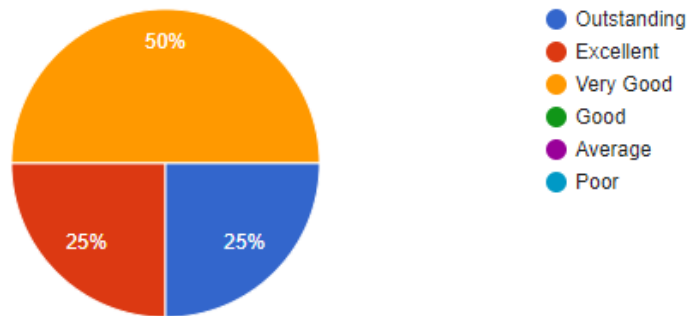
3. How do you rate the quality of content presented?

12 responses

Legend:
- Outstanding
- Excellent
- Very Good
- Good
- Average
- Poor

(25%, 50%, 25%, 25%)
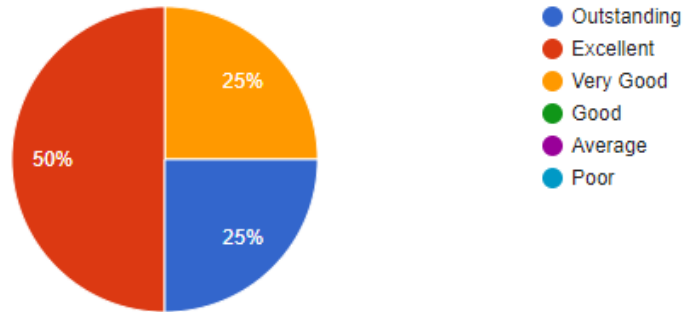
4. How relevant was the content to your profession?

12 responses

Legend:
- Outstanding
- Excellent
- Very Good
- Good
- Average
- Poor

(25%, 58.3%, 16.7%)
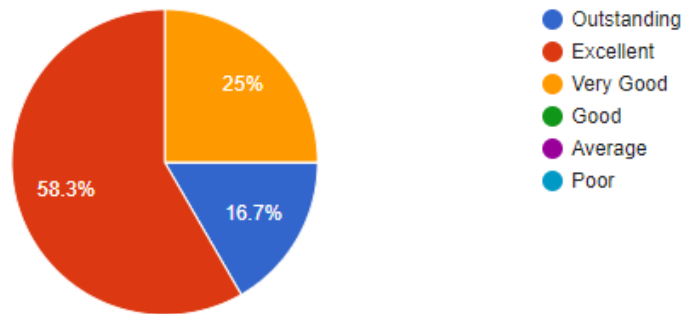
5. How do you rate the amount of content presented?

12 responses

- Outstanding
- Excellent
- Very Good
- Good
- Average
- Poor

33.3%
50%
16.7%
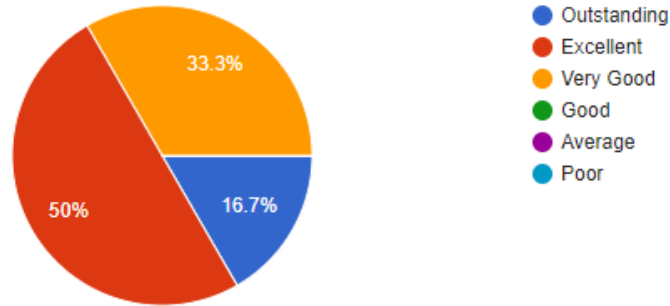
6. How do you rate hands on experience of this lab session?

12 responses

- Outstanding
- Excellent
- Very Good
- Good
- Average
- Poor

33.3%
33.3%
33.3%
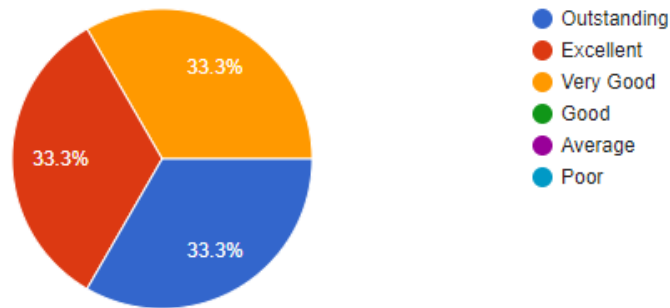
7. Other comments about the event's content

12 responses

4. Impact Analysis:

1. Students got exposure to upcoming applications of Blockchain technology.
2. They have learnt the concepts which are beyond their curriculum.
3. As a outcome of it in their internship students have developed a mini project based on concepts they have learnt during these six days.