

Report on Blockchain Session 2

- **Organizer:** CSI Terna
- **Topic:** Web 3.0 and Blockchain 4.0
- **Speaker:** Dr. Vaishali Khairnar
- **Date:** 16th September 2025
- **Venue:** Terna Auditorium

Objective:

The seminar was designed to provide students with an advanced understanding of emerging blockchain technologies and the evolution of the internet toward Web 3.0. The focus was on explaining how decentralization, tokenization, and smart contracts are driving a new digital paradigm. Participants were introduced to Blockchain 4.0 concepts, highlighting scalability, interoperability, and integration with enterprise solutions.



Orientation of the Session

Workshop Highlights:

The seminar then moved to Blockchain 4.0, highlighting the technological advancements over previous blockchain generations. Key topics included scalability solutions to handle large transaction volumes, energy-efficient consensus mechanisms, cross-chain interoperability, and integration with enterprise-grade applications.

- The foundational role of blockchain in enabling trustless transactions and decentralized applications (dApps) was emphasized.
- Blockchain 4.0 advancements were discussed, including scalability solutions, energy-efficient consensus mechanisms, cross-chain interoperability, and enterprise integration.
- Real-world use cases were showcased, such as decentralized finance (DeFi), IoT-enabled supply chain tracking, secure healthcare data management, and automated smart contract execution.
- Practical demonstrations illustrated blockchain workflows, showing how transactions are validated, recorded, and executed through smart contracts in Blockchain 4.0.
- Interactive discussions allowed students to explore emerging trends, technical challenges, regulatory considerations, and innovative applications across industries.



Blockchain Session - 2

Outcome:

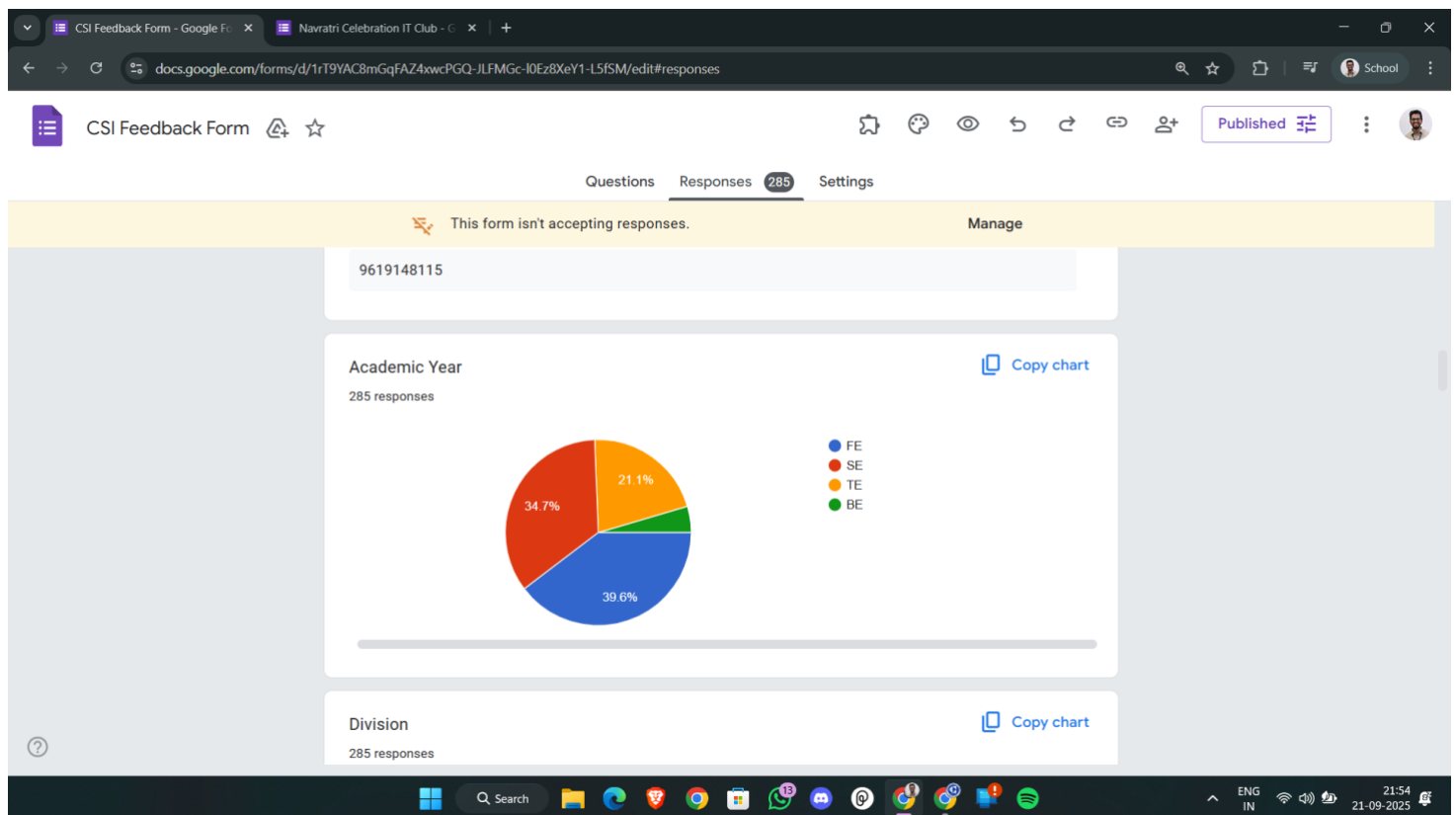
Participants gained a clear understanding of the advancements that Web 3.0 and Blockchain 4.0 bring to digital systems and enterprise solutions. The seminar enhanced students' awareness of decentralized technologies, interoperability solutions, and the practical use of blockchain beyond cryptocurrencies. Students left with actionable insights on the skills and knowledge required to participate in this evolving technological ecosystem, as well as motivation to explore research and development opportunities in Web 3.0 applications.

**Practical Learning**

Overall, students left the session with an enhanced perspective on the potential and limitations of next-generation blockchain technologies, as well as motivation to explore projects and research.

Conclusion:

The second session of the CSI Terna blockchain seminar series, led by Dr. Vaishali Khairnar, effectively deepened participants' understanding of next-generation blockchain technology and the transition to Web 3.0. The seminar successfully combined technical insights, real-world applications, and career guidance, leaving students better equipped to navigate the emerging landscape of decentralized technologies. The session reinforced the relevance of blockchain 4.0 as a transformative force across industries and set the stage for further exploration in subsequent sessions.



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