DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

EXPERT TALK -EVEN SEM (2024)

Subject: Smart contract using Block chain

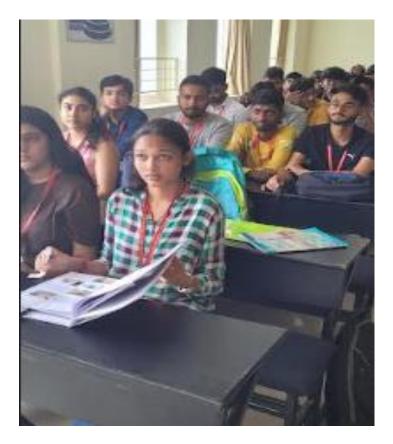**Expert name: Dr. Preethi**

Audience: 4th Semester Students   **Date: 19-07-2024(11:00A.M-12:30 P.M)**

The Department of Information Science and Engineering has conducted Expert talk on the topic "**Smart contract using Block chain**" for the 4th semester students on the 19th of July, 2024 under the supervision of Dr.Vandana C P, Head of the Department in offline mode. The Expert speaker, Dr. Preethi was invited to conduct the same.

• The Speaker, Dr. Preethi is currently working as an Assistant professor-senior grade in Manipal Institute of Technology, Bengaluru who examines Smart contract.

VARIOUS SESSION THROUGHOUT THE PROGRAM:

Expert Talk by Dr. Preethi**:**

TOPICS COVERED:

- Understanding Smart Contracts

- Benefits of Smart Contracts

- Applications

- Challenges and Limitations

- Ethereum and Smart Contracts

- IDEs

Understanding Smart Contracts:

- Smart contracts are self-executing contracts with the terms of the agreement directly written into code.

- Utilizing blockchain technology, these contracts automatically enforce and facilitate the negotiation or performance of an agreement

Benefits of Smart Contracts:

- **Smart contracts offer numerous benefits, including automation of processes, security through encryption, and efficiency by eliminating intermediaries, and transparency through public ledger access.**

Applications:

- **Financial Services**
- **Supply Chain Management**
- **Real Estate**
- **Healthcare**
- **Governance and Voting**
- **Intellectual Property**
- **Logistics and Transportation**
- **Entertainment and Media**

Challenges and Limitations:

- ➢ **Legal and Regulatory: The legal status of smart contracts varies by jurisdiction. Integrating them with existing legal frameworks can be challenging.**

- ➢ **Security Risks:** While inherently secure, smart contracts are only as secure as their code. Bugs or vulnerabilities can lead to significant losses, as seen in high-profile cases like the DAO hack.

- ➢ **Scalability:** Blockchain networks face scalability issues. High transaction volumes can lead to congestion and high fees, impacting the efficiency of smart contracts.

- ➢ **Complexity in Coding:** Writing error-free smart contracts requires expertise. Simple errors in the code can have drastic consequences due to their immutable nature.

Ethereum and Smart Contracts:

- • Ethereum, a leading blockchain platform, is renowned for its support of smart contracts.

- • Its decentralized platform allows developers to create and deploy smart contracts using Solidity, a programming language specifically designed for this purpose

IDEs for smart contract development:

- ✓ **Remix IDE-** *Web-based*

- ✓ **Truffle Suite-** *Desktop and command-line tools*

- ✓ **Hardhat-** *Command-line tools*

- ✓ **Visual Studio Code (VS Code) with Extensions-** *Desktop*

- ✓ **Embark-** *Command-line tools and web-based dashboard*

- ✓ **Brownie-** *Command-line tools*

Session Concluded with question answer session

Expert Talk Organizer: Mrs. Priya N   HOD-ISE