

**A Report on Webinar**  
**“Research Opportunities in Integration of IoT and Blockchain for Smart Applications”**  
**Organized by Department of Computer Science & Engineering**  
**in association with Computer Society of India(CSI)**  
**22.11.2023**



**Submitted by: Mr. T Thangarasan, Assistant Professor, Department of CSE.**

**Attendance: 130 participants (Internal)**

**Resource person: Dr. A. Prasanth, Assistant Professor, Sri Venkateswara College of Engineering**

**Report Received on 01.12.2023**

The Department of Computer Science & Engineering in association with CSI, organized a webinar on the topic **“Research Opportunities in Integration of IoT and Blockchain for Smart Applications”** for the CSE students on 22/11/2023 from 10.15 Am to 12.15 Pm in Seminar hall A.

The welcome address was given by **Mr.T.Thangarasan**, Assistant Professor, Department of CSE to the gatherings.

**Dr.R.Kalpana**, Professor & Head, Department of CSE shared the importance of organizing this webinar on the topic **“Research Opportunities in Integration of IoT and Blockchain for Smart Applications”**.



The resource person started the session by extending his hearty thanks to the participants, organising members, HoD, Principal and Management of MITS Madanapalle for giving him opportunity to share his knowledge and experience. The resource person shared his amazing ideas on the latest trending topics Internet of Things and Blockchain Technologies.

The webinar highlighted with the following topics:

**1. Introduction to IoT**

Internet” is to provide a connection between computers worldwide. “Things” is referring to devices that are capable of communicating data over an Internet connection. IoT refers to the billions of physical devices around the world that are now connected to the internet, all collecting and sharing data.

**2. IoT System in Agriculture Environment**

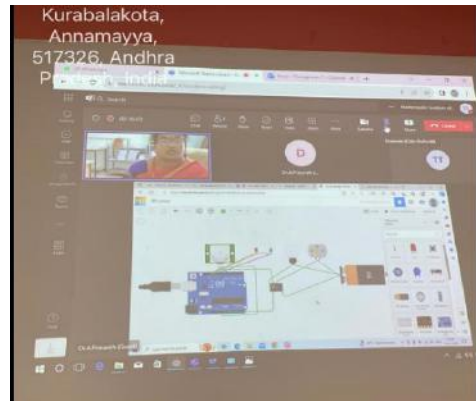
Agriculture plays an important role in our lives. There is a need to combine agriculture with technology so that the production can be improved in an efficient way. A Greenhouse technology is one of the possible approaches in this direction. It provides a way to control the environmental parameters in order to improve the production.

### 3. **Blockchain Technology**

Blockchain is the mechanism that allows transactions to be verified by a group of unreliable actors. The blockchain protocol structures information in a chain of blocks, where each block stores a set of Bitcoin transactions performed at a given time.

### 4. **Bitcoin Network**

To support and operate with the blockchain, network peers have to provide, the following functionality: ✓Routing, ✓Storage, ✓Wallet services ✓Mining. According to the functions they provide, different types of nodes can be part of the network.



### 5. **E-commerce**

A block stores your transactions of the date you purchased to time you purchased is stored. A block store name of the customer in the form of a digital signature. Each product is given a unique code and whatsoever purchase is stored in a block. The e-commerce business runs in this fashion if it uses Blockchain technology for its business.

### 6. **Integration of Blockchain with IoT**

Blockchain can enrich the IoT by providing a trusted sharing service, where information is reliable and can be traceable. In the cases where the IoT information should be securely shared between many participants this integration would represent a key revolution. Blockchain technology is identified as the key to solve scalability, privacy, and reliability problems related to the IoT paradigm.

### 7. **High Computational Optimization**

Encryption is central to blockchain, as it is required to verify transactions at each individual node. The individual nodes need to run the encryption/decryption algorithms to verify the transactions, and this requires processing power and electricity. This is also a demand for IoT, as many applications require the installation of a very high number of low powered devices, so the encryption algorithms need to be able to run with minimal resources.

### 8. **Data privacy**

Many IoT applications work with confidential data. For instance: when the device is linked to a person, such as in the e-health scenario, it is essential to address the problem of data privacy. Securing the device so that data are stored securely and not accessed by people without permission. However, the problem of data privacy in IoT devices involves more difficulty, since it starts at data collection and extends to the communications and application levels.

#### **The outcome of the programme:**

- The students gained basic knowledge on Internet of Things, Cloud Computing and Block chain Technologies.
- The students got idea on accessing the online tools – tinkercad, wokwi for working with Internet of Things.
- The students understand the concepts of exchange of data and integration of block chain technologies with IoT.
- This webinar serves as a platform for students to interact on cutting-edge technologies in IoT and Block chain Technologies.

The session was concluded at 12.30PM followed by a vote of thanks, given by Coordinator of the webinar **Mr. J Nagaraj**, Assistant Professor, Department of Computer Science & Engineering, MITS, Madanapalle.