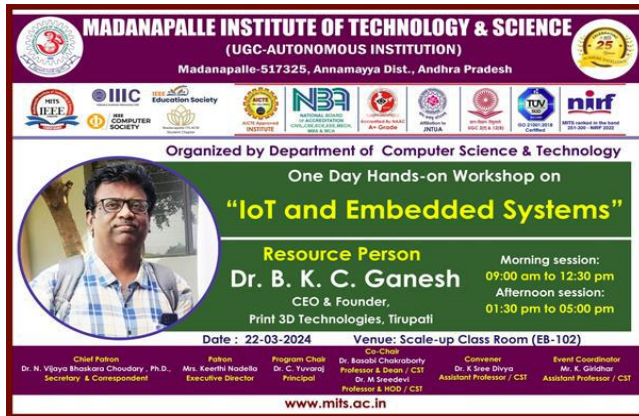


**A Report on One Day Hands-on Workshop on
"IoT and Embedded Systems"
Organised by Department of Computer Science & Technology
22nd March 2024**



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)
Madanapalle-517325, Annamayya Dist., Andhra Pradesh

Organized by Department of Computer Science & Technology
One Day Hands-on Workshop on
"IoT and Embedded Systems"

Resource Person
Dr. B. K. C. Ganesh
CEO & Founder,
Print 3D Technologies, Tirupati

Morning session:
09:00 am to 12:30 pm
Afternoon session:
01:30 pm to 05:00 pm

Date : 22-03-2024 Venue: Scale-up Class Room (EB-102)

www.mits.ac.in



Submitted by: Mr. K. Giridhar, Assistant Professor, Department of CST.

Resource Person: Dr. B. K. C. Ganesh, CEO & Founder, Print 3D Technologies, Tirupati

Participants: III year & II-year CST students

Attendance: 58 participants (Internal)

Venue: Scale-up Classroom, MITS, AP

Mode of conduct: Offline

Report Received on 27.03.2024

Department of Computer Science and Technology, has organized One Day Hands-on Workshop on "IoT and Embedded Systems" on 22-03-2024 (Friday), 09:00 AM.

Objective:

To provide participants with practical insights into the fundamentals of IoT and embedded systems. Through hands-on activities, attendees will learn how to design, develop, and deploy IoT solutions using embedded systems. The workshop aims to enhance participants' understanding of sensor integration, data processing, and connectivity protocols crucial for IoT applications. Additionally, participants will gain proficiency in programming microcontrollers and utilizing IoT platforms for real-world implementations. Ultimately, the workshop seeks to empower participants with the skills and knowledge necessary to innovate and create IoT-enabled devices and systems.

The Programme started at 09:00 AM by **Mr. B.C.C Balaji**, IEEE Student Branch member with a grand welcome to the Resource Person, HOD, Faculty members and participants.

CST Department IEEE Student Branch faculty Coordinator, **Mr. K. Giridhar**, Assistant Professor, Department of CST, MITS, Madanapalle conveyed his sincere thanks to the IEEE Student Branch-MITS, Resource person, Management, Principal, Vice Principals, Deans, all the HODs, Faculty members for giving this opportunity for conducting One day Workshop. Then he invited HOD, Department of CST to address the gathering.

Dr. K Sree Divya, Convener, Assistant Professor, Department of CST gave few words about the workshop and the necessity of conducting workshop in the department which help students in doing IoT related projects.

Dr. M. Sreedevi, HOD, Department of CST heartily invited Resource person for the One-day Workshop. She discussed few things about IoT and Embedded Systems, its importance to the society, how to utilize various IoT technologies and asked students to utilize the opportunity.

Ms. Anjali, IEEE Student Branch member, Department of CST read the profile of Resource person **Dr. B.K.C. Ganesh, CEO & Founder, Print 3D Technologies, Tirupati**. She handed over the session to the Resource person.

The **Resource person** (Dr. B.K.C. Ganesh) started the session by extending his heartily thanks to the participants organizing members, HOD, Principal and Management of MITS, Madanapalle for giving him opportunity to share his knowledge and experience in "IoT and Embedded Systems".

The Resource Person delivered workshop on the following topics:

The topics covered in a One Day Hands-on Workshop on IoT sensors may include:

1. Introduction to IoT Sensors: Overview of IoT and its applications, role of sensors in IoT systems.
2. Types of IoT Sensors: Explanation of various sensor types such as temperature, humidity, motion, proximity, etc.
3. Sensor Selection and Integration: Criteria for selecting sensors based on application requirements, interfacing sensors with microcontrollers.
4. Data Acquisition and Processing: Techniques for collecting sensor data, methods for data pre-processing and filtering.
5. Hands-on Activities: Practical exercises involving sensor setup, data collection, and analysis using microcontrollers or IoT platforms.

6. IoT Sensor Networks: Basics of sensor networking, protocols for communication between sensors and IoT gateways.
7. Case Studies and Applications: Examples of real-world IoT sensor deployments and their impact across industries.
8. Future Trends and Challenges: Discussion on emerging sensor technologies, potential advancements, and challenges in IoT sensor integration.

These topics aim to provide participants with a comprehensive understanding of IoT sensors and equip them with practical skills to implement sensor-based IoT solutions.



The session ended at 12:30 PM and continued afternoon session after 01:30 PM



Queries and Feedback session:

- Students asked queries on IoT Sensors, Technologies and its related areas, Resource person answered for all those queries.
- Students given feedback on the One day workshop and said they felt happy for involving in this type of session as they got clear picture about IoT and Embedded systems.



Take away from session:

Participants in the One Day Hands-on Workshop on "IoT and Embedded Systems" can expect several key takeaways:

1. Practical Skills: Gain hands-on experience in designing, developing, and deploying IoT solutions using embedded systems, enhancing proficiency in sensor integration, data processing, and connectivity protocols.
2. Understanding IoT Concepts: Develop a solid understanding of IoT concepts and applications, including the role of sensors, microcontrollers, and IoT platforms in building IoT-enabled devices and systems.
3. Problem-Solving Abilities: Enhance problem-solving skills by tackling real-world challenges in IoT development through practical exercises and case studies.
4. Collaboration Opportunities: Engage with peers and industry experts, fostering collaboration and networking opportunities to exchange ideas and best practices in IoT and embedded systems development.
5. Empowerment for Innovation: Gain the knowledge and skills necessary to innovate and create IoT solutions, empowering participants to drive technological advancements and address societal challenges through IoT-enabled innovations.

The session ended by **Dr. M. Sreedevi, Professor, Head of the Department, MITS**, thanking the resource person, faculty members and students and expressed her gratitude to the Management and Principal for giving permission and financial support to organize this programme.

Vote of Thanks: The session was concluded at 05:00 PM followed by a Vote of Thanks, given by CST Department IEEE Student Branch faculty Coordinator, **Mr. K. Giridhar**, Assistant Professor, Department of CST, MITS, Madanapalle.



Outcomes:

The outcomes of a One Day Hands-on Workshop on "IoT and Embedded Systems" typically include:

1. **Enhanced Understanding:** Participants develop a deeper understanding of IoT and embedded systems, including their components, functionalities, and applications.
2. **Practical Skills Acquisition:** Attendees gain hands-on experience in working with sensors, microcontrollers, and IoT platforms, enabling them to design and develop IoT solutions.
3. **Problem-Solving Abilities:** Participants improve their problem-solving skills by solving real-world challenges encountered during workshop activities and projects.
4. **Networking Opportunities:** The workshop provides a platform for networking with peers, instructors, and industry professionals, fostering collaboration and knowledge exchange.
5. **Inspiration for Innovation:** Attendees are inspired to explore further possibilities in IoT and embedded systems, empowering them to innovate and contribute to technological advancements in their respective fields.