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(UGC-AUTONOMOUS INSTITUTION)
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A Report on Two-day workshop on "Arduino with Scratch"
Organized by Department of Electronics & Communication Engineering
In association with MITS ISTE
from 19.05.2025 to 20.05.2025.

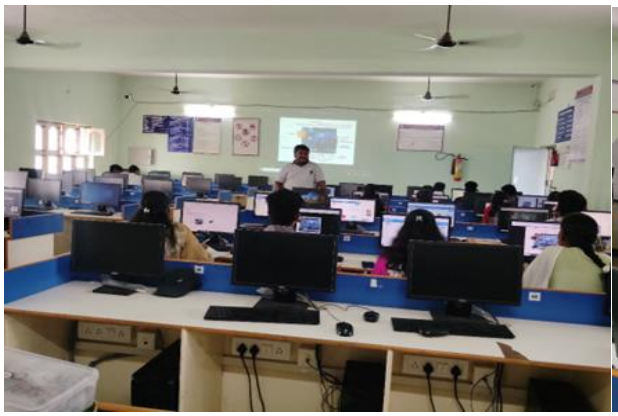
Report Submitted by: Mr. Kashiraj V Kalshetti, Assistant Professor, Department of Electronics & Communication Engineering; Mr. Arivarasu, Assistant Professor, Department of Electronics & Communication Engineering.
Resource Person: Mr. Mahidhar Banka, Executive Technical, APSSSD, Govt. of Andhra Pradesh.
Venue: EB202
Attendance: 50 participants
Mode of Conduct: Offline
Report Received on 21.05.2025.

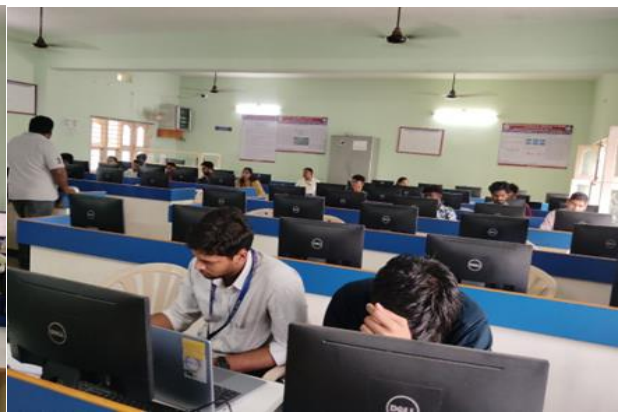
Program Overview

The program commenced at 10:00 AM with a welcome address by Dr. S. Rajasekaran, Head of the Department of ECE, who introduced the resource person, Mr. Mahidhar Banka, currently working as a Technical Manager, Andhra Pradesh State Skill Development Center (APSSDC) Gov. of Andhra Pradesh, Andhra Pradesh.
Mr. Mahidhar Banka began the session by expressing his gratitude to the participants, organizing committee, Head of the Department, Principal, and Management of MITS for the opportunity to share his insights and research on Embedded System and Internet of Things (IoT).

Key Points Discussed

1. **Arduino Uno ATmega328P**
    1. Overview Arduino Uno
    2. Introduction to Arduino ID Software.
2. **Key Features of Tinkercad free Web App**
    1. Architecture of Arduino Uno.
    2. Arduino Uno features, Application in Real time system.





3. **Designing Application Using Tinkercad**
    1. LED Blinking Using LED.
    2. Controlling Brightness of LED using PWM..
    3. Arduino Uno interfacing with Motors.
4. **Interfacing of different type of Sensor for real time application.**
    1. LED blinking, L293D Motor Driver
    2. IR Sensor.
    3. Ultrasonic Sensor interface with Arduino.
    4. Bluetooth Control Using Arduino.
    5. MQ2 gas sensor Interfacing with Arduino.

Challenges Embedded Deployment and IoT

5. **Career Opportunities in Embedded Systems and IoT**
    1. Research and development roles in IoT and Embedded companies.
    2. Opportunities Medical Health application using IoT
    3. Global career paths in technology-driven sectors.
6. **Q&A Session**
    1. Addressing queries from students on research opportunities, career paths, and embedded technology's future impact.

Conclusion

The session provided an in-depth understanding of the embedded technologies with a focus on Arduino Microcontroller and IoT. Mr. Mahidhar Banka presentation offered a comprehensive overview of the embedded IoT technology, its potential applications, and the challenges ahead. His experiences as a research scientist in the field helped bridge the gap between theoretical knowledge and practical implementation.

Program Outcomes

- Increase awareness among students about emerging technologies and their applications.
- Encourage students to explore research in IoT and related fields.
- Strengthen academic-industry collaboration for innovative research projects in embedded technology.