LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(Autonomous Status Since the Academic Year 2010-11 & Extended up to 2031-32)
NAAC Accredited with CGPA of 3.20 on 4-point scale at 'A' Grade NIRF-2022 (Positioned in the Band of 251-300 in the Engineering Category)NIRF-2023 (Positioned in the Band of 101-150 in the Innovation Category)
NBA Accredited under Tier-I (ECE, EEE, CSE, IT, ME, CIV, ASE)
Recognized as Scientific Industrial Research Organization(SIRO) by DSIR
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B.Reddy Nagar, Mylavaram-521230, N.T.R Dist., Andhra Pradesh, India.
Department of Electronics and Communication Engineering

Dt:25.02.2025

Report on 5-Days workshop on "Building IoT Solutions using Embedded Systems"

Event Type:	Workshop
Date / Duration	17th Feb 2025 to 21th Feb 2025 (For ECE-A, B&C Sections)
Resource Person	Mr.P.S.Satya Kumar, SRC e-Solutions
Name of Coordinator(s)	1.Dr.P. Venkata Rao 2.Mr.Ch. Mallikharjuna Rao
Target Audience	IV-Semester B. Tech ECE Students (A, B & C sec)
Total no of Participants	70 No
The objective of the Event	To Expose the student to the design Environment for IoT Solutions

The outcome of the Workshop:

1. **Hands-on Learning**: Students learn by doing, which helps them understand how electronics hardware, and coding work together.
2. **Improved Programming Skills**: They get better at writing code, especially using C/C++ for real-world projects.
3. **Hardware Interfacing**: They learned how to connect sensors and devices like motors or lights and sensors to an Arduino, making projects interactive.
4. **Practical Projects**: Students will develop real-time applications like home automation or Various IOT applications.
5. **Problem-Solving Skills**: Students can able to troubleshoot issues with hardware and software, which builds critical thinking.
6. **Teamwork**: By working on group projects, they improved collaboration skills.
7. **Boosts Career Opportunities**: Gaining Arduino knowledge makes students more attractive for jobs in tech fields.

Description/Report on workshop:

SCOPE: Experimenting with hardware and software and innovating is the path of today's engineers. Students need to master the hardware and the basic functionality to convert their ideas into reality and then into a product that contributes something innovative to society at large.

The workshop on “Building IoT Solutions using Embedded Systems” is conducted for 5-day to IV-semester B.Tech ECE students.

The workshop began with an inaugural address by Dr.G.Srinivasulu, Professor & HOD of ECE, who highlighted the significance of the training. It was mentioned that with the technology evolving faster the students should always update themselves with the current trends. Irrespective of running behind non-core jobs, students need to strengthen their core concepts to build careers in the latest technologies of Electronics & Communication Engineering.

Dr. P. Venkata Rao, Mr.CH.Mallikharjuna Rao who are the coordinators of this workshop, have informed the students about initiatives taken by the department to enhance students' skill sets as per the requirements of the industry.

The concepts that are discussed in each session of the workshop by the mentor Mr.P.S Satya Kumar from SRC e-solutions are as follows.

DAY-1 :17.02.2025

Introduction to Microcontrollers and Embedded Systems

Overview of embedded systems

Applications and importance

Introduction to the Arduino platform

Arduino Basics

Arduino board components and functions

Setting up the Arduino IDE

Writing your first program

Interfacing and Programming (Hands-on):

Digital I/O peripherals interfacing and programming

LED and Button

Buzzer and DC Motor

IR Sensor and Ultrasonic Sensor

DAY-2: 18.02.2025

Touch Sensor and Relay Module

LCD Display

DHT 11 sensor Interfacing

Analog peripherals interfacing and Programming

POT and Joystick

LDR and Moisture Sensors

soil moisture sensor & rain sensor

Thermistors and Smoke Sensors

DAY-3: 19.02.2025

 PWM peripherals interfacing and Programming

LED Brightness control

DC Motor Speed control

Servo Motor control

 Serial peripherals interfacing and Programming (UART/I2C/SPI)

Bluetooth Module and Wi-Fi Module

Accelerometer module

RFID module

DAY-4 :20.02.2025

IoT with Arduino

Connecting Arduino to the internet

Introduction to IoT platforms

Sending sensor data to the cloud (e.g., Thing Speak)

Controlling actuators using Thing speak cloud & using MIT app inventor

DAY-5 : 21.02.2025

Introduction to robotics

Interfacing ultrasonic sensors to robot with Arduino

Interfacing robots with the hc05 module

Interfacing IoT with Robotics

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Workshop Banner

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L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

Heartly Welcome
To
One-week Hands-on Workshop
on
Building IoT solutions with Embedded Systems

From 17.02.2025 to 21.02.2025

Resource Person

P.S Satya Kumar B.E,M.Tech.

Organized By

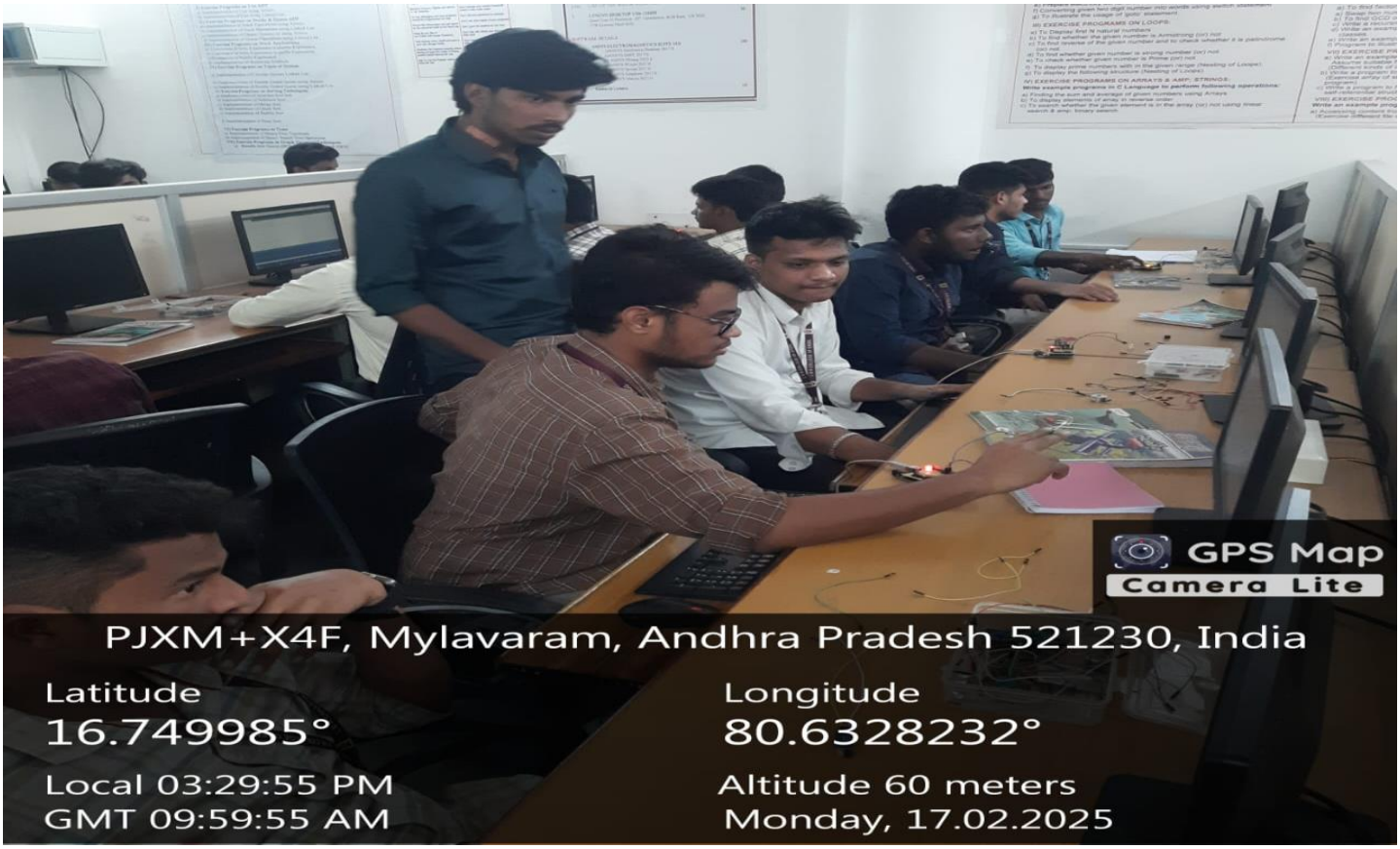
Dept.Of ECE in Association with
SRC e-solutions.

Coordinators:
Dr.P.Venkata Rao
Mr.CH.Mallikharjuna Rao

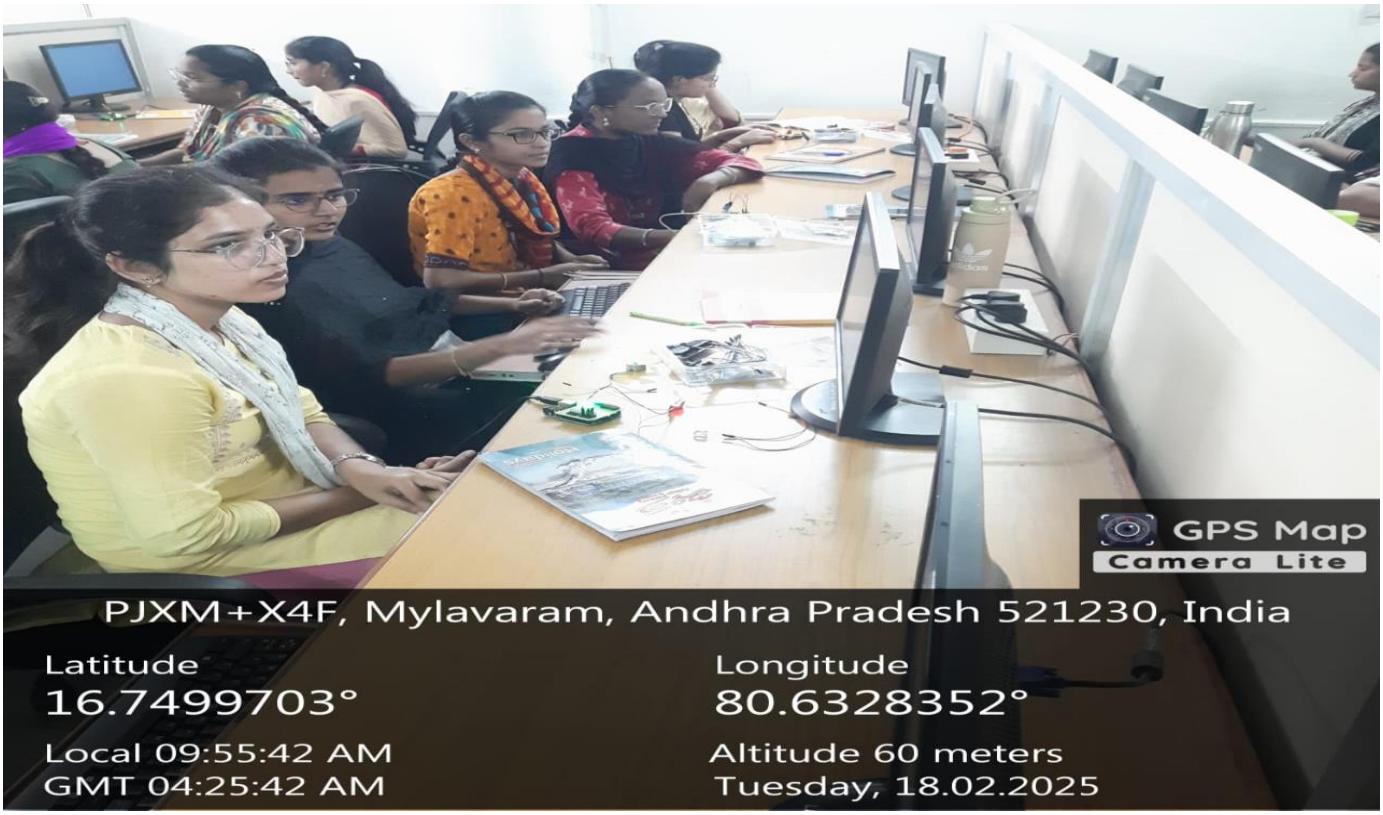
Convener:
Dr.G.Srinivasulu,Prof & HOD

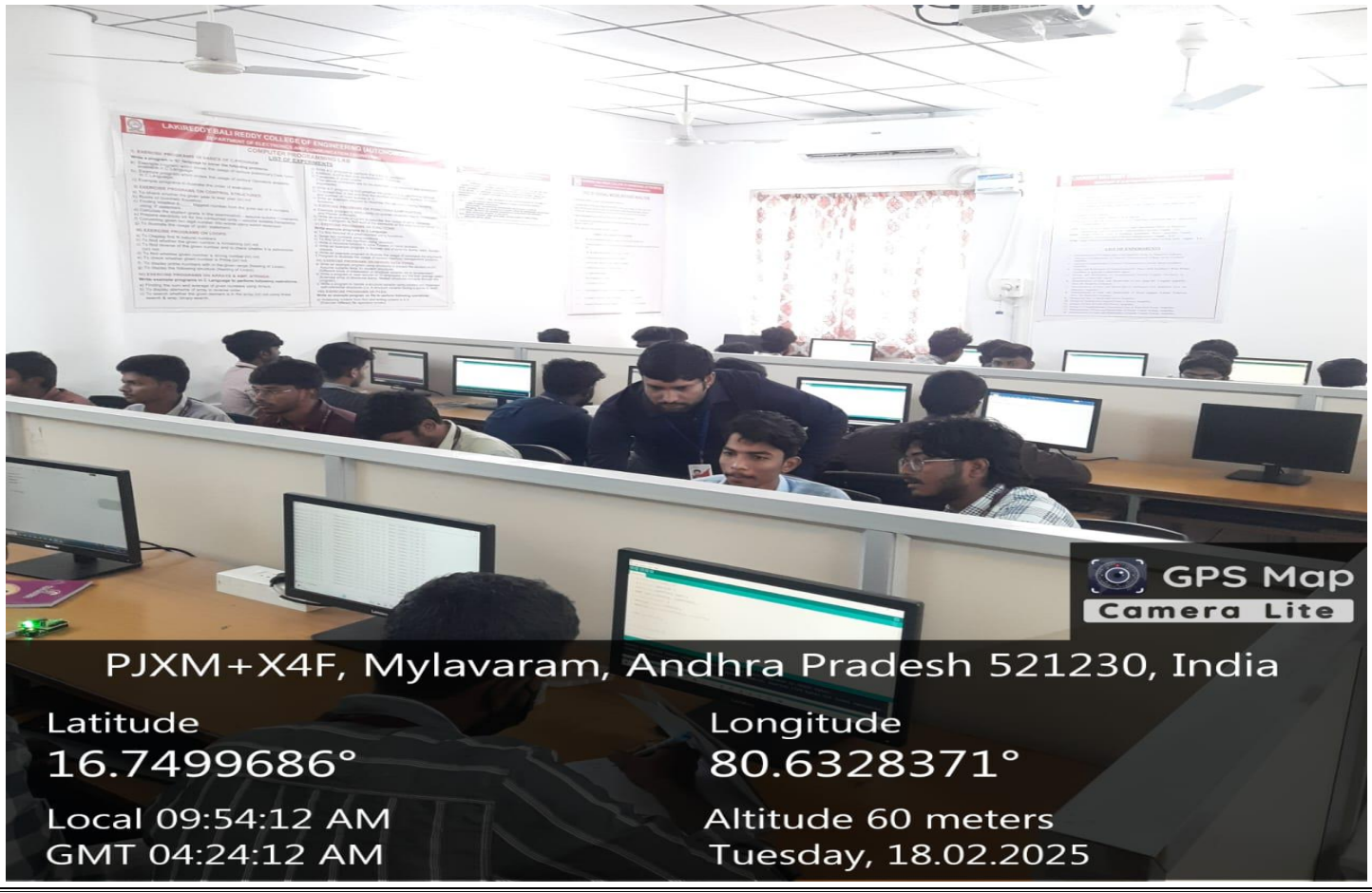
Workshop Photos

Day-1: 17.02.2025

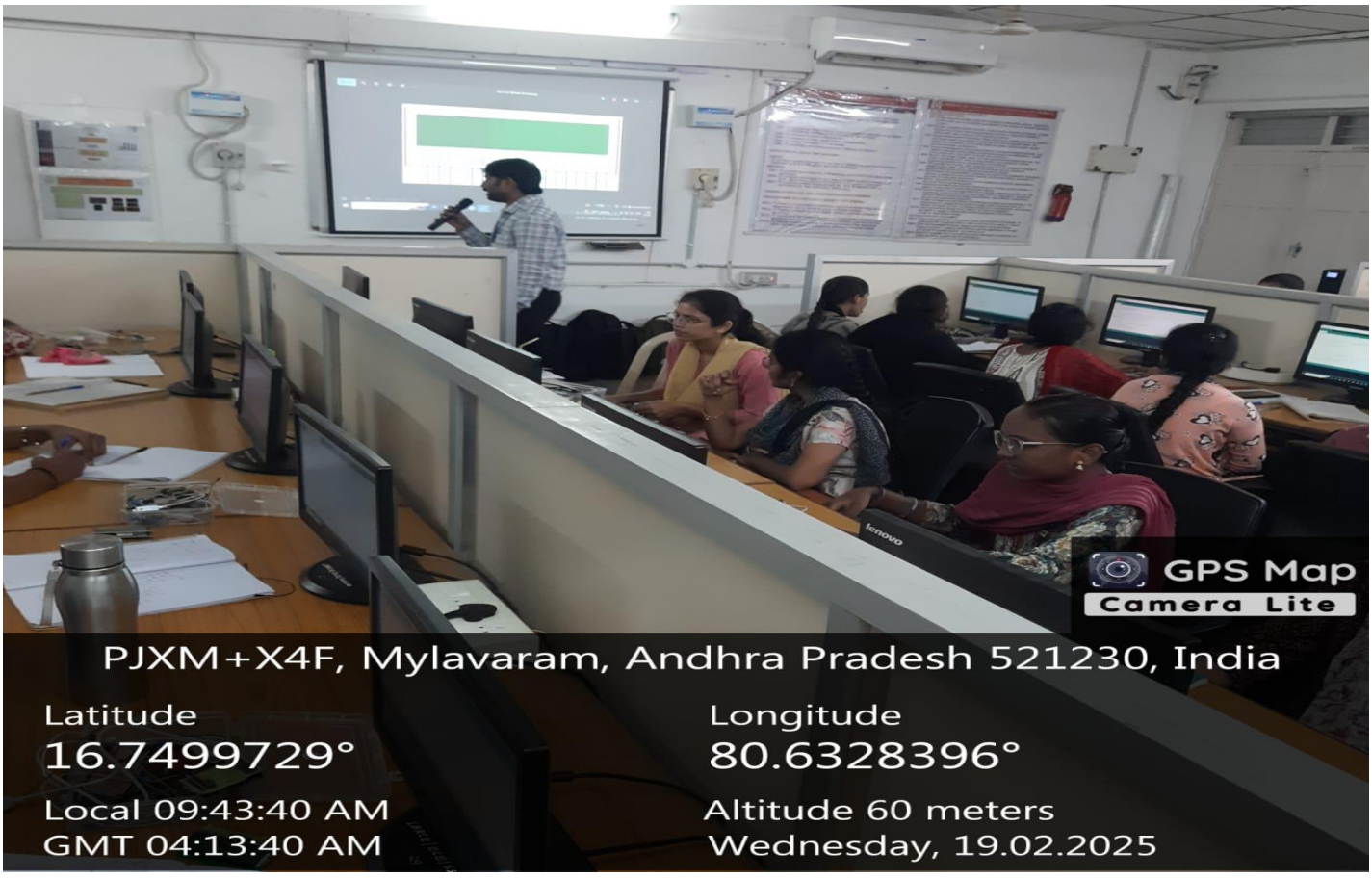


Day-2: 18.02.2025

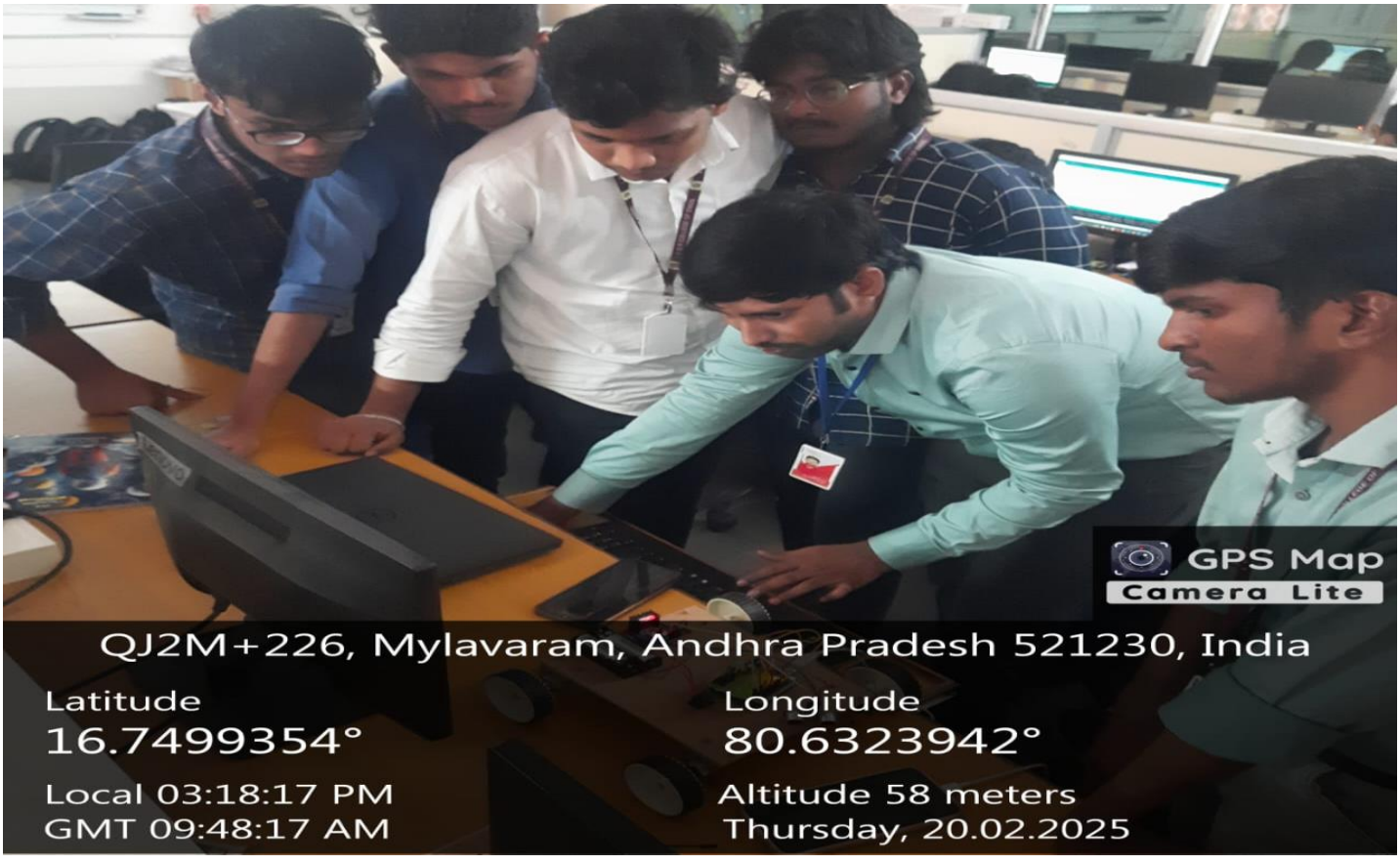




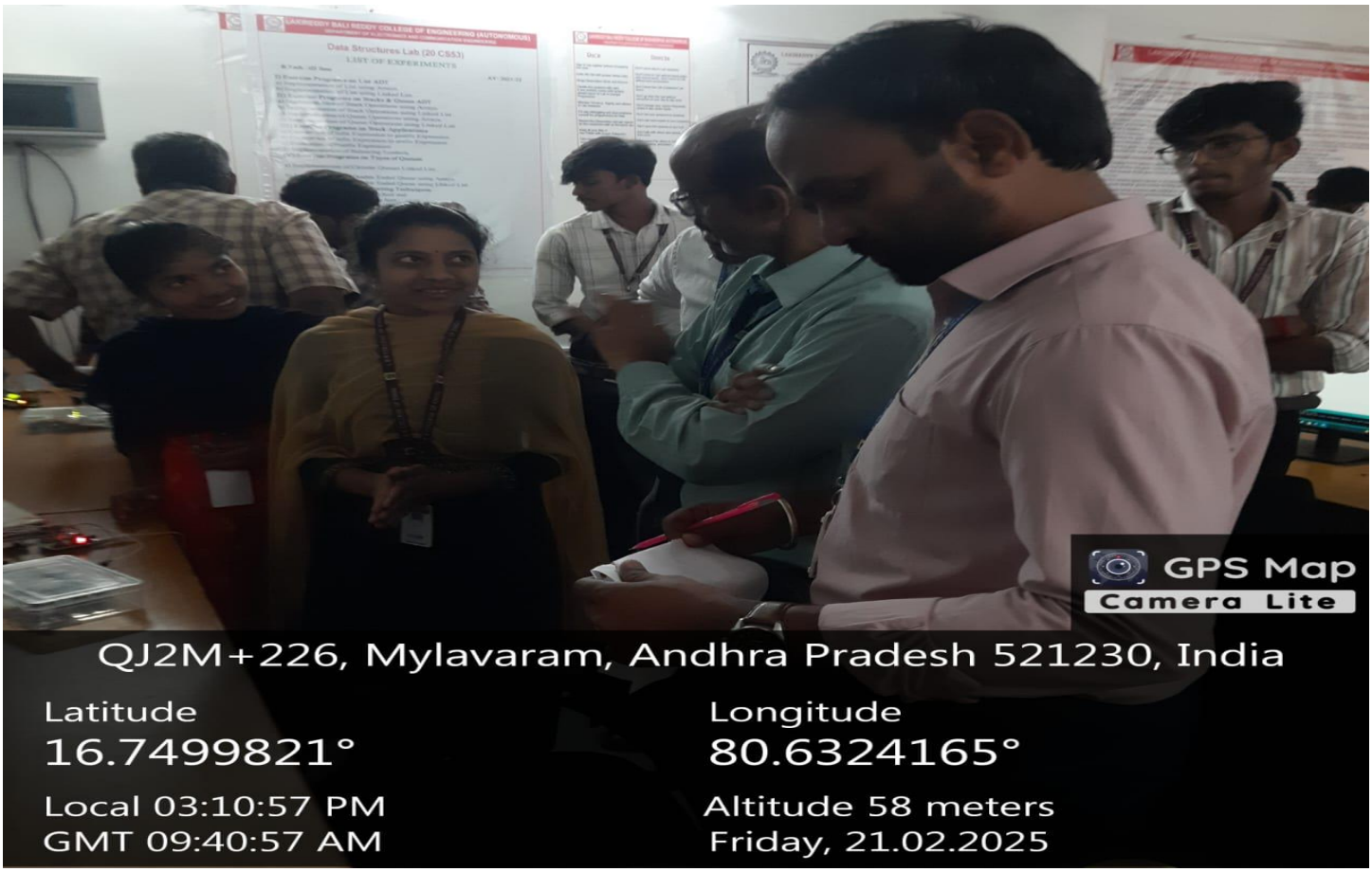
Day-3: 19.02.2025

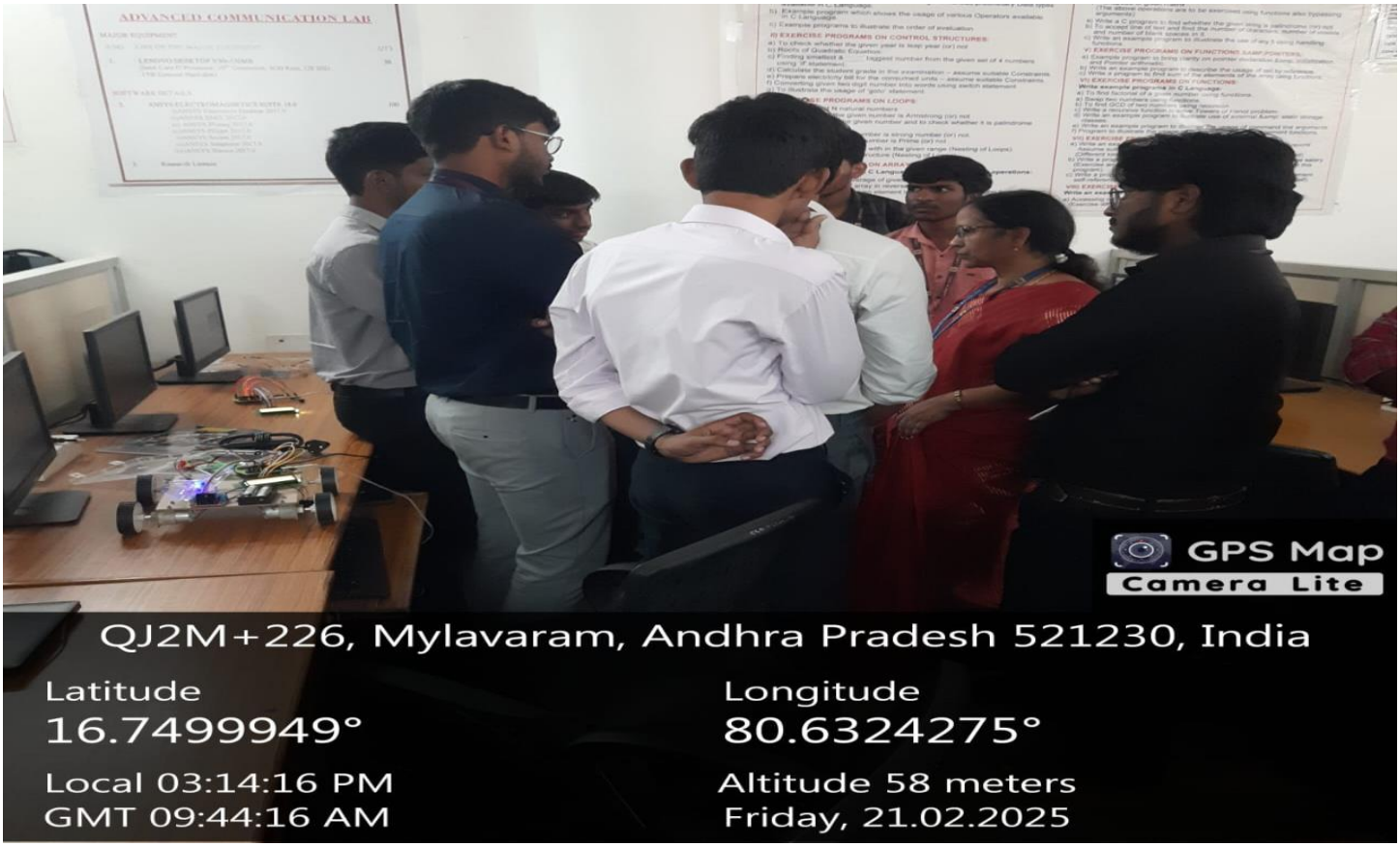


Day-4: 20.02.2025



Day:5: 21.02.2025





Cash Prizes to students based on their performance in Project Expo

First Cash Prize: Rs1200/-

Second Cash Prize: Rs 1000/-

Third Cash Prize: Rs 800/-