DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Date: 10-07-2023

Academic Year: 2022-2023

Activity: Workshop on **"Design of IoT Applications"**

<u>**Consolidated Report**</u>

As per the schedule in the department's academic plan, a Workshop on **"Design of IoT Applications"** was conducted from **03-07-2023** to **07-07-2023** for II-year Students. A total of 101 students have actively participated in workshops conducted on Arduino and Raspberry Pi kits. **Mr. Surendra Babu, Head of Operations TLC Group & his team** are the resource persons for the workshop.
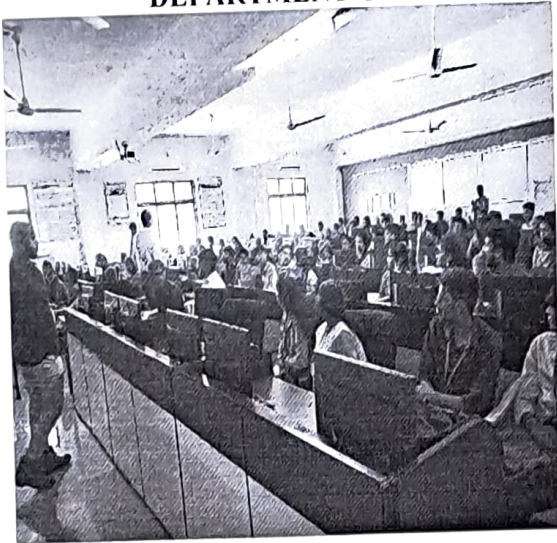
Day 1 (03-07-202): Inauguration of the Workshop started at 10:00 AM, Dr. K. Rameshwaraiah – Head CSE, guided the importance of IoT in our day-to-day life. Then the introduction of the trainer profile followed by starting the session.

The trainer continued with the session topic of Introduction to Embedded Systems, Microcontroller Architecture, Microprocessors and Microcontrollers, Basic Programming Languages, and C vs Embedded C, in the Forenoon Session.

In the Afternoon Session started with the Introduction to Arduino, the Family of Arduino Boards, Pin Configuration of Arduino UNO & MEGA, Basic Programming Tools Operations, Power Supply Designing, and LED interfacing.

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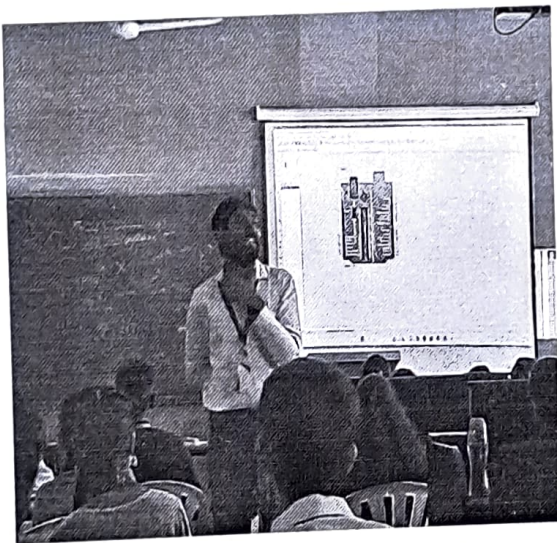
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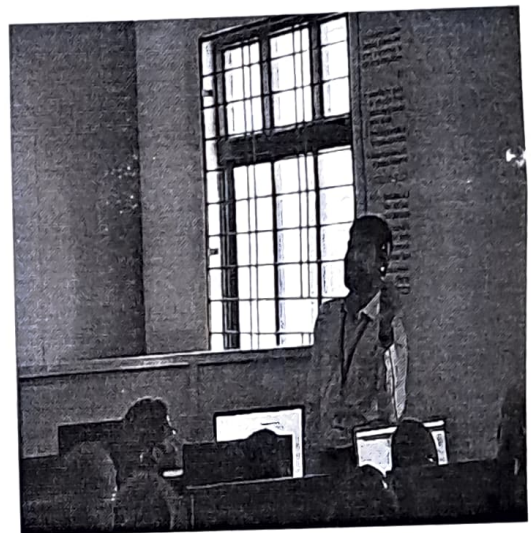
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Started the Session With an Introduction to Embedded System

Topic on the Basic Structure of Diodes (Common Cathode & Common Anode)
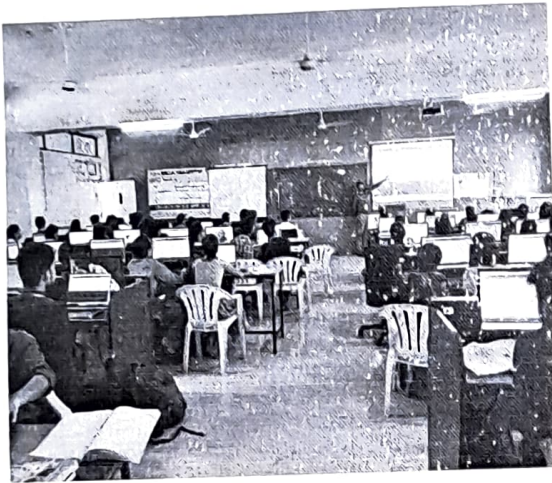

Basic Structure of Arduino Board

LED interfacing to Arduino Board

Day 2 (04-07-202): Started day 2 at 09:15 AM, and all the students revised & practiced the previous day's topics. Trainer started the topics at 10:00 AM by giving an Introduction to various sensors & buttons used in Arduino like the Switch / Push button, IR Sensor, LDR Sensor, and Gas Sensor in the Forenoon Session with Simulation and Hands-on Experience.

In the Afternoon Session started with DHT11 Sensor, Ultrasonic Sensor, Motors, Bluetooth, and Serial Terminal with Hands-on Experience.

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Trainer Explaining Various Sensors

Students Connecting Arduino Kit

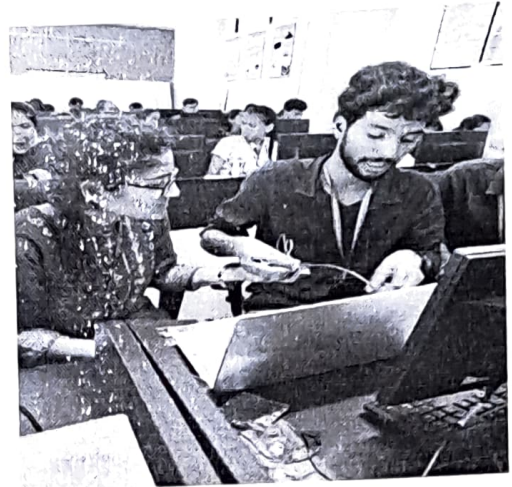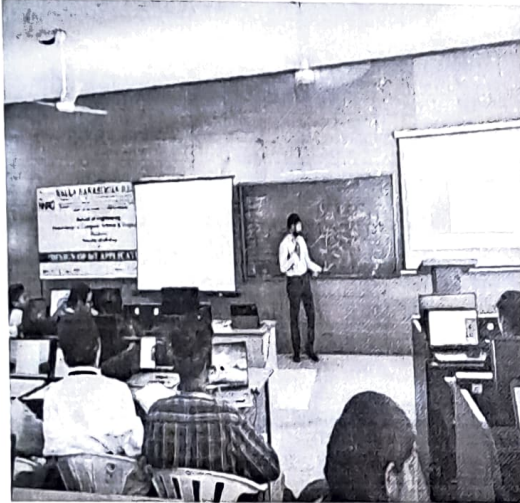*Students Verifying the Output for Various Sensors*

Day 3 (05-07-202): Started day 3 at 09:15 AM, and all the students revised & practiced the previous day's topics. Trainer started the topics at 10:00 AM by giving an Introduction to Python Programming and made all the students practice programs on Python in Colaboratory Software, followed by an Introduction to Raspberry Pi Kit, Download & Installation of Software into a memory card, and how to run OS of Raspberry Pi in the Forenoon Session with Hands-on Experience.

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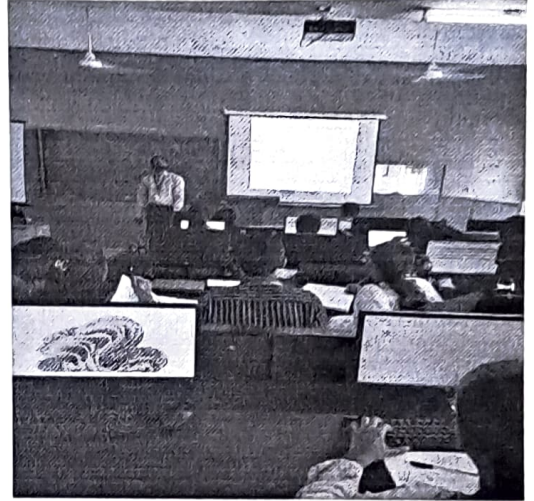
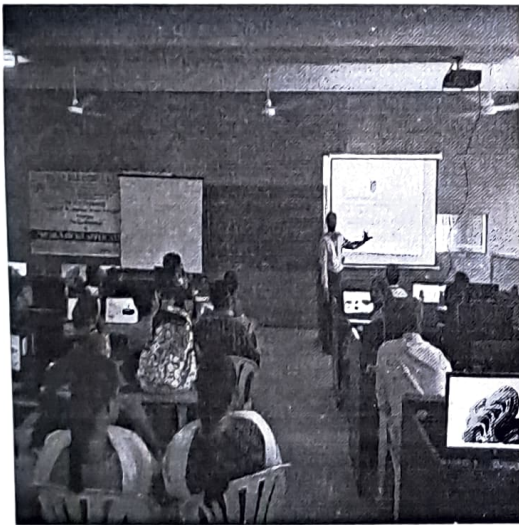## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

In the Afternoon Session, all students practiced the various program in Raspberry Pi and connected various Sensors to the Kit with Hand-on Experience.

Trainer Explaining Concept of Python

Students Practicing Python Programs

Installation of Raspberry Pi

Practicing Installation of Raspberry Pi

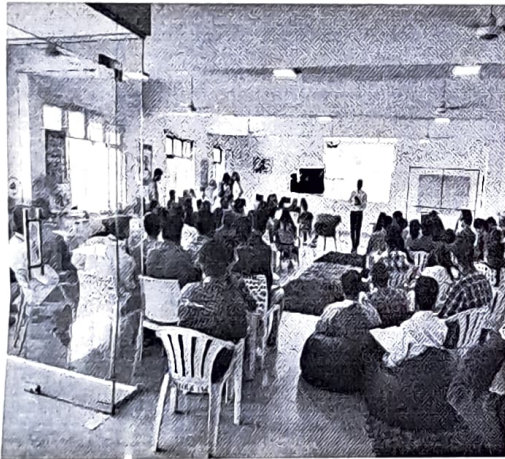*Students Executing the Program*

Students Explaining the Output

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Day 4 (06-07-202): Started day 4 at 09:15 AM, and all the students revised & practiced the previous day's topics. Trainer started the topics at 10:00 AM by revising the previous day's topics and started Introduction to IoT and explaining about interfacing sensors of Raspberry Pi, LED Sensor, Switch / Push Button, IR Sensor, LDR Sensor, Gas Sensor, DHT11 Sensor, Ultrasonic Sensor in the Forenoon Session with Hands-on Experience.

In the Afternoon Session, all the students practiced various sensors and IoT platform of Thingspeak where they can monitor all the data by seating in various locations with Hands-on Experience.

Trainer Explaining Various Sensors

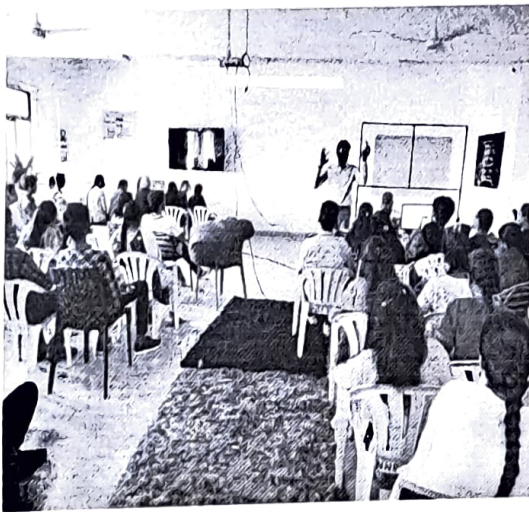*Students Having Discussion*

Students Discussing Output

Students Explaining Output to Trainer

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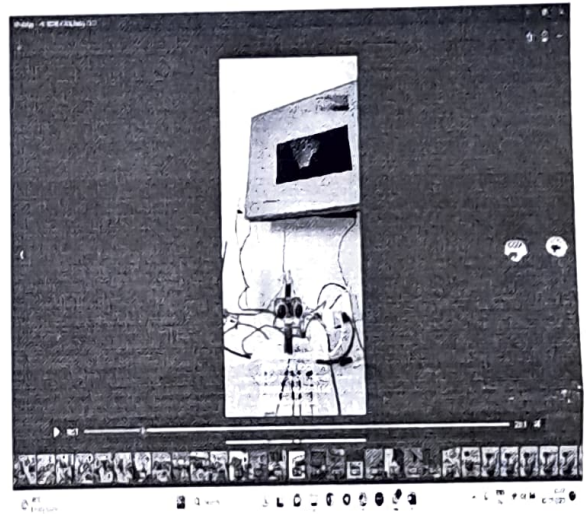CSE ECE ME

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Day 5 (07-07-202): Started day 5 at 09:15 AM, and all the students revised & practiced the previous day's topics. Trainer started the topics at 10:00 AM by revising the previous day's topics and giving real-time examples and told students to show output by using the Motors and Ultrasonic Sensors in the Forenoon Session with Hands-on Experience.
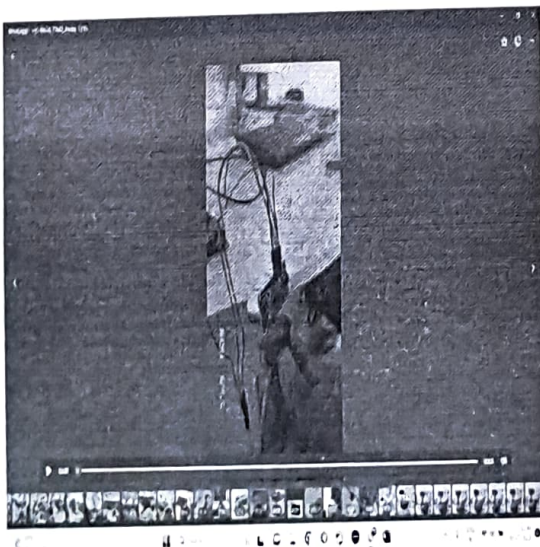
In the Afternoon Session, all the students explained the assigned work done by them to the trainers, and faculty and had a discussion among them.
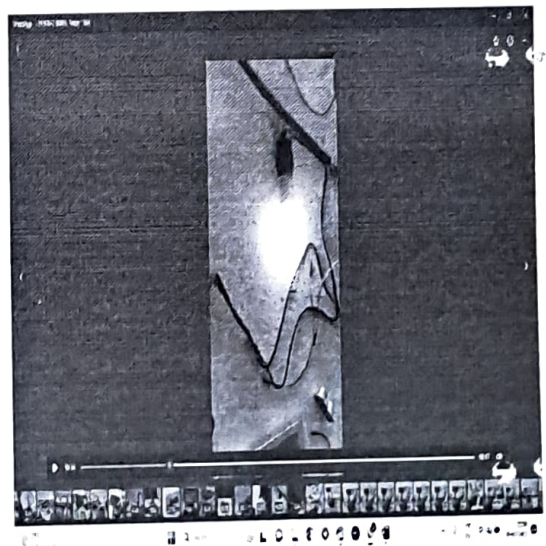

Students Discussing Output

Students Explaining Output to Trainer

Executed Output through Motors & Ultrasonic

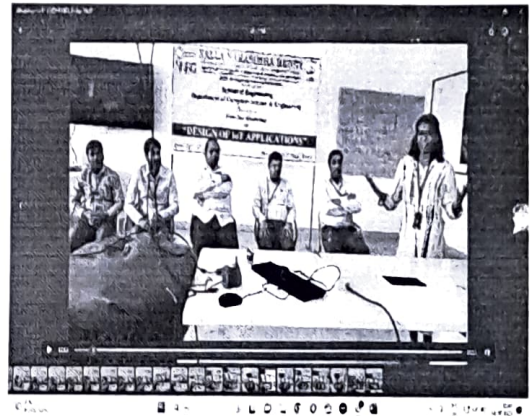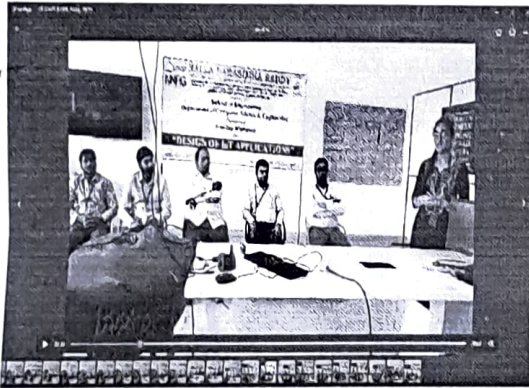*Executed Output of Bulb through Bluetooth Sensors, Motors & LED*

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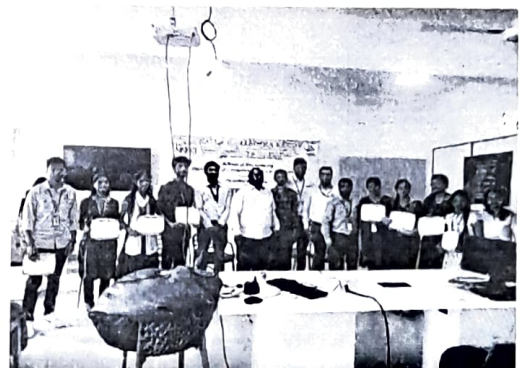
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Valedictory Photos

Dr. K. Rameshwaraiah, Head-CSE presenting memento to Surendra Babu. P

Feedback about 5-Day Workshop from Students

Distribution of Participation Certificates

Faculty Coordinator   **HEAD-CSE**