

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Date: 05-09-2023

Academic Year: 2023-2024

Activity: Workshop on “Real World IoT Project Development using Arduino & Raspberry Pi”

Consolidated Report

As per the schedule in the department’s academic plan, a Workshop on “Real World IoT Project Development using Arduino & Raspberry Pi” was conducted from 28-08-2023 to 01-09-2023 for IV-year Students. A total of 98 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 (28-08-2023): 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.



The banner features a blue and white background with a circuit board pattern. It includes the NNRG logo on the left and NAAC and NBA accreditation logos on the right. The text is centered and reads: 'NALLA NARASIMHA REDDY Education Society's Group of Institutions-Integrated Campus (Approved by AICTE & PCI, New Delhi & Affiliated to JNTUH, Accredited by NAAC with A+ Grade) Chowdariguda (V), Korremula 'X' Road, Ghatkesar (M), Medchal-Malkajiri (D), Hyderabad - 500088, Telangana. (UGC AUTONOMOUS INSTITUTION) www.nnr.edu.in School of Engineering Department of Computer Science & Engineering Organizing Five-Day Workshop on "Real World IoT Project Development using Arduino & Raspberry Pi" Date: 28th August to 1st September 2023 Venue: Incubation Centre, 2nd Floor'.

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Started the Session With an Introduction to Embedded System

Day 2 (29-08-202): 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.

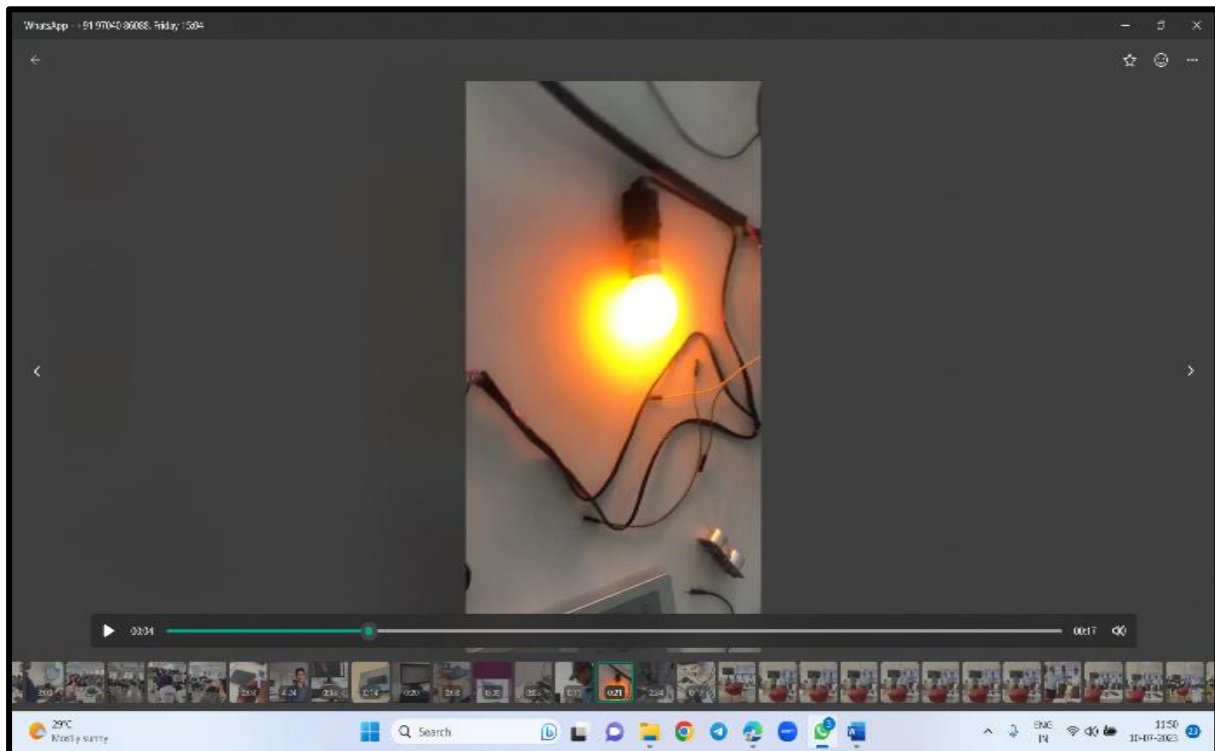


Students Explaining the Output using Arduino for Various Sensors

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Day 3 (30-08-202): 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.

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



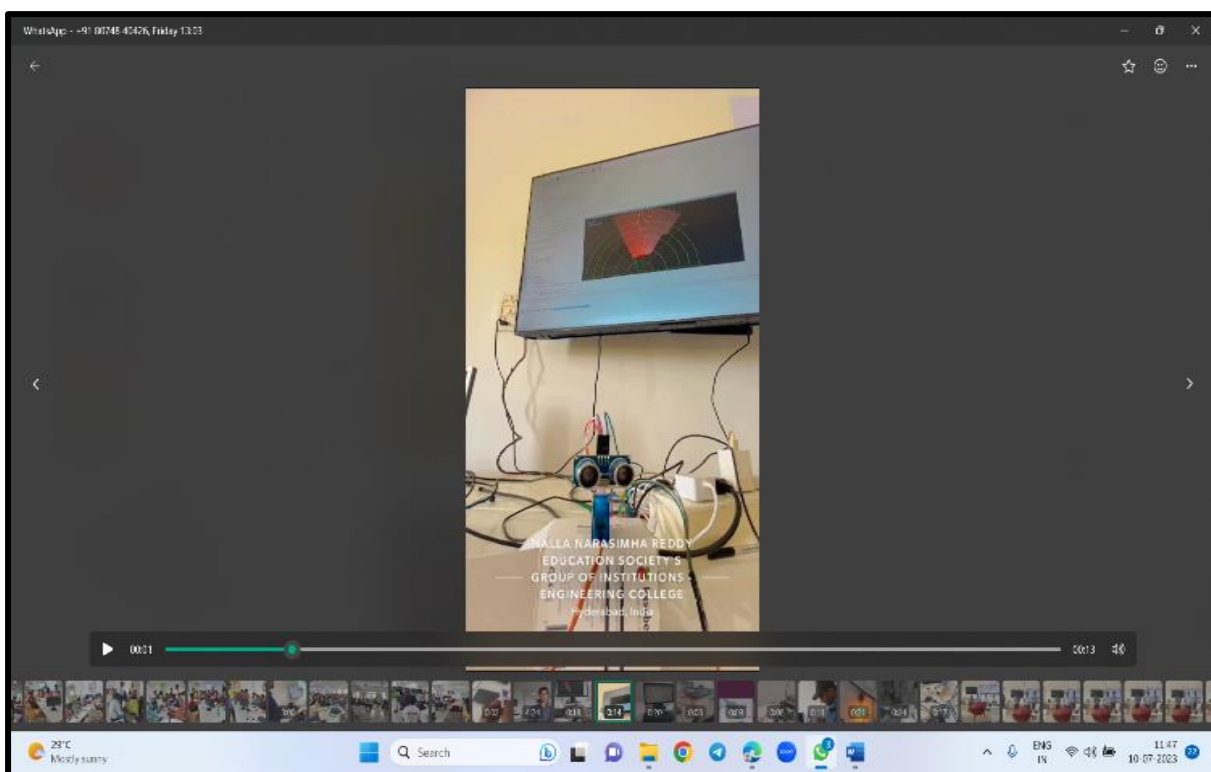
Students Executed the Output of the Bulb by Connecting Bluetooth Sensors, Motors & LED to Arduino board

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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.

Students Executed the Output of the Radar System by Connecting the Ultrasonic, IR Sensor to Raspberry Pi Kit



Students Executed the output of the Radar System by Connecting the Ultrasonic, IR Sensor to Raspberry Pi Kit

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Day 5 (07-07-202): Internal Hackathon

Round 1:

Internal Hackathon was started for all the Batches by 10:00 AM, Trainer Given the Application using **Arduino** duration of Time is 90 Minutes

Out of 10 Teams 5 Teams are Selected for the Next Round

Round 2:

Second Round is Started with these 5 Teams and Trainer Given the Application using **Raspberry PI** duration of Time is 90 Minutes in

Out of 5 Teams 4Teams Got Cash Prizes

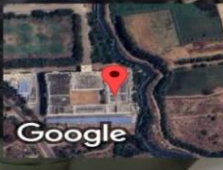
First Prize: P.Abhilash and Team and the Mentor is Ms. P. Santhi Priya, Asst.Prof, CSE

Second Prize: K.Jackson and Team and the Mentor is Mr. G. Venu Gopal, Asst.Prof, CSE

Second Prize: Jai Kishan and Team and the Mentor is Mrs. M. Pooja, Asst.Prof, CSE

Third Prize: Dipendra and Team and the Mentor is Mrs. P. Hari Priya, Asst.Prof, CSE

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Majarguda, Telangana, India
CM23+V38, Majarguda, Telangana 500088, India
Lat 17.402096°
Long 78.653266°
01/09/23 11:46 AM GMT +05:30

 GPS Map Camera



Majarguda, Telangana, India
CM23+V38, Majarguda, Telangana 500088, India
Lat 17.402103°
Long 78.653259°
01/09/23 10:54 AM GMT +05:30

 GPS Map Camera

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Students Explaining Output to Judges

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Valedictory Photos



Feedback about 5-Day Workshop from Students



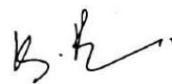
Dr.K.Rameshwaraiiah, Professor & HEAD CSE with Organizing Team

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Distribution of Cash Prize and Certificate to the Students


Faculty Coordinator


HEAD-CSE