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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

**Activity Report
on
“3-Days hands-on workshop
on
Internet of Things”**

from

29/12/22 to 31/12/22

Resource Person/s

Mr. Harish N, cto

Mr. Mahesh Deginal, MD

**Karunadu Technologies Private Limited
Bengaluru**

Event coordinators

Dr. Kavitha K J, Associate Professor *[Signature]*
Mr. Suprith P G, Assistant Professor *[Signature]*

Checked by

Dr. Sri K. K. B S *[Signature]*
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Dr. Y Vijaya Kumar
Principal

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Report of 3-Days hands-on workshop on “Internet of Things”

Dream to the power of infinity

The Department of Electronics & Communication Engineering, GM Institute of Technology, Davangere organized “3-Days hands-on Workshop on **“INTERNET OF THINGS”** during **29/12/2022 to 31/12/2022** in association with **Karunadu Technologies Private Limited, Bengaluru.**

Workshop Background Information:

The Department of ECE has always believed in a practical learning-based approach entrenched with ethical values. The department is persistently dedicated to provide a technical knowledge with high employability skills to the students. To fulfill the gap between industry and academia and meet our commitments, the department has planned in a pipe line of programs such as STTPs, Workshops, Webinars, remote hand sessions in collaboration with Industries.

The department of ECE has identified recent key areas based on current market trends in the core field such as embedded system, Networking, VLSI and IOT for the students to look into in terms of future-proofing.

In the list of many more to come with one such effort, the department has pulled resources for three-day hands on workshop on Internet of Things.

Today, **Internet application development demand is very high.** So **IoT is a major technology** by which we can produce various useful internet applications.

Basically, **IoT is a network in which all physical objects are connected to the internet** through network devices or routers and exchange data. IoT allows objects to be

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ntrolled remotely across existing network infrastructure. IoT is a very good and intelligent technique which reduces human effort as well as easy access to physical devices. This technique also has autonomous control feature by which any device can control without any human interaction.

“Things” in the IoT sense, is the mixture of hardware, software, data, and services. “Things” can refer to a wide variety of devices such as DNA analysis devices for environmental monitoring, electric clamps in coastal waters, Arduino chips in home automation and many others. **These devices gather useful data with the help of various existing technologies and share that data between other devices.** Examples include Home Automation System which uses Wi-Fi or Bluetooth for exchange data between various devices of home.

Workshop Objective:

The workshop has been designed with the following objective:

1. Learn the concept and architecture of IoT
2. Understanding IoT components
3. IoT related protocols
4. Wireless technologies used in IoT enabled systems
5. Explanation on IoT domain related to Hardware, Sensors and connectivity protocols.
6. Walking through various connectivity methodologies.
7. Importance of various IoT cloud platforms.
8. Creating social awareness with demonstrating various real-time applications

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**Summary of Workshop:**

The workshop was inaugurated on 29th December 2022 at 9:00AM. The resource persons, **Mr. Harish. N**, CTO, and **Mr. Mahesh Deginal**, Managing Director, **Arunadu Technologies Private Limited, Bengaluru**, **Dr. Y Vijaya Kumar**, Principal, MIT, **Dr. Praveen J**, HOD, ECE Department, **Prof. Tejasvi Kattimani**, Training and Placement Officer, the Event Coordinators **Dr. Kavitha K J** and **Prof. Suprith P G**, faculties and registered students of workshop were present in the function.

The Principal and HOD addressed all the students and informed to benefit from the workshop and use in real time applications.

A total of **57 students from 5th semester B section** registered and participated in the workshop.

Topics covered in this Workshop:**Day 1**

1. Introduction to Embedded System
2. Introduction to 8051 family
3. Arduino programming
4. Interfacing of seven segment Display with Arduino
5. Interfacing of sensors like LDR with Arduino

Day 2

1. Introduction to IOT
2. Introduction to Raspberry pi
3. Raspberry pi Board Explanation
4. Formatting SD card and Installing operating System
5. Controlling of GPIO Pins and Control LEDs with buttons on GPIO Pins



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Day 3

1. Interfacing of Sensors(ultrasonic and Humidity Sensors) with Rajberry pi
2. Interfacing of wire and wireless connectivity (RFID, Bluetooth, Humidity Sensors) with Rajberry Pi
3. Mini Project

Skills Gained:

- Current scenario/job opportunities of embedded industries.
- Understanding the skill set required in a new employee in embedded industry.
- Understanding the robotics future and scope Understanding the different microcontroller available in the industry & their use.

Outcomes of attending the workshop:

- What “the Internet of Things” means and how it relates to Cloud computing concepts
- How open platforms allow you to store your sensor data in the Cloud
- The basic usage of the Arduino environment for creating your own embedded projects at low cost
- How to connect your Arduino with your Android phone.



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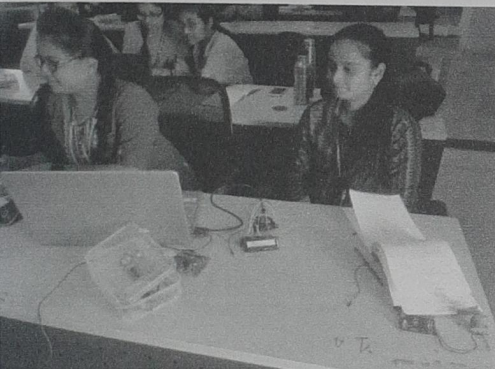
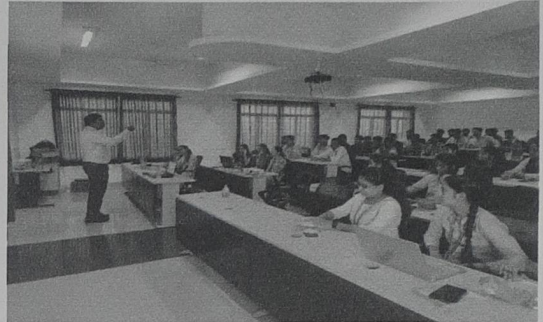
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➤ How to send data to the internet and talk to the Cloud.