A Report on One Day Workshop on
"IOT Applications"
Organised by Department of CSE – AI & ML
06.09.2024

Organized by: Mr. BSH. Shayeez Ahamed, Assistant Professor, Department of CSE – AI & ML
Resource Persons Details: Mr. M. Vamsi Krishna, Asst. Professor, Dept. of ECE; Mr. G. Mohammed Rafi, Asst. Professor, Dept. of ECE
Participants: II Year CSE – AI & ML – 71 Students
Venue: Scale – up class room & EB – 202
Report Received on 09.09.2024
Mode of Conduct: Offline

Department of Computer Science & Engineering – AI & ML has organized a workshop to the students titled **"One Day Workshop on IOT Applications"** on **06.09.2024** (Friday).

Welcome Address:

The event commenced at 09:30 AM with a warm and engaging welcome address to all by Mr. BSH. Shayeez Ahamed, Asst. Professor, Department of CSE – AI & ML, Madanapalle Institute of Technology & Science (MITS), Madanapalle. The Workshop's primary goal is to create self-reporting devices that can communicate with each other (and users) in real time. The program motivated the students with insights of how to accelerate their career and sharpen their skills in the field of IoT & Sensors. The program also highlights the latest emerging trends and career opportunities in IoT area.

Keynote Address:

Dr. S. Padma, Associate Professor & Head, Department of CSE – AI & ML, Madanapalle Institute of Technology & Science (MITS), Madanapalle welcomed the resource persons with her keynote address and motivated the students to enrich themselves.

Dr. C. Kumar, Asst. Professor, ECE, & Instructor, Cisco Networking Academy, MITS, adanapalle explained about the Raspberry pi in IoT & different sensors related to the IoT. He motivated the students to enlighten among themselves by utilizing the workshop.
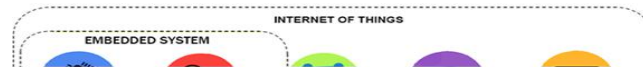
Resource Person Lecture:

Mr. M. Vamsi Krishna, Asst. Professor, Dept. of ECE, MITS, Madanapalle explained about the IoT components & its sensors.

The resource person shared the following points in the workshop

- The resource person highlighted the impact of IoT courses, components of IoT & IoT Sensors.
- IoT is the network of physical objects or "things" embedded with electronics, software, sensors and network connectivity, which enables these objects to collect and exchange data.
- In simple words, IOT is an ecosystem of connected physical objects that are accessible through the internet.
- It is also referred as Machine- to – Machine (M2M), Skynet IOT = Physical objects + Sensors Actuators & Controllers + Internet
- In IoT, "Things" can refer to a wide variety of devices such as

1. Automobile with built in sensors
2. Heart monitoring implants
3. Biochip transponders on farm animals etc.,

- These devices collect useful data with the help of various existing technologies and then flow the data between other data devices.

He then explained about components of IoT
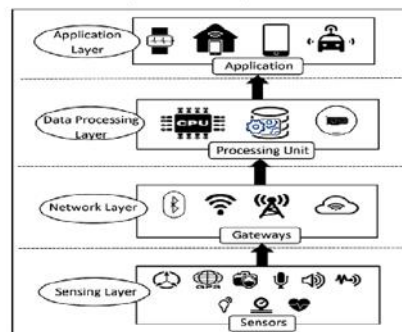
- Later the resource person discussed about technologies of IoT.
  - RFID
  - WiFi IEEE 802.11
  - Barcode e QR Code
  - ZigBee IEEE 802.15.4
  - Sensors & Smart phones

Making IOT with Arduino:

- The "Internet of Things" (IoT) is a huge network of connected electronic devices that collect data and share it without any help from a person.
- Arduino has a wide range of development boards, from 8-bit to 32-bit microcontrollers, including those that work with Bluetooth and WiFi.
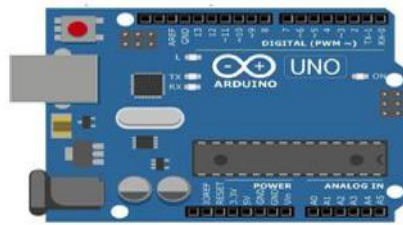- Arduino is the perfect platform for starting the first Internet of Things project!
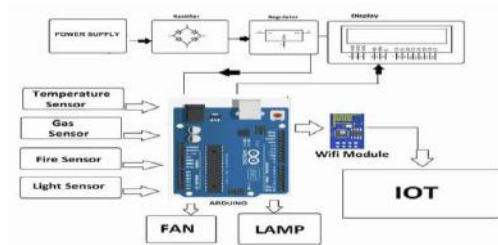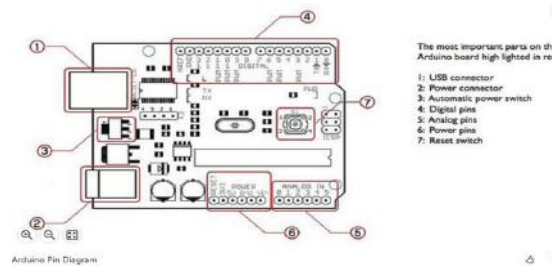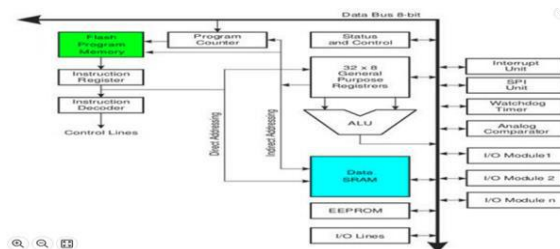
Figure 1.1 Arduino UNO Board (ATmega328p)

IOT based Control of Fan and light using Arduino:

Arduino Technology:

The most important parts on the Arduino board high lighted in red:

1: USB connector
2: Power connector
3: Automatic power switch
4: Digital pins
5: Analog pins
6: Power pins
7: Reset switch

Arduino Pin Diagram

Arduino Architecture:

- Later the next resource person Mr. G. Mohammed Rafi explained about the Arduino architecture, pin diagram & different pins present in the board.

- All the students from the CSE – AI & ML visited the Lab which is present in EB – 202 for practical explanation.

- Using the boards, the resource person explained how the boards will work when a code is compiled through the personal computer.

- All the students from the workshop using the boards executed the code through the computer & analysed the working of sensors through Arduino.

Vote of Thanks:

The workshop formally concluded with a vote of thanks delivered by Mr. BSH. Shayeez Ahamed, Assistant Professor, Department of CSE – AI & ML. He expressed sincere gratitude to resource persons for the time to share his expertise. He extended his thanks   to the HOD, Principal, and the Management for their support to conduct the workshop.

Outcomes:

At the end of Workshop, Students will be able to

1. Understand the necessity of IoT components.

2. Understand the IoT applications & usecases.

3. Understand the IoT & Arduino architecture.

4. Analyzing the practical implementation of Arduino boards.