



Internet of Things (IOT) With NodMCU

Day 1: Let's Learn Embedded System

Description:

This topic is regarding the introduction of Basic Electronics and Embedded System.

Technical Content with Duration

- Introduction of Basic Electronics.
- Introduction to Embedded System.
- Introduction to Embedded C.
- Kit Content Description.

Day 1: Let's Start Arduino

Description:

Under this topic, we will cover how to install Arduino Software. Use of Arduino user interface. Types of Arduino.

Technical Content with Duration

- Introduction to Microcontroller.
- Difference between AVR, 8051, PIC and Arduino.
- Introduction to Arduino platform.
- Install Arduino Software on laptop.
- Use of Arduino IDE
- Make your 1st Sketch

Day 1: Explore Arduino for Automation/Robotics

Description:

This topic will introduce the students how to Blink LED, use of Switch, Arduino Serial. Operate Relay, make automation and robotics project.

Technical Content with Duration

- Blink LED Using Arduino.
- Use Switch to Blink LED in different pattern.
- Interfacing IR
- Interfacing Sound Sensor
- Use of serial monitor.



- Display value of Sensor on serial monitor
- What is automation?
- Run relay from Arduino.
- Make an automation project (light operated relay or automated light control system)

Day2: Introduction to Serial Communication

- USART Introduction.
- Initialization of USART.
- Sending data by Serial communication.
- Receiving data by Serial communication.
- Controlling Bot through Mobile App. (Android App.

Day2: Introduction to WiFi Module

Description:

Hardware description to WiFi module and basic interface.

Technical Content with Duration

- Introduction to WiFi module (ESP8266)
- AT command Set for WiFi module.
- Use of PUTTY/Hyper Link.
- Connect to WiFi Network.

Day 2: Connect to Web Server through Arduino.

Description:

This module will teach the students how to Establish Connection with Website and fetch data to perform automation through Arduino

Technical Content with Duration

- Interfacing WiFi module with NodMCU.
- Use of Serial Monitor
- Connect to WiFi from NodMCU.
- Connect to website from NodMCU.
- Receive data from web server on NodMCU.



Day 2: Perform Automation through Arduino.

Description:

This module will teach the students how to Establish Connection with Website and fetch data to perform automation through Arduino

Technical Content with Duration

- Receive data from web server on Arduino.
- Manipulate data received from web server to perform automation (Relay Control).

Major Project Covered:

- LED's Patters
- Digital Counter Using LED's
- Display the Current Strength of Cinema hall on LED's
- Control High Voltage Operated Devices Using Relay
- Mobile Control Robot
- Controlling Bot Using Computer (Serial Communication)
- Controlling Bot Using Bluetooth Device
- Controlling Home Appliances Using Bluetooth
- Controlling Home Appliances Using Wifi
- Uploading Sensor Data On Server using Wifi
- Controlling Home Appliances Using Web-Application over Internet