

End to End IOT Training for Corporates (54 Hours)

SESSION-1: Basic IOT Architecture (2 Hours)

- End-To-End IOT Architecture with detailed explanation
- IOT Application or Use-Case with IOT Analytics
- IOT Market Landscape/Business or JOB opportunities in detail
- Availability of Readymade IOT Hardware + Software + Platform solutions

SESSION-2: Hardware Design & Interfacing (4 Hours)

- Embedded Hardware Overview
- Arduino Programming Fundamentals: Arduino IDE
- Hands on Session: Read Real world data from Analog/Digital sensors & Actuators/Output interfacing with microcontroller.

SESSION-3: Environmental Applications on thing-speak IOT cloud platform (4 Hours)

- Connectivity Protocol- GPIO(Wired)
- Communication Channel- Ethernet
- Messaging Protocol- REST/Web Socket
- IOT Cloud Platform- Thing Speak IOT Platform

SESSION-4: Energy & Industrial Applications on Blynk IOT cloud platform (4 Hours)

- Connectivity Protocol- BLE4.0/Bluetooth(Wireless)
- Communication Channel- Ethernet/Wi-Fi
- Messaging Protocol- SMTP/REST/Web Socket
- IOT Cloud Platform- BLYNK IOT Platform

SESSION-5: Enterprise & Healthcare Applications on Thingworx IOT cloud platform (4 Hours)

- Connectivity Protocol- GPIO(Wired)
- Communication Channel- Ethernet
- Messaging Protocol- MQTT/REST/Web Socket
- IOT Cloud Platform- Thingworx IOT Platform

SESSION-6: Build your first End-To-End IOT product using Rasp-berry pi device (4 Hours)

- Getting started with Raspberry-Pi:
- Raspberry-Pi Hardware Description & Interfacing
- Components + Booting
- Wi-Fi/Bluetooth setup
- Accessing the Pi + Rasp-Bean OS
- (Linux) + basic commands + SSH (Putty/X-Ming)

SESSION-7: Play with python/Sensors interfacing & coding with Raspberry-Pi GPIO pins (4 Hours)

- Raspberry-Pi interfacing & python programming:
- Multi-session + Playing with python (Arithmetic Conditions + Loops + functions)
- Analog/Digital Sensor (Input)
- interfacing with GPIO's + Actuator (Output) interfacing

SESSION-8: Smart Home Automation Application on AWS IOT platform (4 Hours)

- Sign in to the AWS IoT Console
- Register a Device in the Thing Registry
- Create and Activate a Device Certificate
- Create an AWS IoT Policy
- Attach an AWS IoT Policy to a Device Certificate
- Attach a Certificate to a Thing
- Configure Your Device

SESSION-9: Node MCU ESP8266 (4 Hours)

- Driver installation on Node MCU
- Flashing Node MCU
- Configuring Wi-Fi Interfacing & connect to the internet
- Connecting Node MCU using IOT Blynk Platform
- Web Server implementation on Node MCU

INTERNET OF THINGS

SESSION-10: Interfacing Raspberry Pi with IBM Bluemix Watson IOT Platform (5 Hours)

- Connecting Raspberry Pi with IBM Watson: Unregistered Mode
- Connecting Raspberry Pi with IBM Watson: Registered Mode
- Node red on Pi a Step towards IOT
- Connecting Pi as a Gateway with IBM Watson

SESSION-11: Setup your own MQTT server on raspberry-pi device (5 Hours)

- Install Hive-MQ/Mosquitto Broker (MQTT) on Raspberry-pi
- MQTT lens & MQTT fx, virtual client to client communication
- MEAN stack: Install MongoDB, Express.js, Angular.js & Node.js to develop front end & back-end.
- Other npm dependencies: Install some other npm dependencies such as Sokcet.io (A web-socket Framework), body-parser, mongoose etc.
- Perform basic REST operation via APIs (PUT/GET/DELETE/POST).

SESSION-12: Develop front end using REST/WEBSOCKET protocol. (5 Hours)

- Route JSON Data in MongoDB (NoSQL)
- Data Binding
- Hybrid App or web
- development in Angular.js (Front end MVC)
- Controllers/Services + Create
- Analytics Model.

SESSION-13: Develop front end mobile App for Android/iOS platform & store data in NOSQL [MONGODB] database (5 Hours)

- Route JSON Data in MongoDB (NoSQL)
- Data Binding
- Hybrid App or web
- development in Angular.js (Front end MVC)
- Controllers/Services + Create
- Analytics Model.

INTERNET OF THINGS