**Course:** Internet of Things

**Program:** Introduction to IOT

**Duration:** 2 days | Certified Training

**Topics**

1. Introduction to IoT

2. IoT architecture and platforms

3. Getting started with various development platforms – Arduino, Raspberry Pi & Intel Galileo

4. Basics and comparison of all sort of development boards like Arduino, Raspberry Pi, Raspberry Pi as an IOT Platform

5. What is Raspberry Pi?

6. Getting started with Raspberry Pi

7. Installation of various Operating systems available for Raspberry Pi

8. Basic configuration process with various operating systems like

- Windows 10
- Raspbian
- Ubuntu Mate
- Snappy core
- OSMC
- RISC OS

9. Introduction to Repositories and libraries

10. Setting up the Raspbian Development Environment

11. Configuring SSH and Remote Desktop

12. Installation of Python-Dev tools and sensor libraries

13. Getting started with Linux and python

**Introduction to GPIO**

**Task 1**

Controlling GPIO without any Programming

**Playing Around GPIO with Python**

**Task 2**

Controlling GPIO with Python

**Task 2.1**

Controlling GPIO with Android

## Sensors

- Temperature sensor (DS18b20)
- DTH11 Humidity Sensor
- Read Switch
- PIR

**Sensor interfacing**

**Task 3** –

Interface LM35 with Raspberry Pi

**Motion sensors**

**Task 4**

Control GPIO using PIR

**Actuators**

- Relay
- Servo motors

- Data acquisition - Sensors Interfacing and controls
- Concept of Networking
- Configuring Static IP and configuring the Wireless communication

**Communication Protocols**

- Bluetooth
- WIFI
- Ethernet
- MQTT
- HTTPS

- Configuration of Dynamic DNS and Port Forwarding
- Cloud Computing & Data Analysis in Amazon Web Services, Windows Azure
- Getting Started with HTTP GET/POST

**Configuring a Web server and database**

**Task 5**

Display the Sensor data via Web Server

- Configuring the Camera to do live streaming via web server.