Certification Course of Fundamentals of Internet of Things (IOT)

Course Description

Almost all objects today can be connected to the internet including washing machines, refrigerators and even organic items like crops. The ability to connect these objects and collect useful data without human interaction is known as the Internet of Things (IoT). In this course participants will explore the concept of IoT. We will explore questions such as what are the components that make up IoT and how these components communicate with each other? Participants will discover the basis of this emerging field using fun, hands-on activities to model various sensors over networks and collect data in an IoT system.

Audience for This Course

Beginners to Expert Network Professionals, security professionals, college/university students, individuals/organization, and participants of all levels are welcome.

Anybody who wishes to learn how to configure and manage IoT devices.

Pre-Requisite

This is a fundamental level course where we teach the IoT from scratch. No special pre-requisites are needed.

Course Content

Module 1:Introduction To Internet Of Things (IoT)

- Future of IoT
- IoT Key Features
- Basic Architecture of IOT
- Demonstration of IOT
- IoT Reference Model
- IoT Wired and Wireless Communication Standards

Module 2: Introduction to Raspberry Pi

- Understanding Pi
- Installation of OS in Pi
- Access Pi via CLI and GUI
- Connect Pi to LAN and WAN
- Learn to Operate Pi Like Pro

Module 3:Introduction to Python

- Get Familiar with Python
- Write Basic Programs
- Use Python to Create IoT Projects

Module 4:Sensors and GPIO Connections

- Introduction to GPIO
- Connect GPIO to Pi
- Interfacing Sensors with Pi
- o PIR Sensor
- o Temperature and Humidity Sensor
- o Untrasonic Sensor
- o Motion Sensor
- o Infrared Sensor

Module 5: Raspberry Pi DIY Projects

- Connect Web Camera to Pi
- Installation of LAMP Web Server
- Make Your Own NAS Drive
- Create a Music/Video Streaming Box

Module 6:Security Aspects of IoT

- What are different Risks Associated with IoT
- OWASP Top 10 IoT Threats
- How to Protect IoT?

Module 7:Conclusion & Next Steps

Training Methodology & Materials

This is a very hands-on course where participants carry out practical exercises in the classroom. The concepts are taught through implementation of real-world use-cases. Our exercises have been carefully designed to replicate scenarios participants will face in real life work conditions. We have adopted a 'Learn by Doing' pedagogical approach - Class room training with practicals. Our trainings are not PPT based.