LoRa deployment for smart cities

Description:

- LoRa (short for long range) is a spread spectrum modulation technique derived from chirp spread spectrum (CSS) technology. Semtech's LoRa devices and wireless radio frequency technology (LoRa Technology) is a long range, low power wireless platform that has become the de facto technology for Internet of Things (IoT) networks worldwide. Everyday municipal operations are made more efficient with LoRa Technology's long range, low power, secure, and GPS-free geolocation features. By connecting city services such as lighting, parking, waste removal, and more, cities can optimize the use of utilities and personnel to save time and money. LoRa Technology has enabled operational efficiencies in these real-world smart city applications,the applications are smart metering and lighting solutions,smart water leakage detection,smat flood sensors,smart waste mangement ,and smart city network etc.

Day 1:

Ø Introduction to the LoRaWAN

• The Internet of Things

• The Basics of Sensors & Actuators

• Introduction to Cloud Computing

Ø The NODE Mcu Platform

Project 1: Displaying Date on Serial Monitor

Project 2: Integrating Sensors & Reading Environmental

Physical values.

Day 2:

Ø Programming fundamentals (C language)

Ø Arduino Programming & Interface of Sensors

- Interfacing sensors with NODE MCU
- Programming
- Reading from Sensors

Project 3: Reading Environmental Values on Android smartphone

Ø Talking to your Android Phone with Arduino

- Connecting Arduino with Mobile Device.
- The Android Mobile OS.
- Using the Bluetooth Module

Project 4: Creating Android App using MIT App Inventor & Sensor Data on the App.

Project 5: Creating Android App using MIT App Inventor & Controlling Devices Connected to Controller.

Day 3:

IoT Projects

Project 6: Control Devices using Localhost Web Server for Home Automation

- Integrating Ethernet Shield.
- Creating Program for Localhost Web Server for controlling devices.
- Integrating Ethernet Module

- Creating App on Twitter