

# INTERNET OF THINGS (IOT)

## CURRICULUM

### ① Introduction to IOT

Understanding IoT fundamentals  
IoT Architecture and protocols  
Various Platforms for IoT  
Real time Examples of IoT  
Overview of IoT components and IoT  
Communication Technologies  
Challenges in IOT

### ② Arduino Simulation Environment

Arduino Uno Architecture  
Setup the IDE, Writing Arduino Software  
Arduino Libraries  
Basics of Embedded C programming for Arduino  
Interfacing LED, push button and buzzer with Arduino  
Interfacing Arduino with LCD

### ③ Sensor & Actuators with Arduino

Overview of Sensors working  
Analog and Digital Sensors



Interfacing of Temperature, Humidity,  
Motion, Light and Gas Sensor with Arduino  
Interfacing of Actuators with Arduino.  
Interfacing of Relay Switch and Servo Motor with Arduino

## 4 Basic Networking with ESP8266 WiFi module

Basics of Wireless Networking  
Introduction to ESP8266 Wi-Fi Module  
Various Wi-Fi library  
Web server- introduction, installation, configuration  
Posting sensor(s) data to web server

## 5 IoT Protocols

M2M vs. IOT  
Communication Protocols

## 6 Cloud Platforms for IOT

Virtualization concepts and Cloud Architecture  
Cloud computing, benefits  
Cloud services -- SaaS, PaaS, IaaS  
Cloud providers & offerings  
Study of IOT Cloud platforms  
ThingSpeak API and MQTT  
Interfacing ESP8266 with Web services






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