Report on Workshop,

"**Build Your Own Internet of Things**"

Organized by the Department of Electronics and Communication Engineering in association with AZTECS

Date and Venue

The Workshop took place on 23.07.2018- 25.07.2018 at Mar Baselios Christian College of Engineering and Technology, Peermade

Resource Persons

Neju AM, Arjun Raveendran

Participants

- BTech Final year Students (43 Nos.)

Objective of the Workshop

The main objective of the workshop is:

- To learn Embedded system and introduction of Internet of things

Duration of the Workshop

- Three Full Day (6 Hours)

Certification and Awards:

Certification of Participation to all

Workshop Contents

Introduction

- Introduction to Embedded Systems
- Introduction to Microcontrollers and MicroProcessors
- Criterias for choosing a microcontroller

PIC Microcontroller

- PIC Architecture
- Architectural features
- Pin description
- Memory organization
- Introduction to Embedded C Programming

Introduction to PICC Compiler

- Creating Applications
- Creating Projects
- Creating new Source files
- Compiling and running of a program

I/O port programming

- Study of input output ports in PIC Microcontroller
- Port Operations with LED and dip switches

Introduction to Proteus for Simulation

- How to draw circuits and simulate various programs in Proteus

UART module

- Study of UART module in PIC Microcontroller
- Serial communication concepts
- Familiarization with voltage level shifter

Analog to Digital Converter

- Study of ADC in PIC Microcontroller
- Interfacing LM35

Interrupts

- Concepts of interrupt in PIC Microcontroller

Real World Interfacing

- Interfacing LCD Module
- Interfacing Hex keypad

Introduction to Internet of Things (IoT)

- Applications of IoT in various business sectors
- IoT architecture & building blocks
- How to build an IoT product
- Sensors & Interfacing
- Software & Hardware platforms for IoT implementation
- Introduction to NodeMCU (ESP8266)
- Introduction to IOT Cloud Platforms and API
- TCP /IP/HTTP Protocol
- Client and Server Communication
- Introduction to ThingSpeak, IOT Cloud
- Uploading sensor data to Cloud using API's
- Data Visualization, Data Analytics, Plugins, Import & Export
- Sending and Receiving Data from IOT Cloud using ESP8266
- Uploading sensor data data to ThingSpeak Cloud using wifi

Prepared by,
MARIA JOSEPH