ICL Workshop

Internet of Things:
Simple techniques to design IoT nodes.

Patrick R. Kane

Aims:

The workshop will target the following three objectives:

A- To provide participants with an overview of low-cost IoT (BLE, Wi-Fi, Zigbee) kits available for educational use.
B- To provide an overview of the typical IoT syllabus.
C- To provide participants with a hands-on experience of creating their own IoT nodes using Cypress PSoC CY8CKIT-145 and CY8CKIT-042-BLE kits (participants will keep the kits after the workshop).

Main topics:

IoT kits for education

PSoC Architecture overview

PSoC Creator tutorial

My First PSoC Design (hands-on lab)

BLE protocol overview

My First IoT (BLE) Design (hands-on lab)

Using CySmart (a BLE App), on your PC (hands-on lab)

Using CySmart on your iOS or Android device

LED lighting control (hands-on lab)

EZ-BLE module overview

CapSense design using BLE (hands-on lab)

The workshop is designed for 3 hours (Can be shortened if needed).

Target Group:

It is open for all who are interested in introducing IoT topics to students in their classes.

This workshop is an amalgam of a Cypress BLE customer training workshop using the PSoC 4 BLE kit and a mini-workshop using an EZ- BLE enabled PSoC 4000s kit. The BLE workshop has been delivered 100s of times to students, professors, and Cypress customers around the world.

Currently, the presenter is preparing it in the form of short sessions for an online PSoC BLE certificated class for the public at large.

Background knowledge expected of the participants:

Basic knowledge of computers, and embedded electronics – everything is embedded in the chip so there will be no soldering etc.

Attendees will be expected to bring their Windows laptop (MAC is OK if it is running VMware, Bootcamp etc.). If you do not have a Windows Laptop you can pair up with someone who does.

Workshop Activities:

Three to four hands-on labs will be completed by the attendees.

The Presenter:

Patrick R. Kane

- BSEE: San Francisco State University
- MBA: from University of Phoenix
- Doctoral candidate in Educational Technology
- Adjunct professor at University of New Hampshire in CEPS department
- 11+ years at Cypress as Director of Cypress University Alliance
- 13+ years at Xilinx in various roles including applications engineer and manager of Xilinx University Program
- Author of Xilinx laboratory manual to accompany Cook's Digital Electronics with PLD integration
- Delivered numerous workshops related to Xilinx and Cypress technologies.
- Research interests include IoT, embedded system design, and Engineering Education.