FUBAR DIY IOT WITH ESP8266

TOPICS (DAY 1)

- Intro to IoT with ESP8266
- Hardware overview
- Install of Arduino IDE & E5P8266 Support
- Blink "Hello World“
- Questions

WHY ESP8266 ????

- Dirt cheap WiFi enabled microcontroller available as a FCC certified module.
- Esspressif published the SDK for the system & supports the open source community.
  - Projects have adapted embedded lua script & micro python to run on the modules.
  - There is support to program from within the Arduino & robust C++ libraries to make full use of capabilities.
- Module can be bought in “NodeMCU” dev board with USB interface, allow programming like Arduino Uno.

ARDUINO UNO TO ESP-8266 (NODEMCU) COMPARISON

	ESP 8266	Uno
CPU	MIPS 32 @ 80 mhz	8 Bit AVR @ 20 mhz
RAM	64 Kb prog + 96 K data	2 Kb
Flash	4 Mb	32 Kb
Digital I/O	13	13
Analog (A/D)	1 x 10 bit	6 X 10 bit
WiFi	Yes	No
Power	3.3V	5V
USB to Serial	Yes (Micro)	Yes

INSTALL INSTRUCTIONS

- Download IDE from Arduino.cc https://www.arduino.cc/en/Main/Software
- Go to GitHub for ESP8266 Arduino config & sample code https://github.com/neilpf2014/Fubar-ESP8266-IOT

WHAT'S IN THE CLASS KIT ?

- NodeMCU 1.0 dev board
- APA106 (WS2812) addressable RGB LED https://cdn.sparkfun.com/datasheets/Components/LED/COM-12877.pdf
- 830 point solderless bread board
- USB cable
- Some misc. wires