**Clients Problem Statement**

The ESP8266 SoC IoT module (from Expressif) is a low-cost System on a Chip which includes an 802.11 wi-fi access point, RS232, serial interface, flashable ROM, SRAM, at least two tri-state programmable IO pins and (on some models) ADC and PWM. Programming is in C using an SDK tool chain.

Example code for GPIO access and simple webservers is available online but it is very scattered, potentially unreliable and written at a high knowledge assuming level. There exists no guide and or tool chain library to ease users through the initial stage to facilitate quick usage of the chip for practical purposes.

**Clients Solution Request**

The team is to review and experiment with different models of the ESP8266, review and test the various tutorials and primers on the internet in order to compile, test and publish a definitive guide to programming / flashing / using the ESP8266.

*Features*

- Minimal prior knowledge is required.
- Windows installer to set up entire environment in one file.
- No dependencies on outside links and resources,
    - Any open source code used should be forked and backed up.
- Several tutorials ordered in increasing complexity which assist user to proficient level of use.
    - Flashing
    - Scripting
    - Using GPIO ports and other features of chip

*Constraints*

- Must use ESP8266 WiFi chip.
- Tool chain in C language.
- Reasonable amount of knowledge may be assumed, however where so *reliable links must be supplied to fill such knowledge gaps*.
- Platform independent is preferred.

*Quality Expectations*

- All material should be self-standing and not rely on links that may go down in the future.
- Well documented such that next semester a team may continue the work with efficiency.
- Tutorials should be easy to follow, requiring no guesswork.

*Timeline / Schedule Expectations*

The features requested should be delivered with quality documentation before the date ???____ ???