ECE471: Embedded Systems – Homework 1

Due: Thursday 11 September 2014, 9:30AM

For this homework short answers will suffice. There isn't necessarily a right or wrong answer for some of the questions, but be sure to explain your reasoning.

To submit, create a document with your answers (text, pdf, libreoffice, MS Office if you must) and e-mail them to *vincent.weaver@maine.edu* by the homework deadline. Title your e-mail "ECE471 Homework 1" and be sure your name is included in the document.

1. The iPhone 5s has an Apple A7 processor in it. This processor is a dual-core 64-bit CPU running at 1.3GHz, with large L1, L2 and L3 caches. It also has a powerful GPU (graphics unit). Would you classify this device as an embedded system? List 3 of the characteristics given in class for what defines an "embedded system" and say whether the device meets them.

2. You buy a thermostat which is powered by an 8-bit AVR processor. This processor runs at 10MHz and the only interface is a small LCD display and a few buttons. Would you classify this device as an embedded system? List 3 of the characteristics given in class for what defines an "embedded system" and say whether the device meets them.

3. The Raspberry Pi contains a BCM2835 SoC. Onboard is a ARM1176JZF-S CPU. What do the letters "JZF-S" indicate about the processor?