ROSE-HULMAN
INSTITUTE OF TECHNOLOGY

To: Dr. Mark Yoder

From: Michael McDonald

Subject: Problem Set 1 (Exercises 01, 02, 03, 05, 09, 16) Memo

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1 Weekly Summary

This week was devoted to setting up a dedicated Linux box to develop on the BBB, as well as setting up the BBB and ensuring that I could get access to Git and compile, run, and then commit code.

1.1 Exercise Summary

- Exercise 01: Exercise 01 involved getting a development machine set up as well as gathering the required materials necessary for the class, such as a mouse, keyboard, SD cards and associated USB readers, etc.
- Exercise 02: Exercise 02 involved unboxing the BBB, installing the drivers, and running the webserver off the BBB. This involved checking the basic functionality of the BBB and being able to SSH into it. This also involved running host.ipForward.sh in order to deal with ip forwarding to the BBB.
- Exercise 03: Exercise 03 involved installing the latest image (06_20) and flashing it to eMMC.
- Exercise 05: Exercise 05 involved installing Git and pulling the course files onto both the host development machine and the BBB.
- Exercise 09: Exercise 09 involved registering for the Beagle and ECE 497 Google Groups, as well as getting an account on eLinux.
- Exercise 16: Exercise 16 involved getting familiar with Git, making changes to a file, then committing and dealing with merge conflicts.

Objective	Exercise	Status	Notes
Install Linux Dev Machine	Exercise 01	Completed	Running Ubuntu 12.04 LTS on my Rose Laptop.
Gather required materials	Exercise 01	Completed	8GB SD cards on order from Amazon (they are $0.20 more than 4GB). Also, the 5-in-1 card reader isn't supported in Ubuntu (at least not out of the box, I'm working on a solution), so I got a MicroSD to USB converter.
Unbox BBB and follow instructions in start.htm	Exercise 02	Completed	Couldn't SSH into the bone originally, so deleted etc/dropbear/dropbear_rsa_host_key and I could SSH into it.
Install 3.8 06_20 Kernel	Exercise 03	Completed	Only hold the BOOT button for a second or so, otherwise it fails to flash to eMMC.
Set up Git	Exercise 05	Completed	Git is now set up on both the BBB and my dev machine, and the course materials have been cloned.
Sign up for Google Groups and eLinux	Exercise 09	Completed	Had to wait a little for my eLinux account, but the others were fairly easy to set up.
Pulled helloWorld.c and modified it	Exercise 16	Completed	I had some extra time so I just did this as well. I will pull again and modify it in class to deal with merge conflicts. I'm using meld instead of the normal command line diff, and it's quite nice.

The main points I took away from these exercises were the following:

- Even though there are instructions, everything is slightly different, so you have to be agile and be able to adapt to slight differences in software or hardware in order to complete everything properly.
- Sometimes it's easier to make a rough pass, learn what the main purpose of installing software or typing a specific command in, and then re-do everything, just to get a hang of what the purpose actually was.
- A strong understanding of the Linux command line is a must for this class, and we really only touch on it in CSSE 332 (or when people use it individually), but I would like to see a brief intro to it for people who may not have as good a grasp or may have forgotten the specifics of how to use certain commands.

I added several things to the course materials:

- Added a LaTeXmemo class and an example to the exercises.git repo under /tex.
- Added a section to Exercise 16 on setting up a graphical merge tool.