CPSC334 Creative Embedded Systems

Observations: Lab 2, Configurations, imaging, ssh, email, scripts and rc.local

Below are a list of observations, ideas, and solutions from our lab yesterday. These should inform your future lab sessions as well as serve as a reminder of tasks, solutions, and topics not included in the slides.

Team/individual performance:

1. Despite horrific technical difficulties with the room, many managed to complete all tasks. There were a few that completed only 1-2. Success seemed to relate much to teamwork and the facility of team-members with different tasks who shared solutions.
2. There were problems with Raspbian Images. Some had not yet even powered-on to test their RPis. This is bad. Everyone should have at least tried to plug the pi in (somewhere) to test the disk image. Plenty of locations on campus have access to a monitor, keyboard, and mouse.

Technical Notes:

1. Everyone should complete the tasks for this lab. Use AKW for displays/peripherals. We have requested access for all of you. Please let us know if your card does not work on the door. The lab features 4 workstations with card readers, monitors, peripherals, etc.
2. For disk-image writing: Etcher ONLY (balendaetcher) with the latest Raspbian (Full) image. You will (obviously) need a working image for Task 2. The workstations in 123 have SD card readers.
3. Everyone *must* purchase a power supply for their Pi and have it delivered prior to our next lab.
    a. 5v, 2.5 mA (or higher -- some are 3)
    b. micro-USB (pi-side) to wall-wort (recommended)
4. Some still need a functioning Unix-ish environment -- please find a way to get a working non-windows dev environment up and running -- you are at a disadvantage until you do…
5. Think about security - it might actually matter! If your raspberry pi has ssh enabled, anyone on the network can attempt to ssh with the default pi password. If you have set up your email set up with ssmtp and the password saved in plaintext in a configuration file, anyone who accesses your pi can get access to your gmail account. If that gmail account is your main account, you are in trouble. Another problem - maybe you have git on the pi and configured it to remember your password - if someone gets the timing right, they can make malicious commits and get your account banned.
6. Although HDMI input (sink) and output (source) ports look the same - the underlying hardware is different. You will not be able to plug your pi into your laptop to use the laptop screen as a display*.

*The iMacs in the early 2010 had bidirectional mini DisplayPort ports and specialized software that allowed you to use the iMac as a computer or monitor. This is a relatively exotic setup