HWD101: Lab #3

Raspberry Pi Setup

Purpose:

Setup and update your Raspberry Pi and perform some basic administration.

Pre-Lab:

* Bring Raspberry Pi with accessories / equipment

Activity:

1. Take out the Pi from the anti-static bag.
2. Cover the 2 major chips on front side with heat-sinks (if the Pi comes with one).
3. Don’t put the Pi in the case right away, but when you put it down on table, make sure you use the bottom part of the case, or the anti-static bag.
4. Take the micro-sd out of the holder and put it into the Pi micro-SD slot.
5. Connect the HDMI cable, keyboard, network, mouse FIRST before the power cable.
6. **The power to the Pi is the last thing that is plugged in and the first thing that you plug out!**
7. NOOBS (New out of the box) is the installer file that will give you a graphic display.
8. You may see multiple applications that you can select inside of NOOBS, but choose the Raspian distribution, (usually the first one) and then press INSTALL.
9. This may take 1 to 1 ½ hours to install the Debian distribution that is designed for the Raspberry Pi.
10. The machine will reboot, and then come up into the Raspian Desktop.
11. Take a look at some of the software that is installed on the Pi by default (Chromium, LibraOffice).
12. Ensure an Internet connection is present on the Pi. Try opening a browser and launching a website.
13. ***WARNING: This can take over 60 minutes to complete!***

Bring up the terminal window and type in the following:

* 1. sudo apt-get clean all
  2. sudo apt-get update
  3. sudo apt-get upgrade
  4. sudo apt-get dist-upgrade

1. Reboot your Raspberry Pi
2. Take a look at the various icons and investigate some of the software that is installed by Default. Write down some of the applications that you find for future reference.
3. On the right-hand side, you should locate the Bluetooth icon, as well as the networking icon. Hover over the Networking icon and record the information displayed.
4. Click on the networking icon. Write down the various options displayed.
5. **VERY CAREFULLY** – unplug the network cable from the back of the desktop computer. Plug it into the Network Port on your Raspberry Pi.
6. Click on the icon for the Web Browser. Chromium is the ‘Chrome version’ for the Raspberry Pi. Update the version of Chrome on your device.
7. Click on the icon that looks like a command prompt (i.e. >\_). This is the terminal window. If you are familiar with Windows, it is like the “command prompt” (or cmd.exe).
8. In order to administer this machine (that is, to see special information about it and to make changes to the configuration of the machine) we need to log in to this machine as a “Super User.” This user is also called the “Root” user. As a security measure the Super User or Root user account has had the password blanked out. We need to create a password for this account. Type the following command:

**sudo passwd**

You will be prompted to enter a password. Type in a password (You MUST remember this password) and press the Enter key. You will be asked to confirm the password, so type it in again.

1. When launching the terminal, the following is displayed in the prompt:

**pi@raspberrypi**

“pi” represents the account currently logged into the system  
“raspberrypi” represents the name of the system

1. We will switch to the ‘super user account’. Type: **su** and press enter.
2. You will be prompted for the password for this account. Type in the password that you set when you typed in “sudo passwd”. **NOTICE THE CHANGE IN THE COMMAND PROMPT.** What is the new command prompt?
3. We will change the name of the Raspberry Pi. Type in the following command:

**hostname <YOUR SenecaUsername>**

example: *hostname cgrant*

1. The prompt may not change until you have closed down the terminal session and started it back up again. Perform this task if the prompt has not changed and record the new prompt.
2. To obtain the network configuration of the Raspberry Pi including the IP address, MAC address, subnet mask, type in the following command:

**ifconfig -a**

1. The output should display the settings for each individual network card/interface that exists on the system.
   1. What does **eth0** represent?
   2. What does **lo** represent?
   3. What does **wlan** represent?

Submission Instructions:

* Raspberry Pi has operating system installed
* Raspberry Pi has been updated
* Tasks have been completed
* Notes have been recorded
* Lab signed off

Grade Weight:

1% of Final Grade