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Homework 1
Welcome, Setup, and Some Light Reading

Due: Saturday, January 14th, 10:00PM (Hard Deadline)

Submission Instructions

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1 Set Up a Ubuntu Virtual Machine

One of the goals of this class is to understand systems work so that you can customize and improve them for yourself. On CAEN, course environments are already set up and everything "just works". On a brand new Ubuntu install, however, we will have to find, install, set up and manage many tools ourselves.

Recall from lecture that a virtual machine (VM) is a fake computer running as a program. We'll use a VM in this course as a playground to test things out and work without risking anything on your day-to-day machine. To kick things off, we start by getting a basic environment set up this week.

One final thought: Homework in this class will often be a little underspecified. You are expected to Google, to try things, and to fail from time to time. Making mistakes is highly encouraged, it's how you learn. We have many office hours if you find yourself getting stuck, but we will always start with the questions, "What have you tried so far?" and "Why do you think that didn't work?"

1. Get a copy of the **Desktop** version of **Ubuntu 16.04** (this is a big download, consider doing it on campus).
2. Download and install VirtualBox.
3. Open VirtualBox and create a new virtual machine. Most of the defaults are fine. The default hard drive size of 8 GB is a little small, I recommend going bigger (50 GB or so). By default, disk images are *sparse*, which means it won't take 50 GB of real disk space to create a fake disk, rather the fake disk will grow on demand as it's used, so there's not a lot of harm in choosing a big number.
4. Install Ubuntu on your new virtual machine. I recommend "Downloading updates while installing".
5. Once Ubuntu is running, install the Guest Additions (try VirtualBox's Devices menu → Insert Guest Additions CD Image; you'll need to reboot once this finishes).
   Q: What are Guest Additions? What do they do? What changed after you installed them and rebooted your VM?
6. Play around with your new machine! Try writing and running a Hello World program. What about other tools you've used before? Can you get an old course project running? How is it different than a CAEN environment?

2 Readings

Each of these are short blog posts, 5-10 minute reads. I selected these to give you a little exposure to some varying perspectives. The authors, Joel in particular, have several other very interesting posts that I highly encourage exploring. After each reading, write a response for the given question.

Biculturalism by Joel Spolsky
http://www.joelonsoftware.com/articles/Biculturalism.html

Q: Has your computing experience thus far aligned more with "Windows culture" or "unix culture"? What makes you feel that way?

These two articles use the word "research" a lot, but the points made apply well to any work in computer science.

Helping my students overcome command-line bullshittery by Phillip Guo
http://www.pgbovine.net/command-line-bullshittery.htm
and the counter-point
On the value of command-line "bullshittery" by Eytan Adar
https://medium.com/@eytanadar/on-the-value-of-command-line-bullshittery-94dc19ec8c61

Q: What did you take away from these articles?