Homework #2 – Introduction to Linux

Due Weds, September 4, at 5:00pm

Introduction

The primary purpose of this assignment is to build skill in the Linux/UNIX command line, an essential skill in computing. Basic competency with it is necessary to this and many other courses at Duke, and mastery of it will simplify your computing life immensely. To build these skills, you'll be learning the basics right at the start of the course. The mechanism for doing so will be a Duke OIT online course which incorporates video lessons and interactive exercises, as well as a few supplemental tasks later in this document.

This assignment also serves a second purpose: to ensure you are familiar with the available computing environments and tools, including the Docker container, your local computer's command line, and the GradeScope assignment submission facility.

A note on the two environments you'll be using

There are two separate command line environments you'll be exposed to here. In Part 1, you'll use an *Ubuntu Linux* docker container in Duke Container Manager. This container is easy to set up and access via just a web browser from anywhere. On the down side, the interface can be a bit slow – Recitation 1 of the course will show you how to use your local computer as well.

In Parts 2-3, you'll show you have mastery of the tools and concepts from Recitation 1: the docker container, your local computer's Linux-style command line, and the homework test tool for the course, `hwtest.py`.

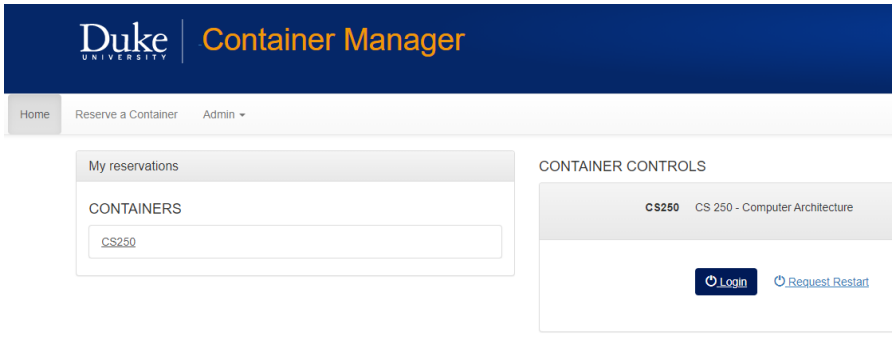
*NOTE: You need to submit a bit of **code** and **three Canvas quizzes** and a **PDF with two screenshots**; read this write-up carefully.*

Part 1: Command Line Training

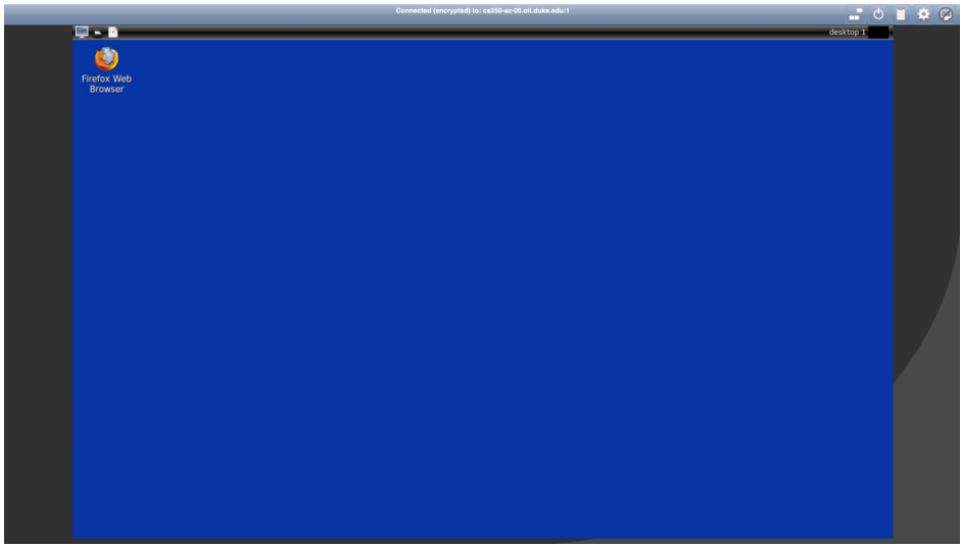
NOTE: The training asks you to create a virtual machine in the Duke Virtual Computing Manager (VCM). You can skip this, and instead use the ECE/CS 250 docker container.

Getting an ECE/CS 250 Container Instance[1]

Go to https://cmgr.oit.duke.edu/containers and locate the "CS250 - CS 250 – Computer Architecture" container. After the initial login, you should see the following When you choose CS250; You can Login just by hitting "Login". If something goes wrong, you can hit "Request restart".



You should see the following screen once you log in:



That's it! You now have your own ECE/CS 250 container instance for the semester!

[1] This is section is an abbreviated form of the same content found in recitation 1.

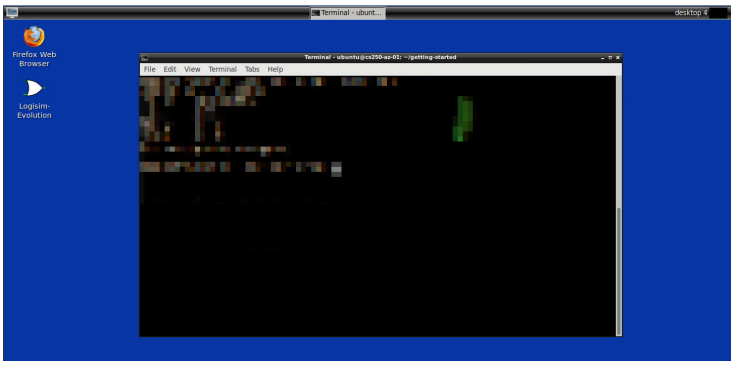
Linux command line training

1. Go to the "Modules" section of the course Canvas: https://canvas.duke.edu/courses/36596/modules
2. Find the "Command Line Fundamentals" module and follow the directions in "L1: Getting Set Up" to set up LinkedIn Learning. You **SHOULD NOT** set up a virtual machine (VM) or connect with SSH, connect to the course container instead.
3. Watch the videos linked in sections L2-L4, and complete the quiz in Canvas for each section.
4. Each quiz can be attempted only once, but feel free to test on your own command line (locally or in the container) as you work through them.

Part 2: Proof of testing on docker and locally

NOTE: There is a connection between this homework and Recitation 1. If you haven't done Recitation 1 yet, do that before proceeding.

As part of Recitation 1, you fixed `square.c`. Show off that you got it working by showing an all-green output from `hwtest.py` as executed in the **Docker container**. (You can use the container via Remote Desktop Connection or via browser.) **Save a screenshot of this.** Your screenshot should look like the one below, except your text won't be pixelated out.



Let's also prove you have your local compute environment also working. If you haven't already, clone your `getting-started` repo on your local machine. Show an all-green output from `hwtest.py` on your **local machine**. **Save a screenshot of this.** Your screenshot should look something like the one below, except your text won't be pixelated out.

Part 3: Submitting code to GradeScope

As part of Recitation 1, you submitted the fixed `square.c` to the GradeScope assignment called "Getting Started". Your score on that will be part of your Homework 2 grade.

What and how to submit

First, ensure you've submitted `square.c` to the "**Getting Started**" assignment on GradeScope, as called for in Recitation 1.

Second, ensure you've completed all 3 quizzes in the "Command Line Fundamentals" module on Canvas.

Finally, take the *two* screenshots from Part 2 and put them into a document. Save the document as a PDF and submit to the GradeScope assignment "**Homework 2**".