Pre-Lab 1 – Pi Setup

Overview

The following activities will review the tools and knowledge necessary to complete the labs in this course. They cover the use of the Linux command line, review the Python programming language, and introduce the Git version control software. This pre-lab must be completed BEFORE arriving at lab 1 and will be checked for completion. These lessons are provided through LinkedIn Learning, which all students have access to through their student emails. Additionally, you will need to download and install some software before attending the lab to expedite setup.

Downloads

Prior to attending lab 1 you need to download and install VS Code and Raspberry Pi Imager. VS Code would be our default IDE which enables you to remotely edit files on Raspberry Pi. The Raspberry Pi Imager will allow you to flash the operating system onto the micro-SD card that the Pi boots from. In addition, download the SCUTTLE Raspberry Pi OS Image prepared by the TAs for this lab which includes many of the libraries needed to run the SCUTTLE and perform future lab exercises. It is a large file that will take some time to download and must be done BEFORE LAB 1.

Command Line

Log onto LinkedIn Learning using your TAMU credentials. Access the course titled "Learning Linux Command Line". Watch the following chapters and all videos within each chapter:

- Chapter 2: Command-Line Basics
- Chapter 3: Files, Directories, and Permissions
- Chapter 4: Common Command-Line Tasks and Tools

Afterwards, ensure all videos, including the "challenge" and "solution" videos, show a green check to indicate completion.

Python

Next, access the "Learning Python" course and watch the following videos in the "Python Basics" chapter:

- Variables and Expressions
- Python Functions
- Conditional Structures
- Loops
- Classes

- Importing and Using Modules

Git and GitHub

Access the "Learning GitHub" course and watch the following videos under "The Basics of Working on GitHub":

- What is Git?
- What is GitHub?
- The GitHub Workflow: Idea to commit
- The GitHub Workflow: Pull request to production

Finally, watch the "Git Tutorial For Dummies" video on YouTube to learn more about the use of Git in projects. Optionally: if Git still seems confusing or you'd like to learn more, "Git And GitHub in ~30 Minutes" is another good video to watch.

Pre-Lab Tasks

1. Take screenshots of all checked off videos and tasks from the above sections. These will be checked at the beginning of the lab and included in your lab 1 assignment submission.

2. Create a GitHub account using a non-TAMU email. This account will be used to manage a repository, which will be updated throughout the lab as a backup for your work. Using a non-TAMU email allows you to maintain access to your GitHub account after graduation.

3. Download and install the required software described above.