CSCI 400 Lab 1

**Name: Christopher Gonzalez**

**Class Section: CSCI 400 02 [35583]**

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**Instructions**:

* Login to your account at <https://pwn.college/>

**pwn.college username: Chris\_B\_Gonzalez**

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* Go to the Linux Luminarium dojo: <https://pwn.college/linux-luminarium/>
* Complete the challenges in Hello Hackers: <https://pwn.college/linux-luminarium/hello/>

**Challenge 1: Intro to Commands**

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**To obtain the first flag, I started the challenge and opened the GUI Desktop. From there, I started the terminal and typed “hello” into the command line. In this scenario, “hello” represents a command and invoking it gave me the flag which is highlighted in white. For future reference, the flags will always be highlighted in white in future challenges/images.**

**Challenge 2: Intro to Arguments**

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**To obtain this flag, I started the challenge and opened the terminal on the GUI Desktop. The instructions told me to run the same “hello” command used in Challenge 1, but I also had to include the argument “hackers” in the line. This exercise is meant to introduce the concept of arguments, which is essentially works as providing additional information for the command to achieve a more specific objective. I entered “hello hackers” and the flag was given to me.**

* Complete the challenges in Pondering Paths: <https://pwn.college/linux-luminarium/paths/>

**Challenge 1: The Root**

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**To obtain this flag, I started the challenge and opened the terminal. The purpose of this exercise was to introduce me to the concept of filesystems, which starts with /. I can use / followed by path information to get the absolute path of files and/or programs. For this exercise, I had to invoke the pwn program using its absolute path which is “/pwn”. After entering this, I was given the flag.**

**Challenge 2: Program and Absolute Paths**

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**To obtain this flag, I started the challenge and opened the terminal. The instructions for this exercise informed me the flag was in the run file that is in the challenge directory. The task was to execute the run file by invoking the absolute path of it. I followed a similar procedure as Challenge 3, but this time I had to enter “/challenge/run” as this is the absolute path of the run file. After entering this in the terminal, I was given the flag.**

**Challenge 3: Position Thy Self**

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**To obtain this flag, I started the challenge and opened the terminal. Initially, I entered “/challenge/run” which resulted in the terminal informing me I was not in the correct directory to execute the line. The directory I should be in to execute the line is “/home”. I used the cd home command to get to the directory and tried the “/challenge/run” command again. Since I was now in the home directory, the flag was given to me.**

**Challenge 4: Position Elsewhere**

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**To obtain this flag, I started the challenge and opened the terminal. This exercise is very similar to Challenge 5 in the sense that I had to enter “/challenge/run” so the terminal can then inform me the directory I need to go to. In this exercise, the directory I needed to go to was “/sys/kernel”. I used cd to get to this directory by typing “cd /sys/kernel”. After successfully entering this directory, I entered “/challenge/run” again and it gave me the flag.**

**Challenge 5: Position Yet Elsewhere**

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**Obtaining this flag required a near identical procedure as seen in Challenge 5 and 6. After entering “/challenge/run” for the first time, the terminal informed me I needed to go to the “/usr/share/doc” directory. I used “cd “/usr/share/doc” to enter the correct directory and ran the “challenge/run” once again. Entering this in the correct directory gave me the flag.**

**Challenge 6: Implicit Relative Paths, from /**

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**To obtain this flag, I started the challenge and opened the terminal. I entered “/challenge/run” and the terminal informed me I needed to go to the /directory, which I did using “cd /”. Unlike challenges 5-7, I then had to access the file using its relative path instead of the absolute path. Since I was now in the /directory, the relative path for the file was “challenge/run” and I entered this in the terminal, which proceeded to give me the flag.**

**Challenge 7: Explicit Relative Paths, from /**

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**To obtain this flag, I opened the terminal and entered “/challenge/run”. The terminal told me I needed to go to the “/” directory, which I proceeded to do using “cd /”. I retried executing the file using its relative path (challenge/run), but the terminal then informed me the challenge needed to be called with a relative path that started with a “.”. To resolve this, I entered “./challenge/run” and it gave me the flag afterwards.**

**Challenge 8: Implicit Relative Path**

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**To obtain this flag, I started the challenge and opened the terminal. After executing “/challenge/file”, I was told I needed to be in the “/challenge directory”, which I went to using “cd /challenge”. Next, I tried executing “run” because I was already in the /challenge directory, but I was given the error that run was being interpreted as a command and not a file. To resolve this, I had to enter “./run” which then gave me the flag.**

**Challenge 9: Home Sweet Home**

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**To obtain this flag, I started the challenge and opened the terminal. The purpose of the challenge was to create a copy of /challenge/run to any file I specify as an argument on the command line. Admittedly, I was confused by this at first, but reading the full description of the challenge gave me insight on what I needed to do. I learned that using ~ is an absolute path, and using ~/~ expands my current directory (/home/hacker). Using these two facts, I determined I can copy the file by typing “/challenge/run ~/~” and it copied and read back the flag to me.**