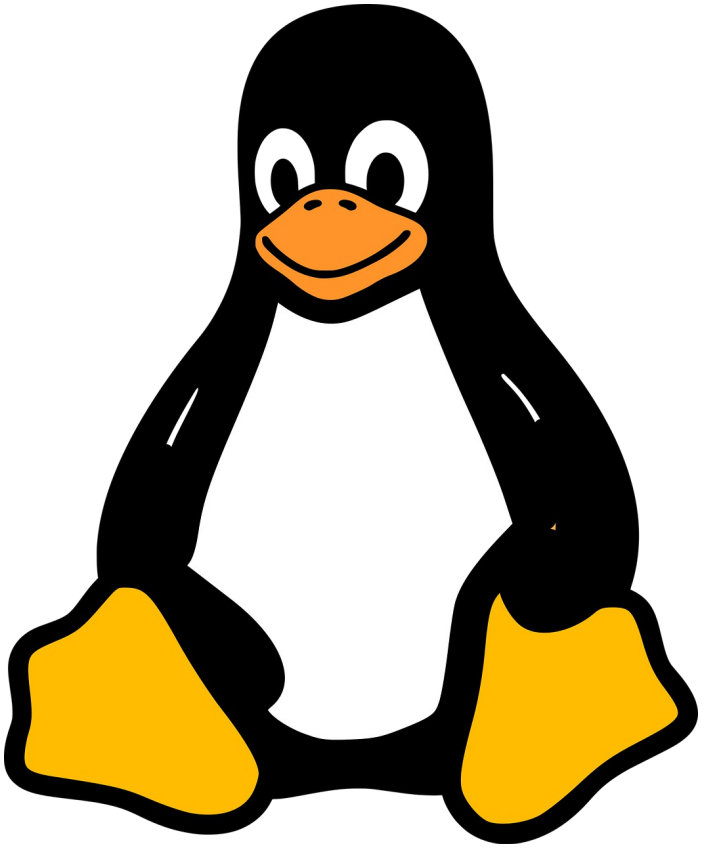
HackerFrogs Afterschool OverTheWire Bandit: Part 1

Class:
Linux OS Operations

Workshop Number:
AS-LIN-01

Document Version:
1.2

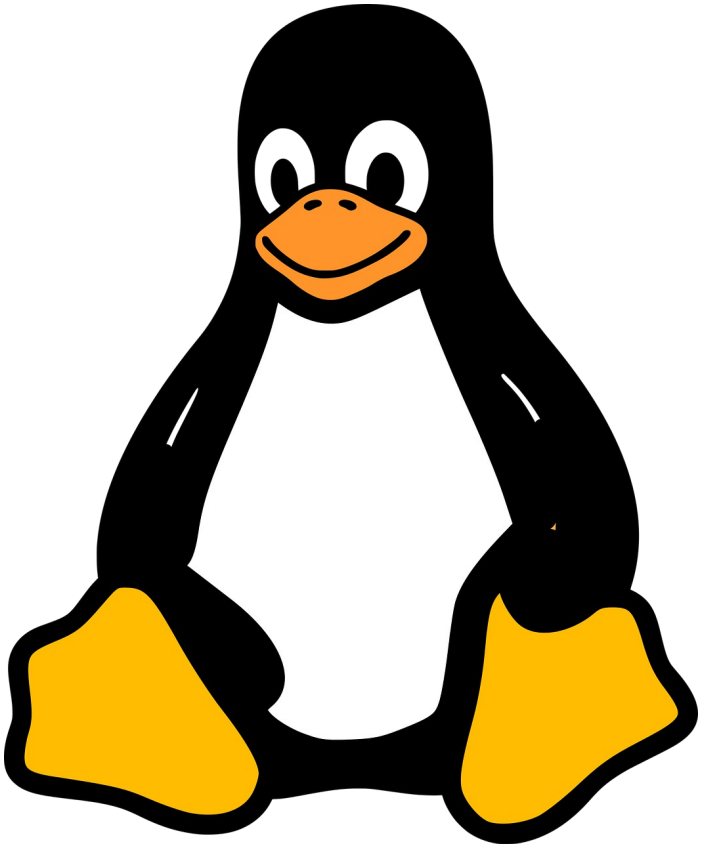
Special Requirements:
None



Linux OS Operations

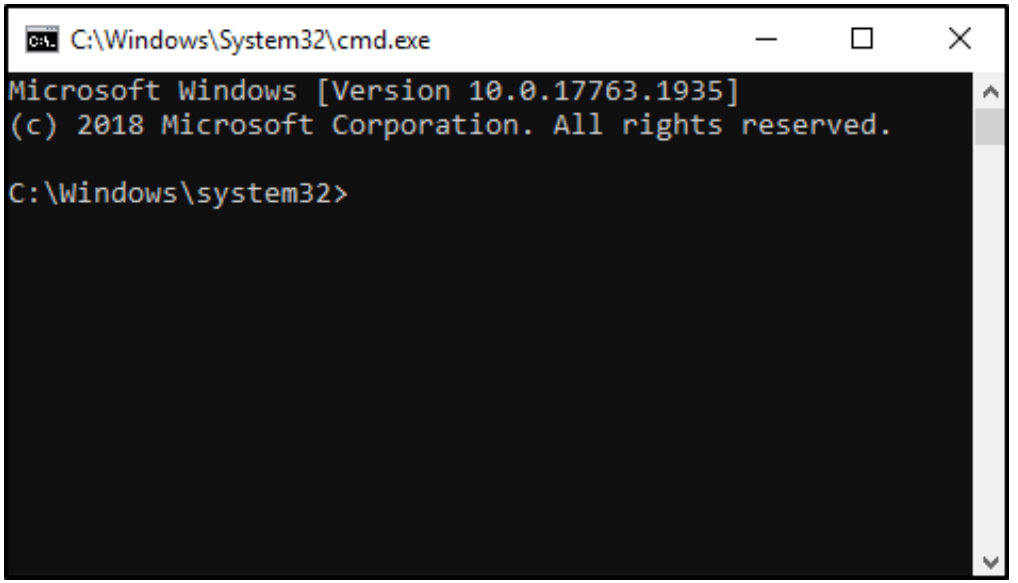
This is the first workshop for intro Linux OS Operations.

Let us begin!

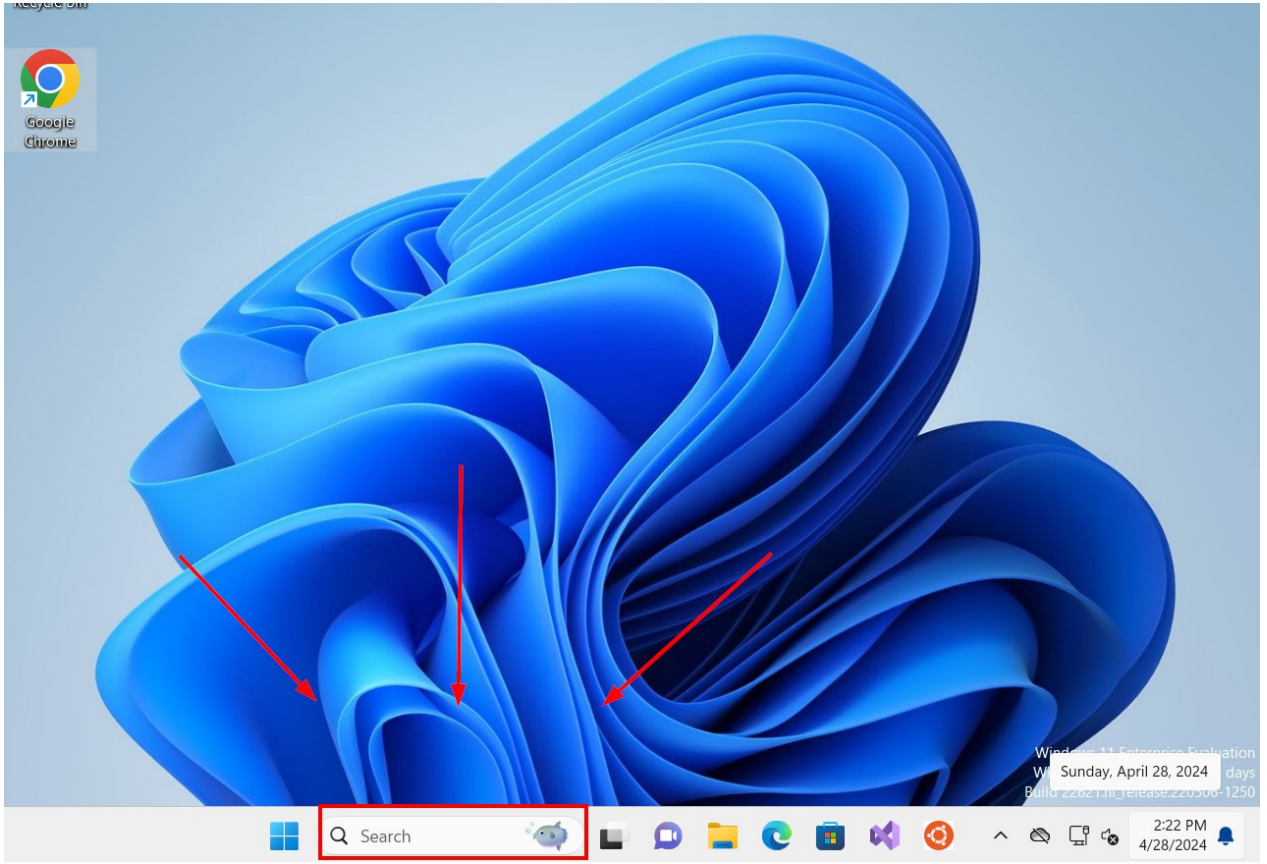


Accessing a Terminal

The first thing we need to do is open our command-line interface (CLI) terminal. We'll go over a couple of different ways to access one.

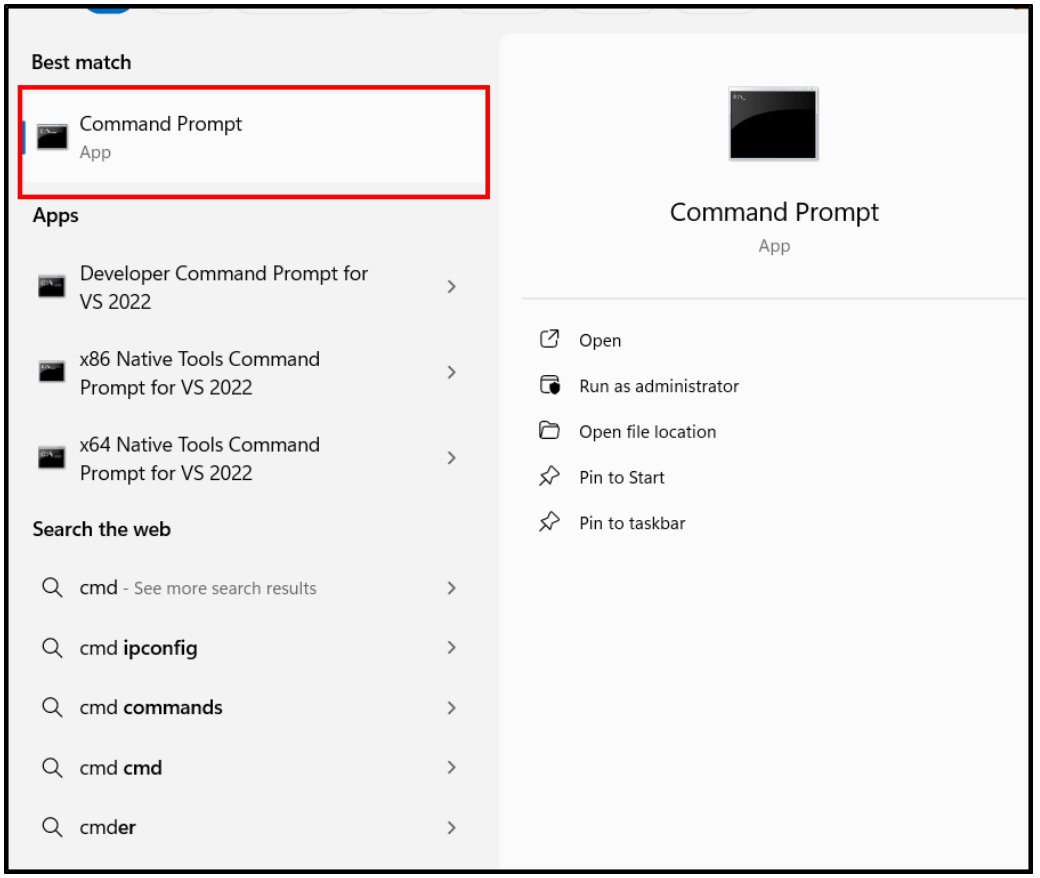


Accessing a Terminal (Windows)



In Windows, you can type “cmd” into the search field beside the desktop Start button.

Accessing a Terminal (Windows)



Then click on the Command Prompt option.

Accessing a Terminal (macOS)

Use the Command + Space shortcut to open the Spotlight Search

Accessing a Terminal (macOS)

Then in the search field, type in “terminal” and hit enter to open the Terminal application

Accessing a Terminal (macOS)

Then in the search field, type in “terminal” and hit enter to open the Terminal application

Accessing a Terminal (web)

If, for some reason, you aren't able to open a CLI terminal on your computer, you can access a web-based Linux terminal at the following URL:

https://bellard.org/jslinux/

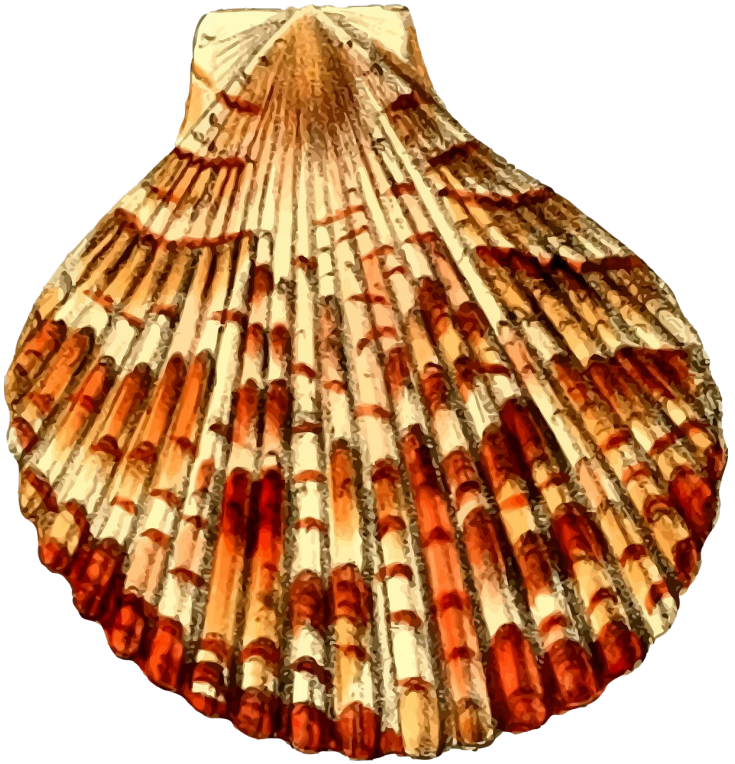
Accessing a Terminal (web)

CPU	OS	User Interface	VFsync access	Startup Link	TEMU Config	Comment
x86	Alpine Linux 3.12.0	Console	Yes	click here	url	
x86	Alpine Linux 3.12.0	X Window	Yes	click here	url	Right mouse button for the menu.
x86	Windows 2000	Graphical	No	click here	url	Disclaimer.
x86	FreeDOS	VGA Text	No	click here	url	
riscv64	Buildroot (Linux)	Console	Yes	click here	url	
riscv64	Buildroot (Linux)	X Window	Yes	click here	url	Right mouse button for the menu.
riscv64	Fedora 33 (Linux)	Console	Yes	click here	url	Warning: longer boot time.
riscv64	Fedora 33 (Linux)	X Window	Yes	click here	url	Warning: longer boot time. Right mouse button for the menu.

From that page, click either of the outlined links to open a web-based Linux CLI

SSH (Secure Shell)

We will use SSH (Secure Shell) to connect and login to the Bandit CTF server.



SSH (Secure Shell)

To use SSH we will need username and server information. Let's get that information from the Bandit CTF homepage:

https://overthewire.org/wargames/bandit/bandit0.html

SSH (Secure Shell)

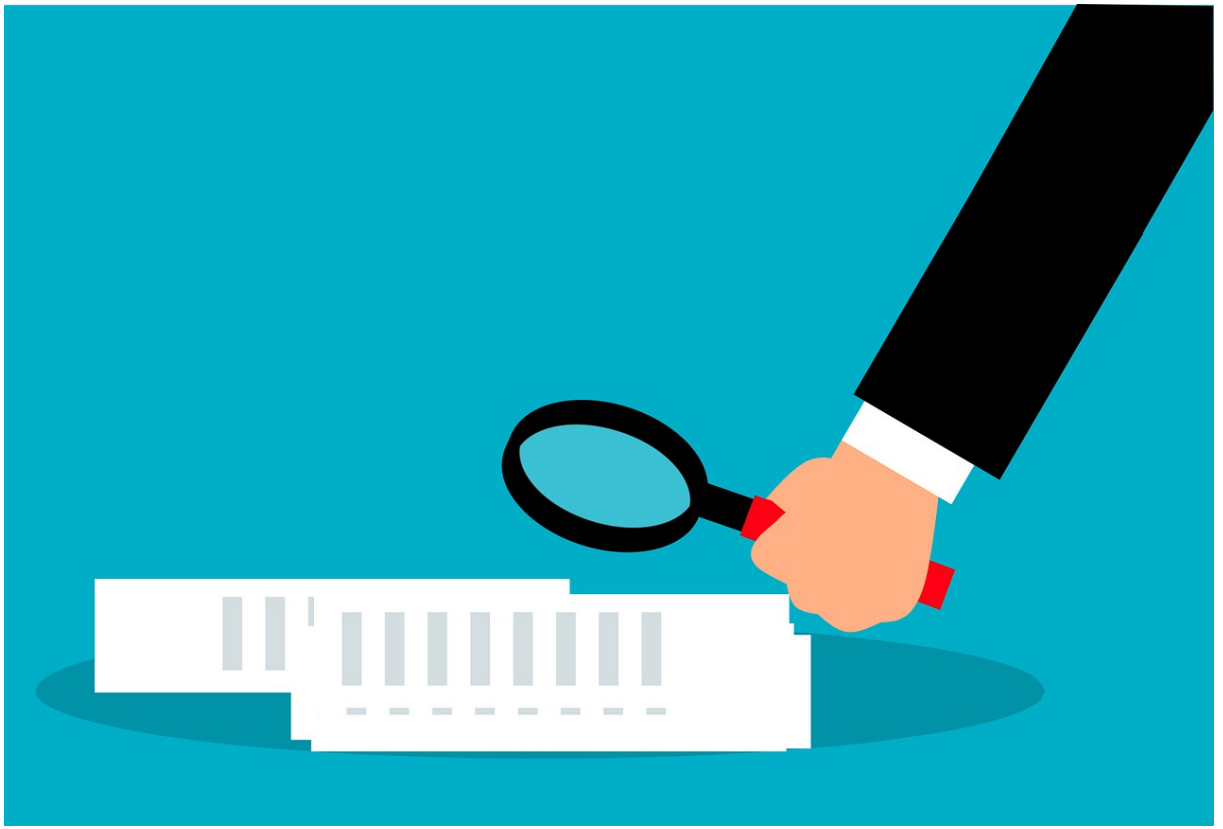
We will use the following command to login with SSH:

```
ssh bandit0@bandit.labs.overthewire.org -p 2220
```

SSH (Secure Shell)

```
ssh bandit0@bandit.labs.overthewire.org -p 2220

ssh             ← the command itself

bandit0         ← the user account on the server

bandit.labs.    ← the server URL
overthewire
.org

-p 2220         ← the networking port where the
                  service is located
```

Summary



Let's review the Linux commands we learned in today's workshop:

Ls Command

The Ls command lists the files and directories in the current directory.

It can be used with the `-l` argument to output in a list format, and with the `-a` argument to include hidden files and directories in the output. These two arguments can be combined to produce both ouputs, e.g., `-la`

Ls Command

```
└─$ ls -la
total 12
drwxr-xr-x  2 shyhat shyhat 4096 May 30 09:28 .
drwxr-xr-x 42 shyhat shyhat 4096 May 30 09:21 ..
-rw-r--r--  1 shyhat shyhat   12 May 30 09:28 example.txt
```

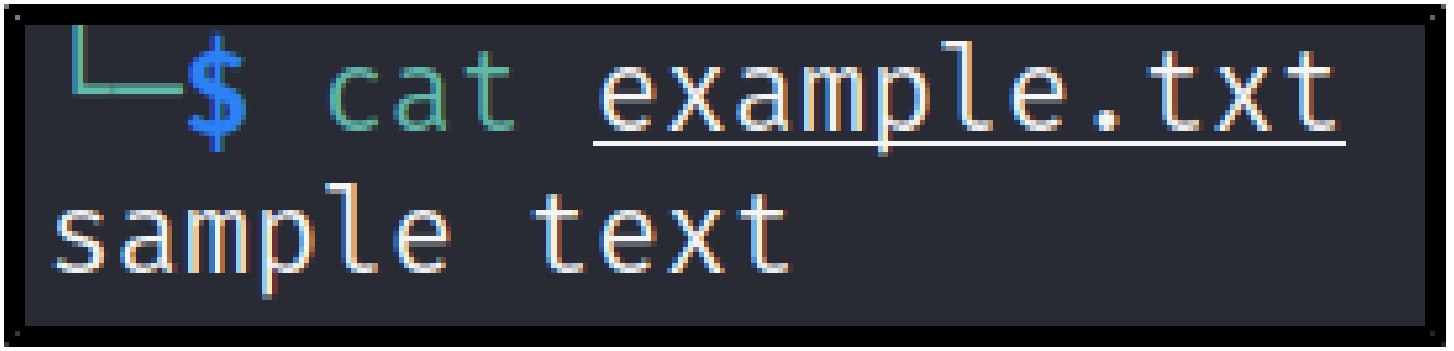
Here we see the output of the **ls** command with the **l** and **a** flags combined

Cat Command

The Cat command reads the contents of a file. The name of the file to be read must be supplied as an argument to the command.

E.g., `cat example.txt`

Cat Command



Here the contents of the **example.txt** file is read using the **cat** command

Echo Command

```
echo b0  bandit0 >> banditpass.txt
```

The Echo command creates output based on whatever argument is supplied to it. It is very useful for creating output for redirection.

Output Redirection

```
echo b0  bandit0 >> banditpass.txt
```

Output redirection is the process of redirecting the output of a command, either into a file, or into another command.

Output Redirection

```
echo b0  bandit0 >> banditpass.txt
```

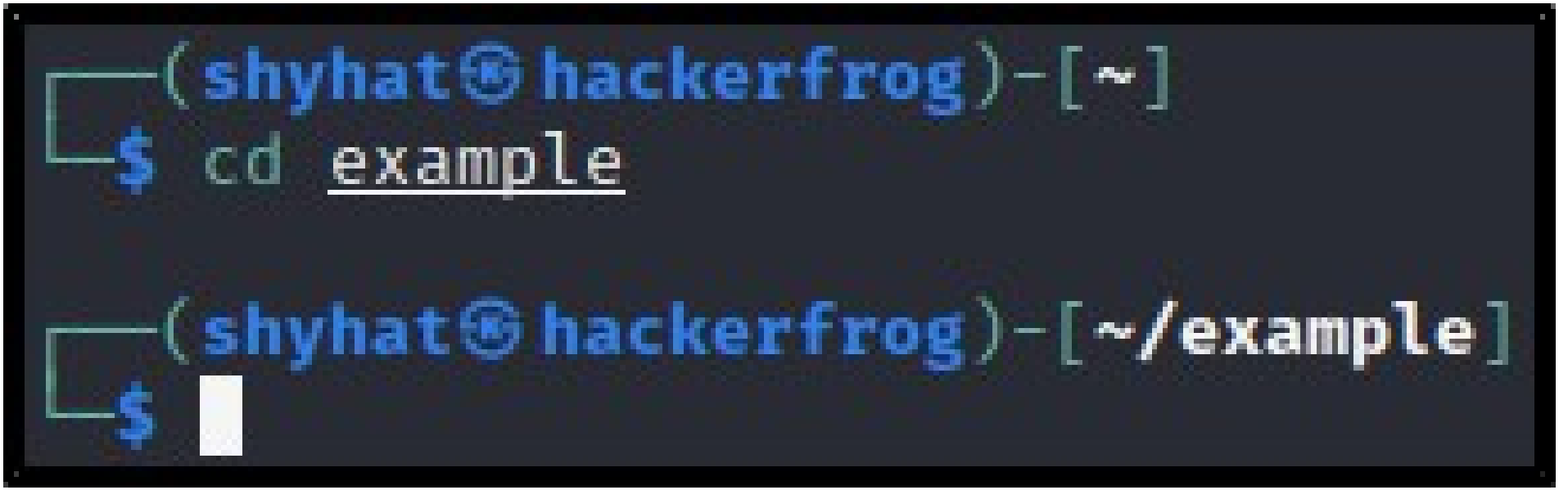
Here the double greater-than (>>) symbols redirect output into a file, but if that file already exists, it will instead append to that file.

Cd Command

The Cd command changes the current directory to the one specified. The new directory must be supplied as an argument to the command.

E.g., `cd downloads`

Cd Command

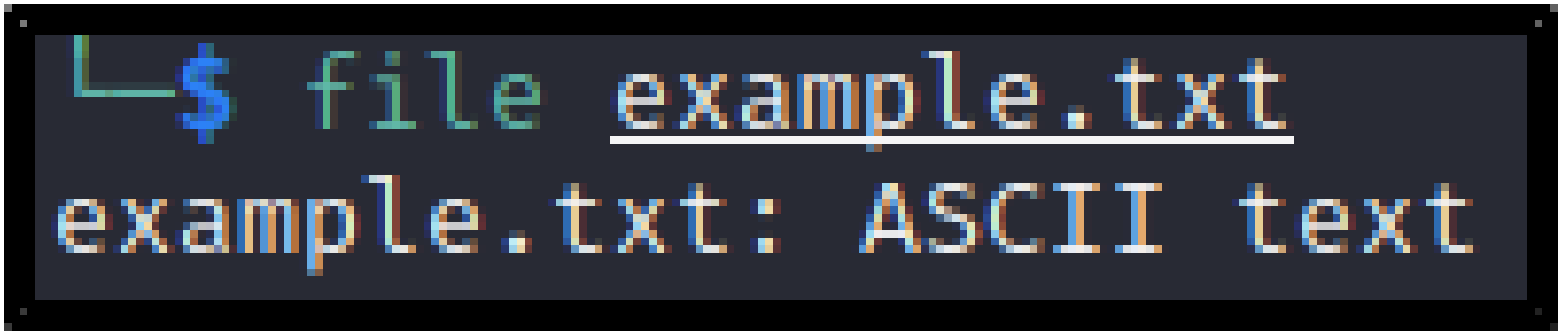


File Command

The File command identifies the type of contents for a specified file. The file name must be supplied as an argument to the File command.

E.g., `file picture.jpg`

File Command

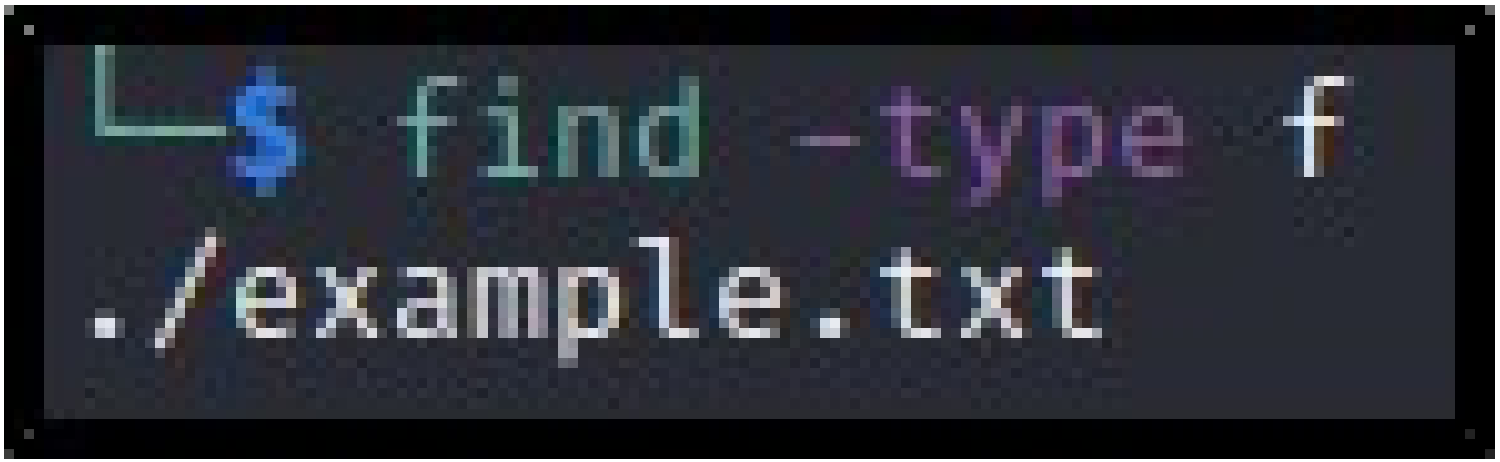


Find Command

The Find command allows a search of files and / or directories in the file system, and matches files in the output according to the criteria provided by the command arguments.

The argument `-type` searches by file or directories and the argument `-size` searches for files of a particular size.

Find Command



Pwd Command

The Pwd command will output the name of the current directory (a.k.a. the present working directory).

Pwd Command

What's Next?

In the next HackerFrogs Afterschool Linux OS workshop, we'll continue learning Linux commands with the Bandit CTF.

Extra Credit

Looking for more study material on this workshop's topics?

See this video's description for links to supplemental documents and exercises!

Until Next Time, HackerFrogs!