Linux Essentials Workshop-3

Clarusway

Subject: Linux Basic Shell Commands

Learning Goals

- Practice using the linux basic shell commands.

Introduction

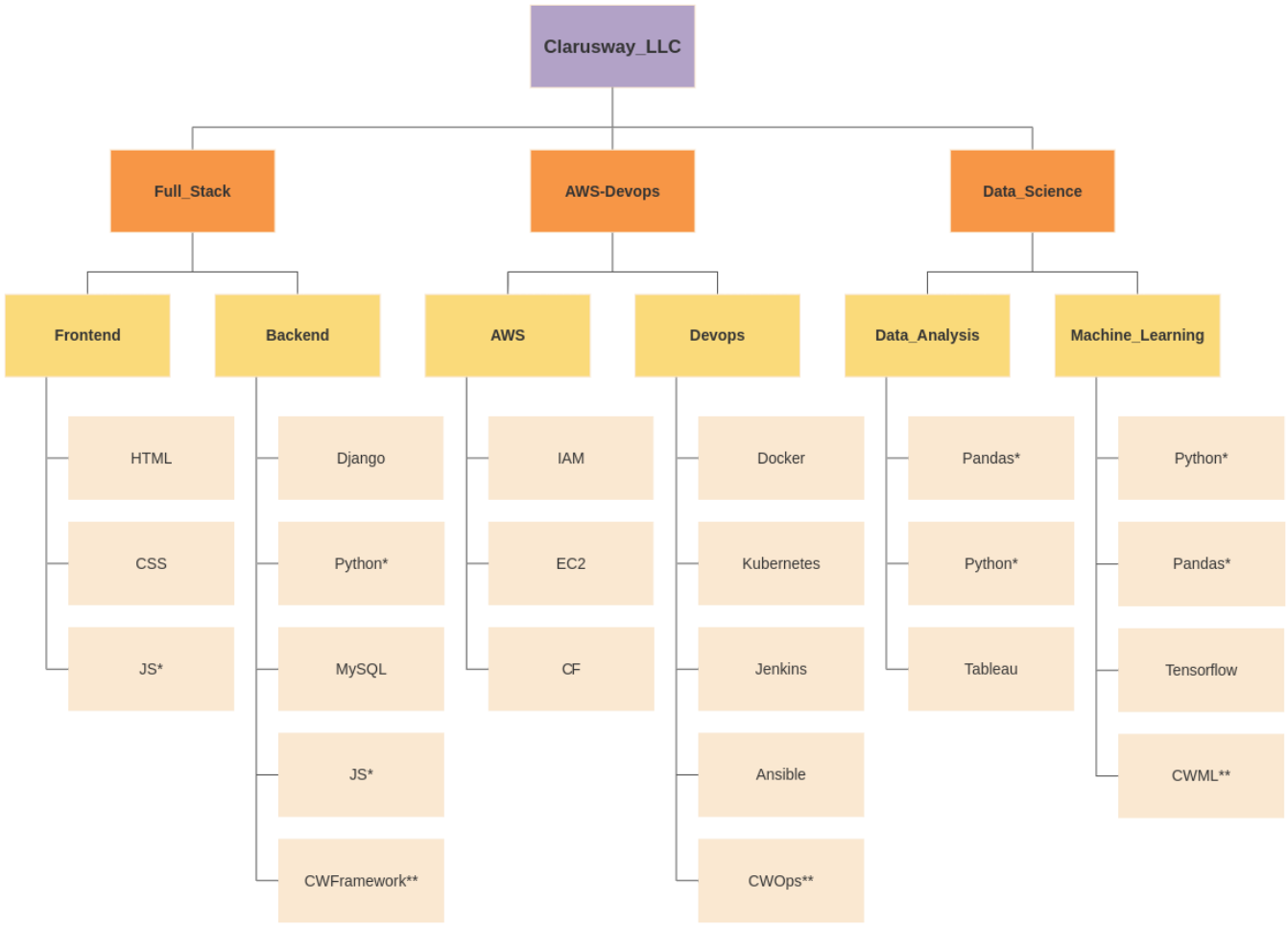
We've covered a lot of Linux concepts, but now it's time to put the concepts into practice. We'll start with basic shell commands.

Practice Using the `Bash Shell` in Lesson

You might notice a few new things in this lesson that you haven't encountered before. We'll go through them together.

Coding Challenge's Story

Clarusway is one of the best bootcamp in the USA. Some of the lectures and tools taught belongs to the career paths in Clarusway are shown in the diagram below. The administration asks you to display this diagram on a filesystem. However, they want only administrators to have access to some tools' information like CWOps.



* The tools used in more than one field.
** The tools are top secret.

Code Along

Part 1 - Basic Commands 1/3

1. Open the terminal

- When you first open the terminal, you are in the home directory of your user.

```
open the terminal (Ubuntu/WSL/Try it/Git Bash/VS Code or whatever)
```

2. To know which directory you are in, you can use the “pwd” command.

- It gives us the absolute path, which means the path that starts from the root. The root is the base of the Linux file system. It is denoted by a forward slash(/).
- The user directory is usually something like "/home/username".

3. Create a directory named "Clarusway_LLC" in user's home directory.
4. Go into "Clarusway_LLC" directory.
5. List all the files/folders with details in Clarusway_LLC directory.

- As we created the folder yet, there is no files in it.

6. Create folders named "Full_Stack", "AWS_Devops", and "Data_Science".
7. Go into "Full_Stack" directory and list content of the directory with details and hidden files.
8. Create folders named "Frontend" and "Backend" after that list the content of "Full_Stack".
9. Go into "Frontend" directory and list content of the directory with details and hidden files.
10. Create 3 files named "HTML", "CSS", "JS" inside "Frontend".
11. Write the code below into "HTML" file using a text editor.

```
<!DOCTYPE html>
<html>
<body>

<center><img
src="https://lms.clarusway.com/pluginfile.php/1/core_admin/logo/0x200/1628491244/C
LARUSWAY.png" alt="Image not found">
<h1>Clarusway</h1>
<p>Clarusway Team was here.</p></center>

</body>
</html>
```

12. Go into "Backend" directory and list content of the directory with details and hidden files.
13. Create 4 files named "Django", "Python", "MySQL", "CWFramework" inside "Backend".
14. Write the query below into "MySQL" file using a text editor.

```
SELECT *
FROM employees
WHERE salary > 10000
ORDER BY salary DESC
LIMIT 3
```

15. Go into "AWS_Devops" directory from inside "Backend directory and list content of "AWS_Devops" directory with details and hidden files.
16. Create folders named "AWS" and "Devops" after that list the content of "AWS_Devops".
17. Print and check the path of the directory you are in.
18. Go into "AWS" directory.
19. Create 3 files named "IAM", "EC2", "CF" inside "AWS".

20. Go into "Devops" directory from inside "AWS" directory and list content of "Devops" directory with details and hidden files.
21. Create 5 files named "Docker", "Kubernetes", "Jenkins", "Ansible", "CWOps" inside "Devops".
22. Go into "Data_Science" directory from inside "Devops" directory and list content of "Data_Science" directory with details and hidden files.
23. Create 2 folders named "Data_Analysis" and "Machine_Learning" after that list the content of "Data_Science".
24. Go into "Data_Analysis" directory from inside "Data_Science" directory and list content of "Data_Analysis" directory with details and hidden files.
25. Create 2 files named "Pandas", "Tableau" inside "Data_Analysis".
26. Go into "Machine_Learning" directory from inside "Data_Analysis" directory and list content of "Machine_Learning" directory with details and hidden files.
27. Create 2 files named "Tensorflow", "CWML" inside "Machine_Learning".
28. Go into "Frontend" directory from inside "Machine_Learning" directory and list content of "Frontend" directory with details and hidden files..
29. Copy "JS" file to "Backend" folder.
30. Go into "Backend" directory and list the content of "Backend".
31. Write "print("I will become an IT master")" into "Python" file using echo command.
32. Copy the file named "Python" under "Backend" folder to "Data_Analysis" and "Machine_Learning".
33. Go into "Machine_Learning" directory from inside "Backend" directory and list content of "Machine_Learning" directory with details and hidden files..
34. Copy the file named "Pandas" under "Data_Analysis" folder to current folder(Machine_Learning).
35. The tools named "CWFramework", "CWOps", and "CWML" created by Clarusway are top secret. Therefore, these tools' information is read and write (rw-) only the user and user's group (not the others). You give permission to these files while you are inside "Machine_Learning" directory.
36. Go into "Clarusway_LLC" directory.
37. Install "tree" command via packet manager. Reqired code is below.

For Ubuntu:

```
sudo apt update
sudo apt install tree -y
```

For centOS:

```
sudo yum update
sudo yum install tree -y
```

38. Run the command below.

```
tree
```

Part 2 - Basic Commands 2/3

1. Create a folder named "Wildcards" into "Clarusway_LLC" directory and go into "Wildcards" folder.
2. Run the command below inside "Wildcards" directory.

```
touch createbackup.sh list.sh lspace.sh speaker.sh \
listopen.sh lost.sh rename-files.sh topprocs.sh \
users-{0..5}{1..9}.list users-{0..5}{1..9}.txt \
com{1..10}{x..z}
```

3. List the files' name start with "l".
4. Create a folder named "users-info" and write command to move all file names prefixed with "users-0" and ending with one or more occurences of any character into there.
5.Find the file names starts with "l" followed by any single character and ends with "st.sh".
6. List the file names starts with "l" followed by any character of a,b,c,d,i,o but ends with "st.sh"
7. List the file names prefixed with any two charactes followed by "st" but ends with one or more occurence of any character.
8. List the file names prefixed with any characters of c,l,s,t followed by one of i,o characters and then any single character, followed by a "t" ends with one or more occurence of any character.

Part 3 - Basic Commands 3/3

1. Create folders named "Scripting" and inside it named "empty_folders" under "Clarusway_LLC" directory.
2. Create folders named "empty_folders" under "Scripting" directory.
3. Create a file named "shell_script.sh" inside "Scripting" folder.
4. Open "shell_script.sh" file using any text editor like vim or nano.
5. Write "#! /bin/bash" into "shell_script.sh" file on top line first, using the text editor.
6. Write a command to create a folder named "shell_folder" inside "shell_script.sh" file using the text editor.
7. Write a command to create a file named "shell_file" inside "shell_script.sh" file using the text editor.
8. Write a command to write "i am here" to "shell_file" inside "shell_script.sh" file using the text editor.
9. Write a command to change shell_file's permission (400) inside "shell_script.sh" file using the text editor.
10. Write a command to remove folder named "empty_folder" inside "shell_script" file using the text editor.
11. Write a command that prints "script ran successfully" inside "shell_file".
12. Run the "shell_script.sh" which in the same file directory. Pay attention getting the "permissin denied"output without user execute permission.
13. Run the "shell_script.sh" file giving the required permission
14. Attention please! Finally, remove Clarusway_LLC directory.
15. Exit from the terminal

- Tips and Tricks for Using Linux Command Line

- You can use the clear command to clear the terminal if it gets filled up with too many commands.
- TAB can be used to fill up in terminal. For example, You just need to type “cd Doc” and then TAB and the terminal fills the rest up and makes it “cd Documents”.

- Ctrl+C can be used to stop any command in terminal safely. If it doesn't stop with that, then Ctrl+Z can be used to force stop it.

```
exit
```

☺ **Thanks for Attending** ✍

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