LINUX FUNDAMENTALS: AN INTRODUCTION TO SYSTEM AND COMMAND-LINE BASICS

EXP.NO: 2 **DATE: 28-01-2025**

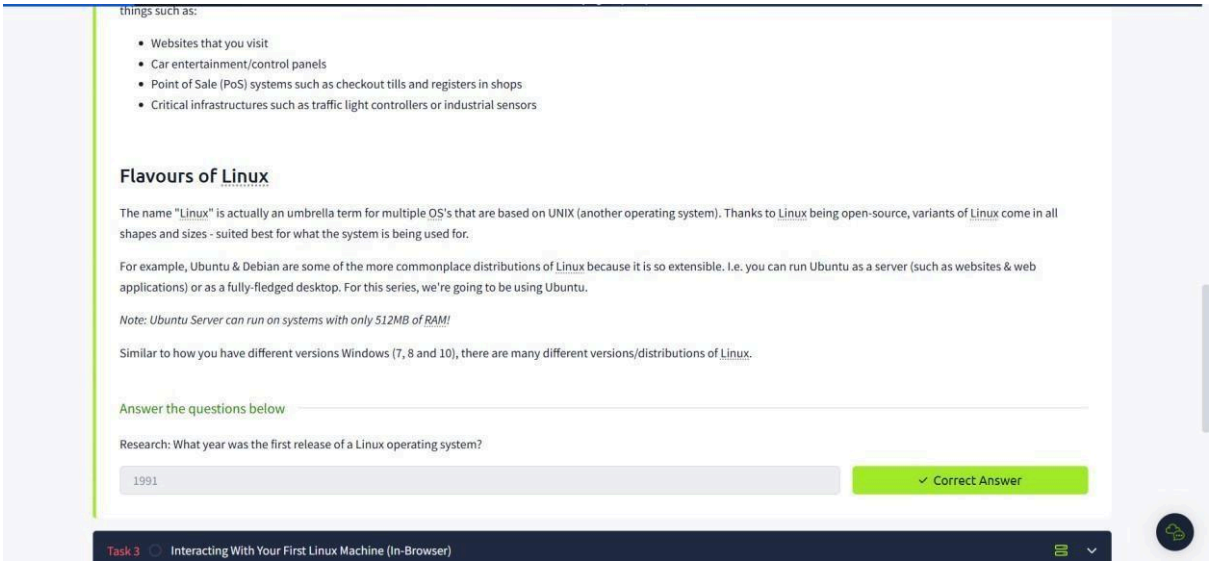
AIM:

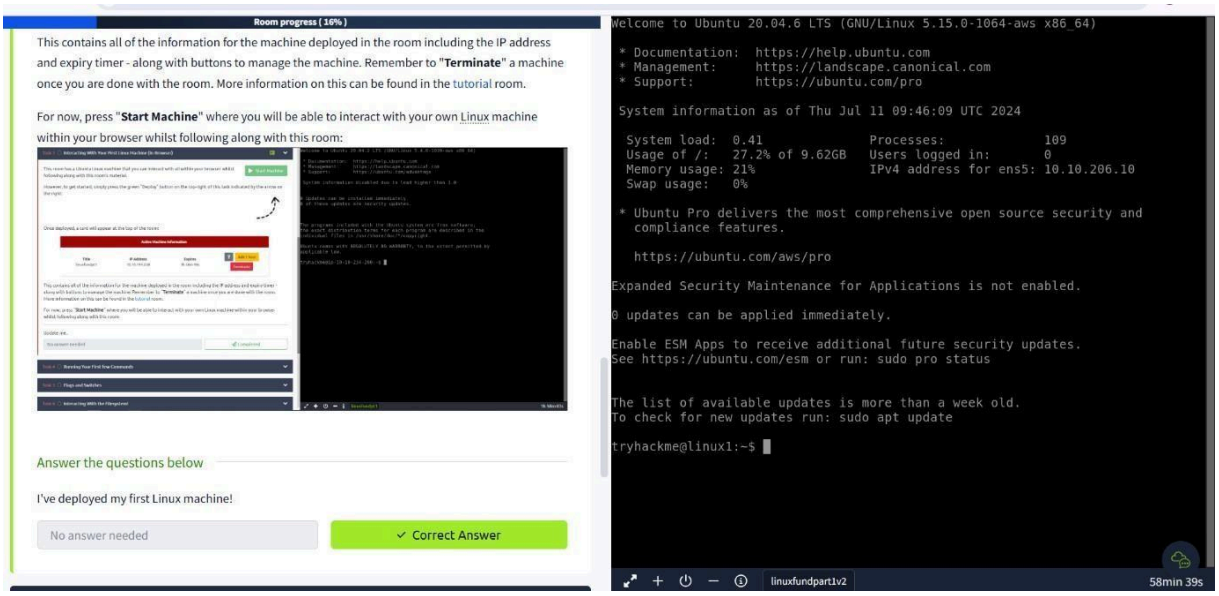
To understand and explore the fundamentals of the Linux operating system, including key components such as the file system, various commands, shell operators, to build a strong foundation for cybersecurity and system administration. in TryHackMe platform.

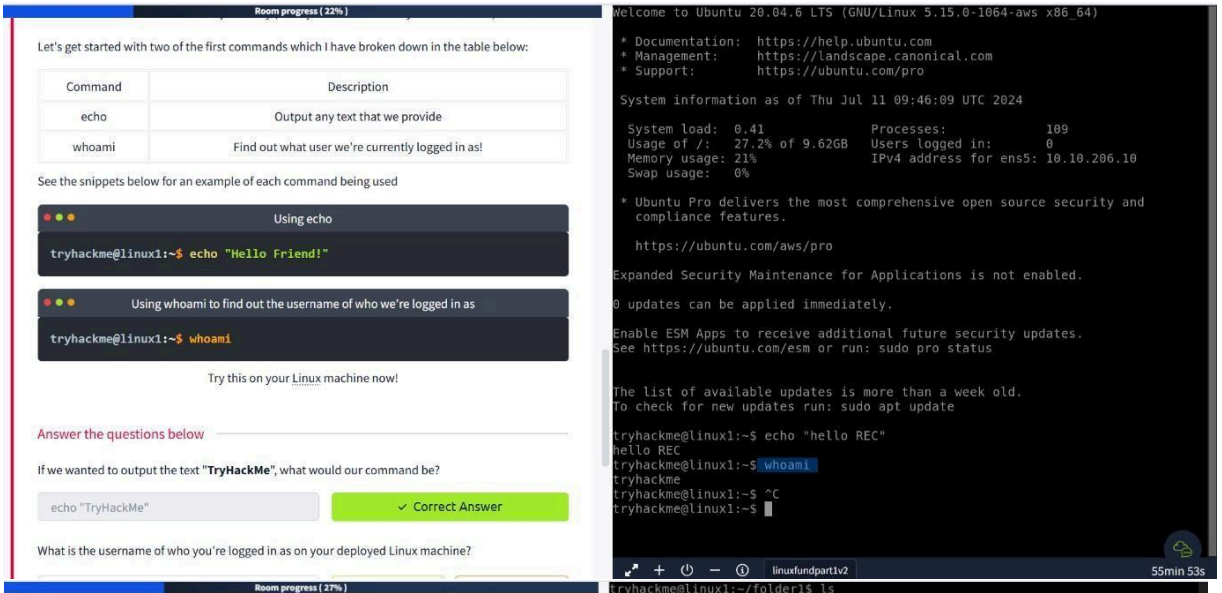
ALGORITHM:

1. Access the lab in TryHackMe platform using the link below- https://tryhackme.com/room/linuxfundamentalspart1
2. Click Start a Machine to start the Ubuntu Linux machine that you can interact with your browser.
3. Solve the task questions
4. Understand the history of Linux and the commands to interact with the filesystems.
5. Learn about commends like echo, whoami
6. Learn about Shell Operations.

OUTPUT:




Room progress (16%)
This contains all of the information for the machine deployed in the room including the IP address and expiry timer - along with buttons to manage the machine. Remember to "Terminate" a machine once you are done with the room. More information on this can be found in the tutorial room.
For now, press "Start Machine" where you will be able to interact with your own Linux machine within your browser whilst following along with this room:
Answer the questions below
I've deployed my first Linux machine!
No answer needed
✓ Correct Answer
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1064-aws x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro
System information as of Thu Jul 11 09:46:09 UTC 2024
System load: 0.41 Processes: 109
Usage of /: 27.2% of 9.62GB Users logged in: 0
Memory usage: 21% IPv4 address for ens5: 10.10.206.10
Swap usage: 0%
* Ubuntu Pro delivers the most comprehensive open source security and compliance features.
https://ubuntu.com/aws/pro
Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
The list of available updates is more than a week old.
To check for new updates run: sudo apt update
tryhackme@linux1:~$
linuxfundpart1v2
58min 39s


Room progress (22%)
Let's get started with two of the first commands which I have broken down in the table below:
Command
Description
echo
Output any text that we provide
whoami
Find out what user we're currently logged in as!
See the snippets below for an example of each command being used
Using echo
tryhackme@linux1:~$ echo "Hello Friend!"
Using whoami to find out the username of who we're logged in as
tryhackme@linux1:~$ whoami
Try this on your Linux machine now!
Answer the questions below
If we wanted to output the text "TryHackMe", what would our command be?
echo "TryHackMe"
✓ Correct Answer
What is the username of who you're logged in as on your deployed Linux machine?
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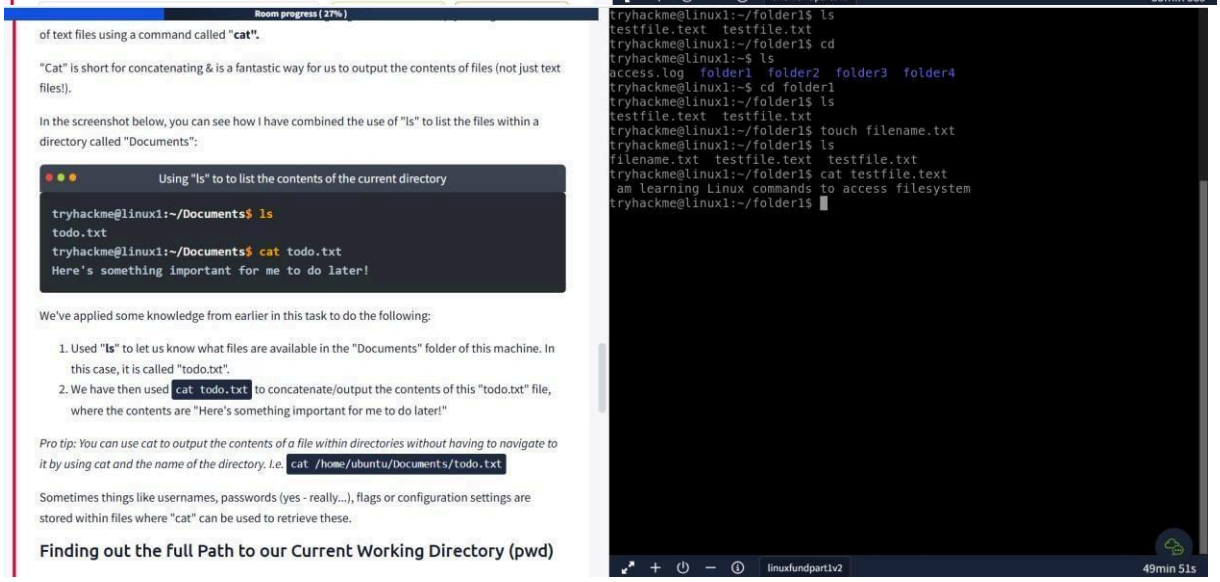
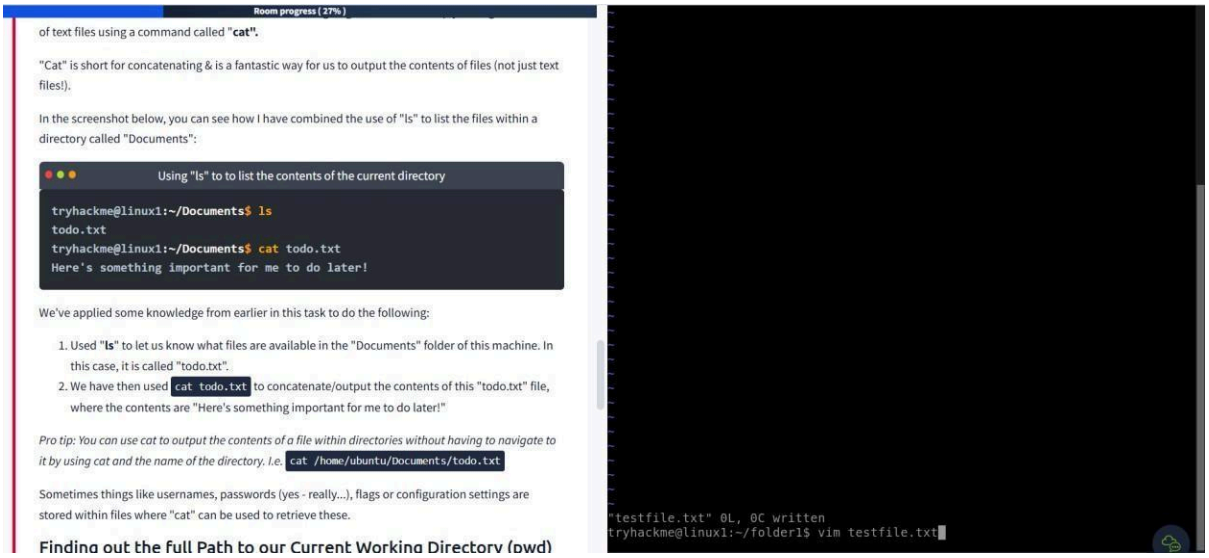
tryhackme@linux1:~$ echo "hello REC"
hello REC
tryhackme@linux1:~$ whoami
tryhackme
tryhackme@linux1:~$ ^C
tryhackme@linux1:~$
linuxfundpart1v2
55min 53s


Room progress (27%)
of text files using a command called "cat".
"Cat" is short for concatenating & is a fantastic way for us to output the contents of files (not just text files!).
In the screenshot below, you can see how I have combined the use of "ls" to list the files within a directory called "Documents":
Using "ls" to to list the contents of the current directory
tryhackme@linux1:~/Documents$ ls
todo.txt
tryhackme@linux1:~/Documents$ cat todo.txt
Here's something important for me to do later!
We've applied some knowledge from earlier in this task to do the following:
1. Used "ls" to let us know what files are available in the "Documents" folder of this machine. In this case, it is called "todo.txt".
2. We have then used cat todo.txt to concatenate/output the contents of this "todo.txt" file, where the contents are "Here's something important for me to do later!"
Pro tip: You can use cat to output the contents of a file within directories without having to navigate to it by using cat and the name of the directory. I.e. cat /home/ubuntu/Documents/todo.txt
Sometimes things like usernames, passwords (yes - really...), flags or configuration settings are stored within files where "cat" can be used to retrieve these.
Finding out the full Path to our Current Working Directory (pwd)
tryhackme@linux1:~/folder1$ ls
testfile.text testfile.txt
tryhackme@linux1:~/folder1$ cd
tryhackme@linux1:~$ ls
access.log folder1 folder2 folder3 folder4
tryhackme@linux1:~$ cd folder1
tryhackme@linux1:~/folder1$ ls
testfile.text testfile.txt
tryhackme@linux1:~/folder1$ touch filename.txt
tryhackme@linux1:~/folder1$ ls
filename.txt testfile.text testfile.txt
tryhackme@linux1:~/folder1$ cat testfile.text
am learning Linux commands to access filesystem
tryhackme@linux1:~/folder1$
linuxfundpart1v2
49min 51s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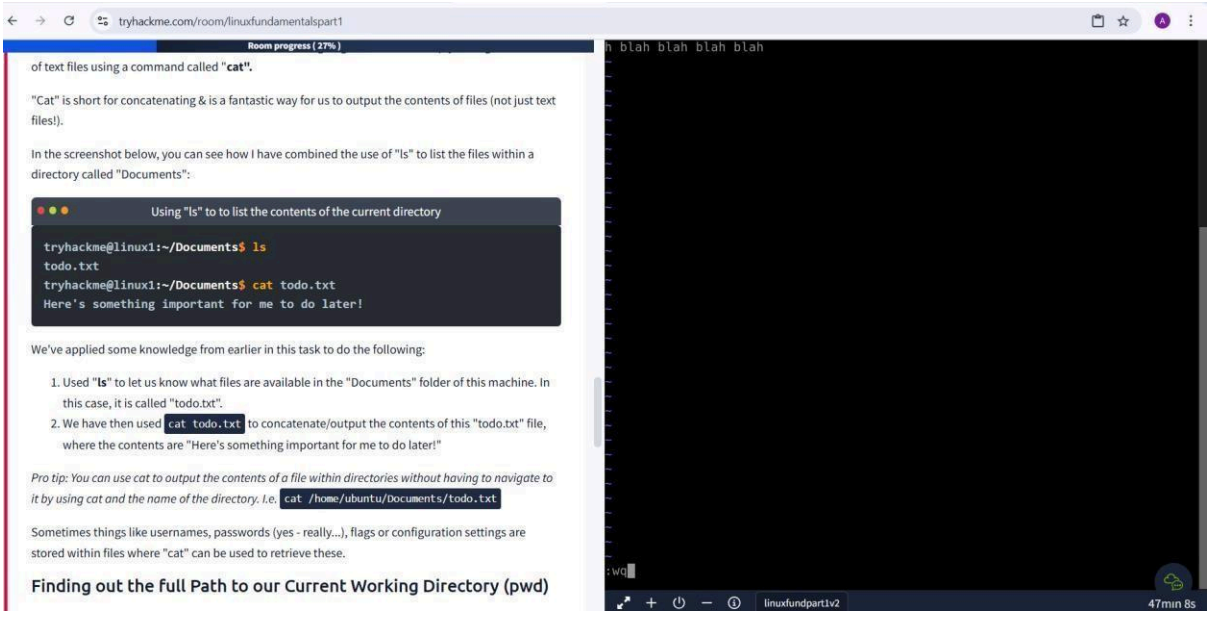
Finding out the full Path to our Current Working Directory (pwd)
"testfile.txt" 0L, 0C written
tryhackme@linux1:~/folder1$ vim testfile.txt


tryhackme.com/room/linuxfundamentalspart1
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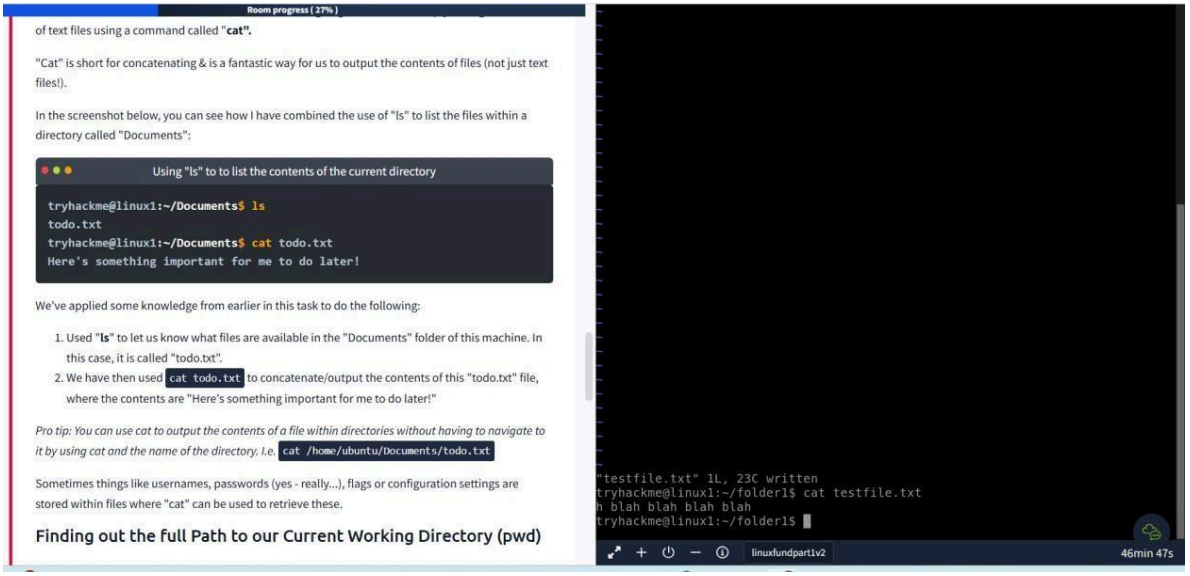
Finding out the full Path to our Current Working Directory (pwd)
h blah blah blah blah
:wq
linuxfundpart1v2
47min 8s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Finding out the full Path to our Current Working Directory (pwd)
"testfile.txt" 1L, 23C written
tryhackme@linux1:~/folder1$ cat testfile.txt
h blah blah blah blah
tryhackme@linux1:~/folder1$
linuxfundpart1v2
46min 47s

1. Understanding why Linux is so commonplace today
2. Interacting with your first-ever Linux machine!
3. Ran some of the most fundamental commands
4. Had an introduction to navigating around the filesystem & how we can use commands like find and grep to make finding data even more efficient!
5. Power up your commands by learning about some of the important shell operators.

Answer the questions below

Research: What year was the first release of a Linux operating system?

1991 ✓ Correct Answer

If we wanted to output the text "**TryHackMe**", what would our command be?

echo TryHackMe ✓ Correct Answer Hint

What is the username of who you're logged in as on your deployed Linux machine?

tryhackme ✓ Correct Answer Hint

On the Linux machine that you deploy, how many folders are there?

4 ✓ Correct Answer

Which directory contains a file?

folder4 ✓ Correct Answer Hint

What is the contents of this file?

Hello World ✓ Correct Answer

Use the cd command to navigate to this file and find out the new current working directory. What is the path?

/home/tryhackme/folder4 ✓ Correct Answer

Use grep on "access.log" to find the flag that has a prefix of "THM". What is the flag? **Note:** The "access.log" file is located in the "/home/tryhackme/" directory.

THM{ACCESS} ✓ Correct Answer Hint

And I still haven't found what I'm looking for!

No answer needed ✓ Correct Answer

If we wanted to run a command in the background, what operator would we want to use?

& ✓ Correct Answer

If I wanted to replace the contents of a file named "passwords" with the word "password123", what would my command be?

echo password123 > passwords ✓ Correct Answer Hint

Now if I wanted to add "tryhackme" to this file named "passwords" but also keep "passwords123", what would my command be

echo tryhackme >> passwords ✓ Correct Answer Hint

Now use the deployed Linux machine to put these into practice

No answer needed ✓ Correct Answer

RESULT:

This experiment provides a practical introduction to LINUX Operating system fundamentals, enabling to navigate, manage, and analyze system components efficiently.