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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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1.Introduction

1.1 Linux

Linux it is a free open-source operating system which was develop by Linus Torvalds in1991. It is Unix-like and works on various platforms including PCs, mainframe and also mobile devices. It also provides features such like multiuser management, multitasking, and virtual memory. It can make low-cost PCs function like a powerful workstation by offering networking, shared file systems, and X Window System amongst others. The different distributions of Linux are Debian, Ubuntu, and Fedora amongst others. Torvalds, along with a team of volunteers around the world, keeps improving the operating system continuously by following open-source development methods. Linux's popularity stems from its high performance, efficiency, and security features, making it attractive for personal use, educational institutions, and corporations. It can coexist with other operating systems, allowing users to maintain access to existing software. (Garrels, 2010)

1.2 1.Ubuntu

Ubuntu is a free and user-friendly operating system for all kinds of users, from the beginner to the expert. Besides its technological uses, Ubuntu is a philosophy in social development emanating from African culture. It puts a lot of emphasis on community-based identity and interconnectivity, summarized as "I am because we are.". This has become a popular concept in social work and was adopted as the theme for the Global Agenda for Social Work and Social Development from 2020 to 2030. Ubuntu's principles have been applied in several contexts, including South Africa's Truth and Reconciliation Commission, which promoted repentance, forgiveness, and reconciliation. Although Ubuntu has much to offer Western thought, especially regarding the limitations of individualism, it also has much to learn from the West about individual rights. Ubuntu's influence extends beyond social philosophy, impacting technological developments like the Ubuntu operating system. (Hailey, 2008)

1.3 Terminal and shell

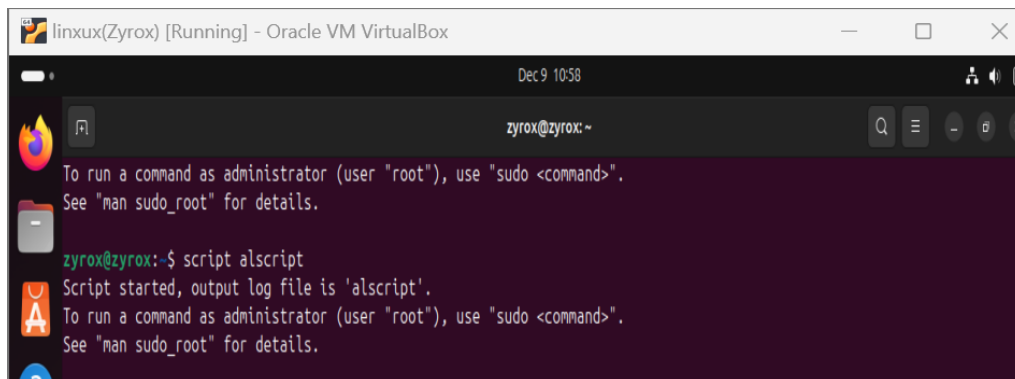
The terminal and shell in Linux are crucial to communicating with and controlling computer systems. Terminal servers can aid in easier maintenance in institutions by locating all operations in one server, and it has been proven that Linux servers use less resources and allow more clients than Windows. The bash shell is the default on most Linux systems, offers a command-line interface and can be accessed by Terminal windows and virtual consoles. It includes features like command history, line editing, and completion of commands for the efficiency of the end user. The user can run commands, perform process management, and even manipulate the filesystem from the shell prompt. The shell also provides input/output redirection between commands and files for further functionality. These make Linux Terminal and Shell powerful tools for administration and user interaction. (Garrels, 2010)

2. Steps of log 6

Step 1

Enter (script a1script) at the prompt.

1. That's the digit one (1) after the letter "a"—this is assignment one, not assignment el. The system will respond with



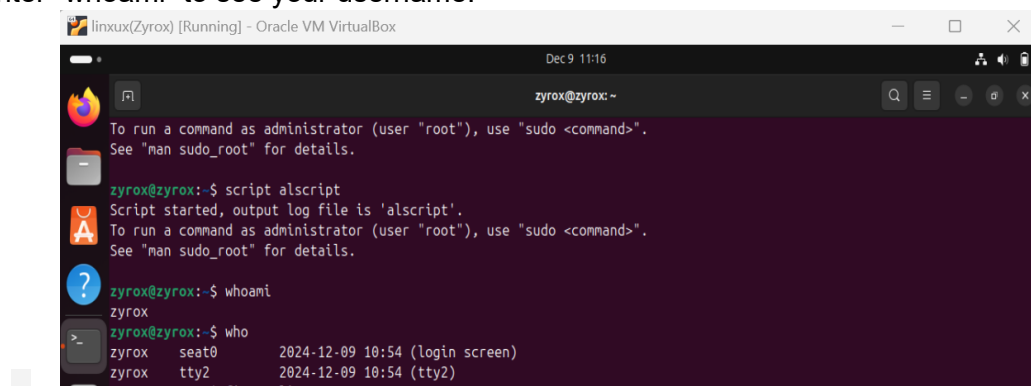
```
linux(Zyrox) [Running] - Oracle VM VirtualBox
Dec 9 10:58
zyrox@zyrox:~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
zyrox@zyrox:~$ script alscrip
Script started, output log file is 'alscript'.
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

Figure 1: Starting the script.

This command start the terminal activities into file named a1script.It helps for logging what you enter and the output you receive.

Step 2

- Enter "whoami" to see your username.



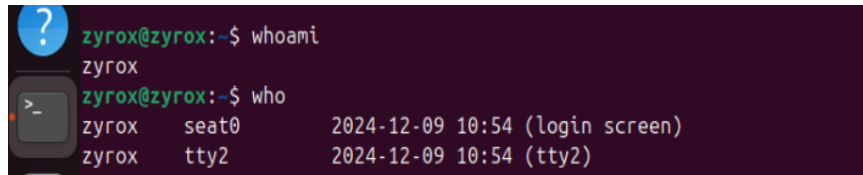
```
linux(Zyrox) [Running] - Oracle VM VirtualBox
Dec 9 11:16
zyrox@zyrox:~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
zyrox@zyrox:~$ script alscrip
Script started, output log file is 'alscript'.
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
zyrox@zyrox:~$ whoami
zyrox
zyrox@zyrox:~$ who
zyrox    seat0    2024-12-09 10:54 (login screen)
zyrox    tty2    2024-12-09 10:54 (tty2)
```

Figure 2: Checking username.

This command display the username of user.

Step 3

Then type "who" to see a list of everyone on the system.



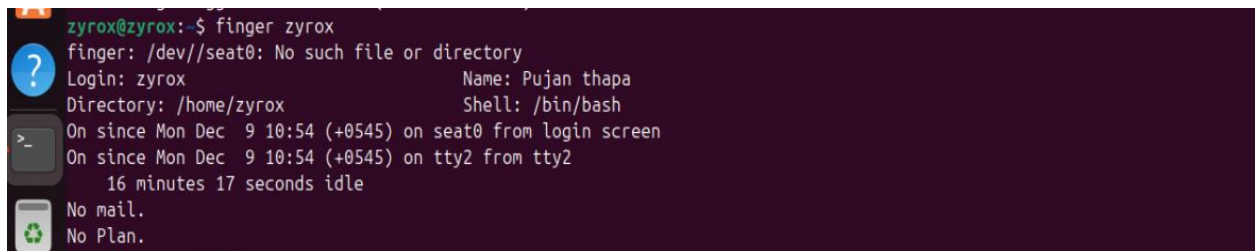
```
zyrox@zyrox:~$ whoami
zyrox
zyrox@zyrox:~$ who
zyrox    seat0    2024-12-09 10:54 (login screen)
zyrox    tty2      2024-12-09 10:54 (tty2)
```

Figure 3: List of everyone on the system.

This command displays all the users logged in to the system.

Step 4

Now, enter `finger` (your username) to see more information about your account.



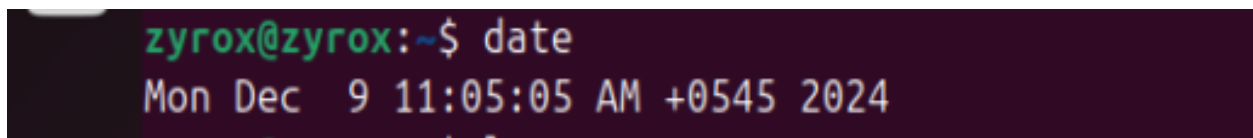
```
zyrox@zyrox:~$ finger zyrox
finger: /dev//seat0: No such file or directory
Login: zyrox                Name: Pujan thapa
Directory: /home/zyrox      Shell: /bin/bash
On since Mon Dec  9 10:54 (+0545) on seat0 from login screen
On since Mon Dec  9 10:54 (+0545) on tty2 from tty2
    16 minutes 17 seconds idle
No mail.
No Plan.
```

Figure 4: Information about your account.

This command gives detailed information about the specified user, such as their login time, home directory, and shell.

Step 5

Enter `date`, to see today's date and the current time.



```
zyrox@zyrox:~$ date
Mon Dec  9 11:05:05 AM +0545 2024
```

Figure 5: Checking date

This command shows current date and time.

Step 6

Type these three commands to produce different output.

`ls`

`ls -a`

`ls -a -l`

```

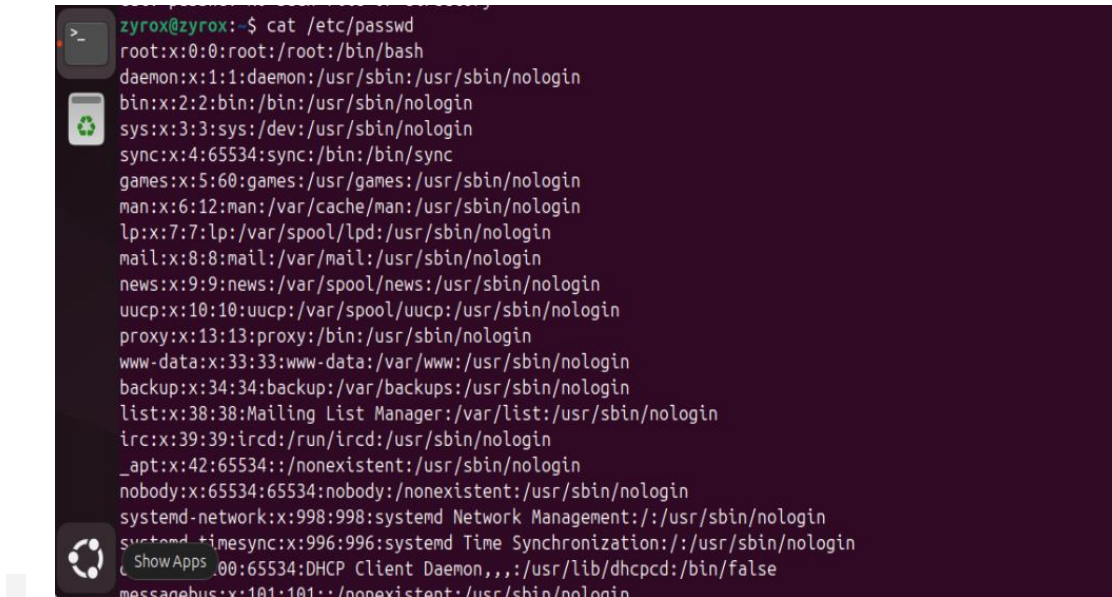
linux(Zyrox) [Running] - Oracle VM VirtualBox
Dec 9 11:17
zyrox@zyrox: ~
Mon Dec 9 11:05:05 AM +0545 2024
zyrox@zyrox:~$ ls
alscript Desktop Documents Downloads Music Pictures Public snap Templates Videos
zyrox@zyrox:~$ ls -a
. alscript .bashrc .config Documents .local Pictures Public .ssh Templates
.. .bash_logout .cache Desktop Downloads Music .profile snap .sudo_as_admin_successful Videos
zyrox@zyrox:~$ ls -a -l
.
..
alscript
.bash_logout
.bashrc
.cache
.config
Desktop
Documents
Downloads
.local
Music
Pictures
.profile
Public
snap
.ssh
.sudo_as_admin_successful
Templates
Videos
zyrox@zyrox:~$ cat /etc/passwd
bash: cat /etc/passwd: No such file or directory
zyrox@zyrox:~$ cat / etc / passwd
cat: / etc : Is a directory
zyrox@zyrox:~$ cat / etc / passwd
cat: / etc / passwd: No such file or directory

```

ls	It list all non-hidden files and the directories in the current directory
ls -a	It list all files which including hidden files (those starting with a.)
Ls -a -l	It provides a detailed list of all files, including file permissions, owner, size and last modification.

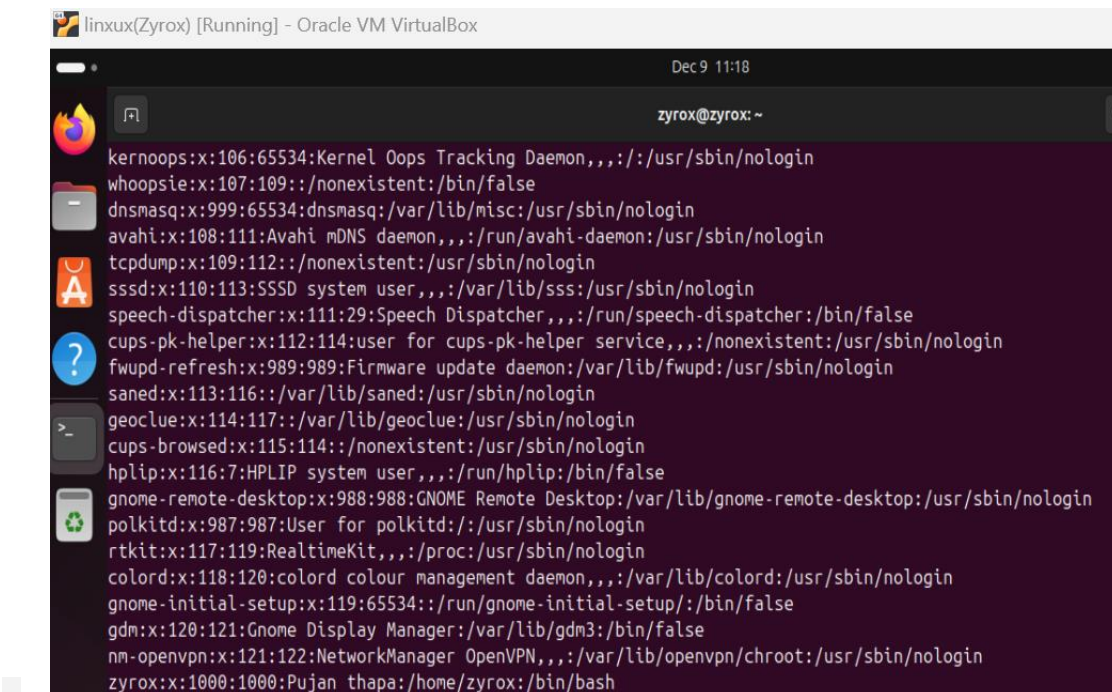
Step 7

Enter (cat /etc/passwd) to check what is in the file.



```
zyrox@zyrox:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
_apt:x:42:65534::/nonexistent:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin
systemd-timesync:x:996:996:systemd Time Synchronization:/:/usr/sbin/nologin
_000:x:65534:DHCP Client Daemon,,,:/usr/lib/dhcpd:/bin/false
messagebus:x:101:101::/nonexistent:/usr/sbin/nologin
```

Figure 6: Checking Data inside the file



```
linux(Zyrox) [Running] - Oracle VM VirtualBox
Dec 9 11:18
zyrox@zyrox:~$ cat /etc/passwd
kernoops:x:106:65534:Kernel Oops Tracking Daemon,,,:/usr/sbin/nologin
whoopsie:x:107:109::/nonexistent:/bin/false
dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin
avahi:x:108:111:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
tcpdump:x:109:112::/nonexistent:/usr/sbin/nologin
sssd:x:110:113:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
cups-pk-helper:x:112:114:user for cups-pk-helper service,,,:/nonexistent:/usr/sbin/nologin
fwupd-refresh:x:989:989:Firmware update daemon:/var/lib/fwupd:/usr/sbin/nologin
saned:x:113:116::/var/lib/saned:/usr/sbin/nologin
geoclue:x:114:117::/var/lib/geoclue:/usr/sbin/nologin
cups-browsed:x:115:114::/nonexistent:/usr/sbin/nologin
hplip:x:116:7:HPLIP system user,,,:/run/hplip:/bin/false
gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/sbin/nologin
polkitd:x:987:987:User for polkitd:/:/usr/sbin/nologin
rtkit:x:117:119:RealtimeKit,,,:/proc:/usr/sbin/nologin
colord:x:118:120:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
gnome-initial-setup:x:119:65534::/run/gnome-initial-setup:/bin/false
gdm:x:120:121:Gnome Display Manager:/var/lib/gdm3:/bin/false
nm-openvpn:x:121:122:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
zyrox:x:1000:1000:Pujan thapa:/home/zyrox:/bin/bash
```

Figure 7: Data inside the file

This command shows the content of the `/etc/passwd` file, which contain user account information on the system

Step 8

Creating a new file `test1` by entering (`echo "This is a one-line file" > test1`)


```

zyrox@zyrox:~$ echo "This is a one-line file" > test1
zyrox@zyrox:~$ cat > test2
This is file two.
It has several lines.
Three lines, in fact.
zyrox@zyrox:~$ ls
alscript  Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  test1  test2  Videos
zyrox@zyrox:~$ cat test1 > combined_file
zyrox@zyrox:~$ ls
alscript  combined_file  Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  test1  test2  Videos
zyrox@zyrox:~$

```

Figure 7: Creating a new file.

This command creates a file named test1 and writes the string "This is a one-line file" into it.

Step 9

Creating another file by entering this command

```
cat > test2
```

This is file two.

It has several lines.

Three lines, in fact.

^D (CTRL-D)

```

zyrox@zyrox:~$ echo "This is a one-line file" > test1
zyrox@zyrox:~$ cat > test2
This is file two.
It has several lines.
Three lines, in fact.

```

Figure 8: Creating another file.

This command helps to create a file named test2 then allows you to type multiple lines of text and (CTRL+D) save and exit

Step 10

Showing that the file exists, and what it contains.

```

It has several lines.
Three lines, in fact.
zyrox@zyrox:~$ ls
alscript  Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  test1  test2  Videos

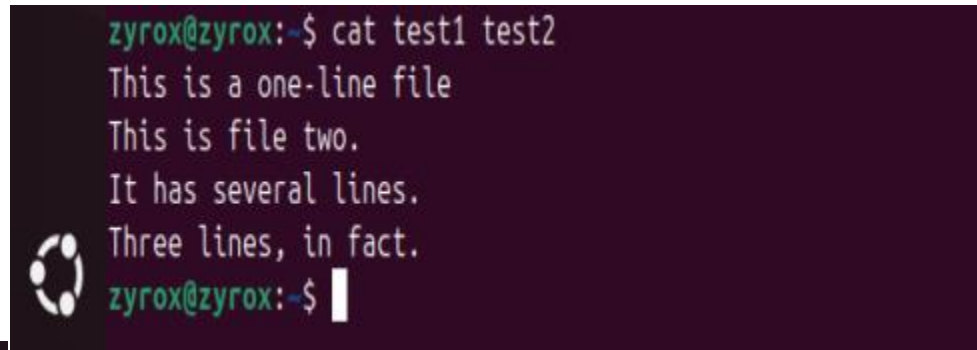
```

Figure 9: Showing file

This command Ensures the files test1 and test2 exist.

Step 11

Combining the test1 and test2.



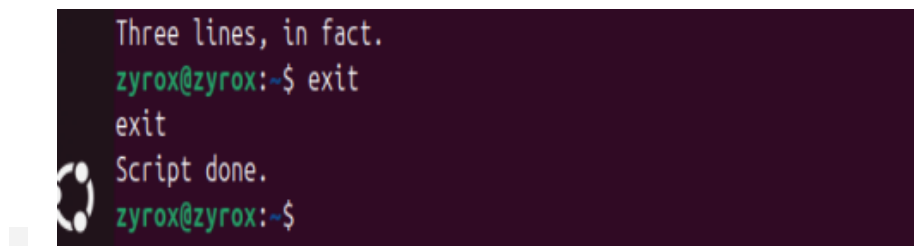
```
zyrox@zyrox:~$ cat test1 test2
This is a one-line file
This is file two.
It has several lines.
Three lines, in fact.
zyrox@zyrox:~$
```

Figure 10: Combing the test1 and test2.

This command combines the two selected files into the new file which name will be combined.

Step 12

Finally, Exit the script



```
Three lines, in fact.
zyrox@zyrox:~$ exit
exit
Script done.
zyrox@zyrox:~$
```

Figure 11: Exit the script

This command stop the recording if terminal activity.

3. References

Garrels, M. 2. I. t. L. F. C., 2010. Introduction to Linux.. In: s.l.:Fultus Corporation., p. 18.

Hailey, J., 2008. A literature review. Document. In: *A literature review. Document*. London: utu Foundation, pp. 2-3.