LINUX FUNDAMENTALS PROJECT

The case function was used to automate the output of this project.

The nano text editor was used to edit the script.

The five questions have been put in a case function. Below is how the backend looks.

1) **Display the Linux version.**

Backend script

Result

2) Display the private IP address, public IP address, and the default gateway.

Script:

For the private IP address, the 'grep' and 'awk' command were introduced to pick out just the IP address from the result of the ifconfig command.

For the default gateway, the 'head -1' was used to pick just the first line of the result. While the awk '{print $1}' command was used to print the line of the result needed.

```
b)|
echo "Your private IP address is: "
sleep 2
ifconfig | grep broadcast | awk '{print $2}'
sleep 2

echo "Your public IP address is: "
curl ifconfig.co
sleep 2

echo "Your default gateway is: "
sleep 2
ip route | head -1 | awk '{print $3}'
;;
```

Result

```
┌──(kali㊉kali)-[~]
└─$ bash p.sh
pick your option :

a) Display the Linux version
b) Display the private IP address, public IP address, and the default gateway
c) Display the hard disk size; free and used space
d) Display the top five (5) directories and their size
e) CPU usage; refresh every 10 seconds

b
Your private IP address is:
192.168.189.128
Your public IP address is:
129.205.113.145
Your default gateway is:
192.168.189.2
```

3) Display the hard disk size; free and used space.

Script: the '- -*output=*' was used to display the result for any column of choice and since the question specified just three (size, free and used space), those three were selected.

```
c) echo "View your hard disk details below: "
sleep 2
df -h --output=source,size,used,avail
;;
```

Result

```
┌──(kali㉿kali)-[~]
└─$ bash p.sh
pick your option :

a) Display the Linux version
b) Display the private IP address, public IP address, and the default gateway
c) Display the hard disk size; free and used space
d) Display the top five (5) directories and their size
e) CPU usage; refresh every 10 seconds

c
View your hard disk details below:
Filesystem      Size  Used Avail
udev            943M     0  943M
tmpfs           197M  1.2M  196M
/dev/sda1        78G   18G   56G
tmpfs           983M     0  983M
tmpfs           5.0M     0  5.0M
tmpfs           197M   84K  197M
```

4) Display the top five (5) directories and their size.

Script:

The '-*hs*' is used to display the summary of the output and in human readable format.

The '*sort -d*' is used to sort the output in order of alphanumeric characters.

The '*head -5*' is used to print the first 5 results.

```
d)
echo " Here are your top 5 directories and their sizes: "
sleep 2
du -hs * | sort -d | head -5
;;
```

Result

```
  ─(kali@kali)-[~]
  └─$ bash p.sh
pick your option :

a) Display the Linux version
b) Display the private IP address, public IP address, and the default gateway
c) Display the hard disk size; free and used space
d) Display the top five (5) directories and their size
e) CPU usage; refresh every 10 seconds

d
 Here are your top 5 directories and their sizes:
16K     Documents
4.0K    Desktop
4.0K    Downloads
4.0K    Music
4.0K    Pictures
```

5) Display the CPU usage; refresh every 10 seconds.

Script:

The '-*d 10*' displays the result at an interval of 10 seconds.

The '*grep %Cpu*' displays results for only the %Cpu.

```
e)
 echo "your CPU usage at an interval of 10 seconds is: "
top -d 10 | grep %Cpu
;;
esac
```

Result

```
┌──(kali㉿kali)-[~]
└─$ bash p.sh
pick your option :

a) Display the Linux version
b) Display the private IP address, public IP address, and the default gateway
c) Display the hard disk size; free and used space
d) Display the top five (5) directories and their size
e) CPU usage; refresh every 10 seconds

e
your CPU usage at an interval of 10 seconds is:
%Cpu(s):100.0 us,   0.0 sy,   0.0 ni,   0.0 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu(s):  1.6 us,   0.5 sy,   0.0 ni, 97.9 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu(s):  2.9 us,   1.9 sy,   0.0 ni, 95.3 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu(s):  1.8 us,   0.3 sy,   0.0 ni, 97.9 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu(s):  1.7 us,   0.2 sy,   0.0 ni, 98.1 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu(s):  1.6 us,   0.4 sy,   0.0 ni, 97.6 id,   0.4 wa,   0.0 hi,   0.0 si,   0.0 st
%Cpu(s):  1.5 us,   0.4 sy,   0.0 ni, 98.1 id,   0.0 wa,   0.0 hi,   0.0 si,   0.0 st
```