

CYSE 301: Cybersecurity Technique and Operations

Assignment: Lab 1– Basic Linux commands

Owin Ifill

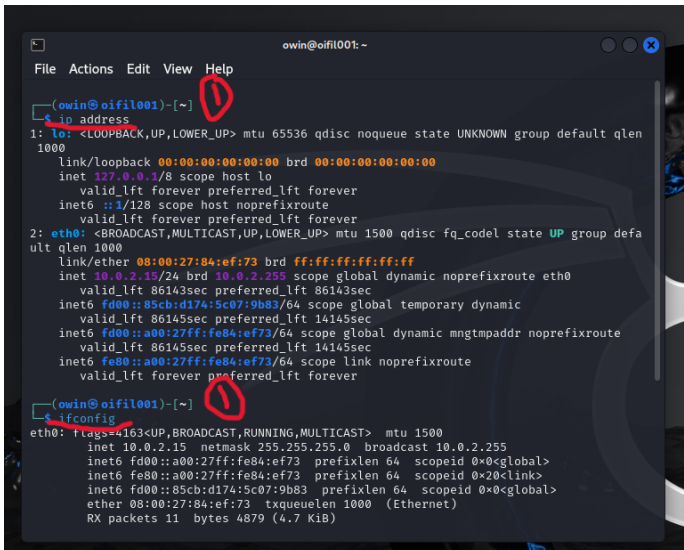
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Task A: Practice with the Basic Linux Commands

You can take one screenshot to cover the answer for multiple tasks.

1. (10 pt) How do you find the IP address of your Linux machine using the command line?

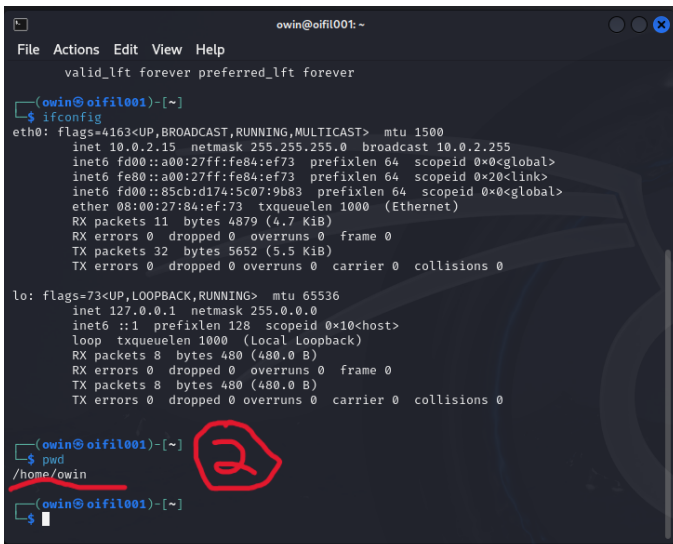
Here I used the commands of ip address and ifconfig to find the IP address in the Linux terminal.



```
owin@oifil001: ~  
File Actions Edit View Help  
owin@oifil001: ~  
$ ip address  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host noprefixroute  
        valid_lft forever preferred_lft forever  
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000  
    link/ether 08:00:27:84:ef:73 brd ff:ff:ff:ff:ff:ff  
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute eth0  
        valid_lft 86143sec preferred_lft 86143sec  
    inet6 fd00::85cb:d174:5c07:9b83/64 scope global temporary dynamic  
        valid_lft 86145sec preferred_lft 14145sec  
    inet6 fd00::a00:27ff:fe84:ef73/64 scope global dynamic mngtmpaddr noprefixroute  
        valid_lft 86145sec preferred_lft 14145sec  
    inet6 fe80::a00:27ff:fe84:ef73/64 scope link noprefixroute  
        valid_lft forever preferred_lft forever  
owin@oifil001: ~  
$ ifconfig  
eth0: flags=4163<UP, BROADCAST, RUNNING, MULTICAST> mtu 1500  
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255  
    inet6 fd00::a00:27ff:fe84:ef73 prefixlen 64 scopeid 0<global>  
    inet6 fe80::a00:27ff:fe84:ef73 prefixlen 64 scopeid 0<link>  
    inet6 fd00::85cb:d174:5c07:9b83 prefixlen 64 scopeid 0<global>  
    ether 08:00:27:84:ef:73 txqueuelen 1000 (Ethernet)  
    RX packets 11 bytes 4879 (4.7 KiB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 32 bytes 5652 (5.5 KiB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
lo: flags=73<UP, LOOPBACK, RUNNING> mtu 65536  
    inet 127.0.0.1 netmask 255.0.0.0  
    inet6 ::1 prefixlen 128 scopeid 0<host>  
    loop txqueuelen 1000 (Local Loopback)  
    RX packets 8 bytes 480 (480.0 B)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 8 bytes 480 (480.0 B)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

2. (10 pt) Display your current directory in a terminal.

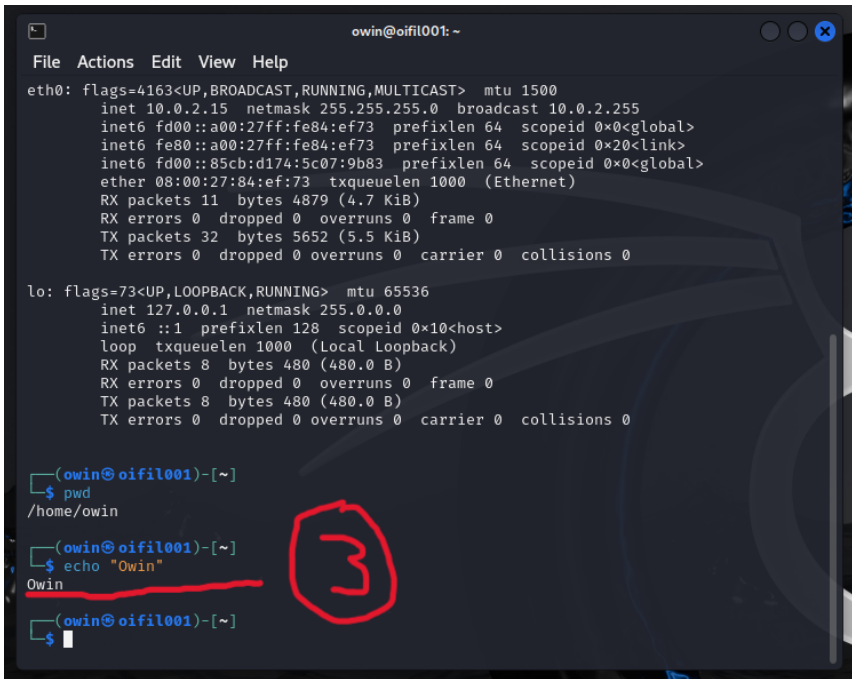
For step 2, I used the pwd command to show what my current directory was.



```
owin@oifil001: ~  
File Actions Edit View Help  
    valid_lft forever preferred_lft forever  
owin@oifil001: ~  
$ ifconfig  
eth0: flags=4163<UP, BROADCAST, RUNNING, MULTICAST> mtu 1500  
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255  
    inet6 fd00::a00:27ff:fe84:ef73 prefixlen 64 scopeid 0<global>  
    inet6 fe80::a00:27ff:fe84:ef73 prefixlen 64 scopeid 0<link>  
    inet6 fd00::85cb:d174:5c07:9b83 prefixlen 64 scopeid 0<global>  
    ether 08:00:27:84:ef:73 txqueuelen 1000 (Ethernet)  
    RX packets 11 bytes 4879 (4.7 KiB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 32 bytes 5652 (5.5 KiB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
lo: flags=73<UP, LOOPBACK, RUNNING> mtu 65536  
    inet 127.0.0.1 netmask 255.0.0.0  
    inet6 ::1 prefixlen 128 scopeid 0<host>  
    loop txqueuelen 1000 (Local Loopback)  
    RX packets 8 bytes 480 (480.0 B)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 8 bytes 480 (480.0 B)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
owin@oifil001: ~  
$ pwd  
/home/owin  
owin@oifil001: ~  
$
```

3. (10 pt) Use the `echo` command to print your name to the console.

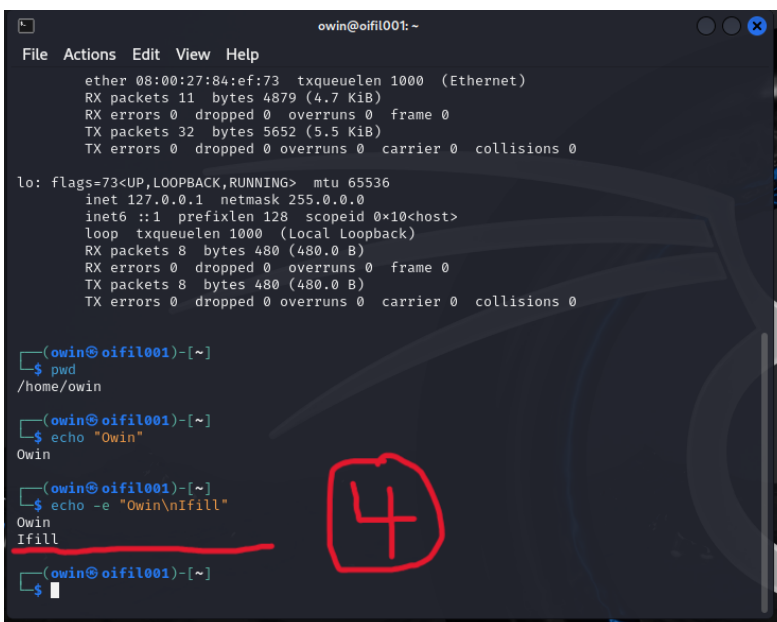
I used the `echo` command to print my name, Owin.



```
owin@oifil001: ~  
File Actions Edit View Help  
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255  
inet6 fd00::a00:27ff:fe84:ef73 prefixlen 64 scopeid 0<global>  
inet6 fe80::a00:27ff:fe84:ef73 prefixlen 64 scopeid 0<20<link>  
inet6 fd00::85cb:d174:5c07:9b83 prefixlen 64 scopeid 0<0<global>  
ether 08:00:27:84:ef:73 txqueuelen 1000 (Ethernet)  
RX packets 11 bytes 4879 (4.7 KiB)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 32 bytes 5652 (5.5 KiB)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
inet 127.0.0.1 netmask 255.0.0.0  
inet6 ::1 prefixlen 128 scopeid 0<10<host>  
loop txqueuelen 1000 (Local Loopback)  
RX packets 8 bytes 480 (480.0 B)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 8 bytes 480 (480.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
(owin@oifil001)-[~]  
$ pwd  
/home/owin  
  
(owin@oifil001)-[~]  
$ echo "Owin"  
Owin  
  
(owin@oifil001)-[~]  
$
```

4. (10 pt) Display your first and last names in two separate lines using a **single** `echo` command (tip: how to enable the interpretation of escape characters?)

To showcase my first and last name on two separate lines I used `echo -e "Owin\nIfill"`.



```
owin@oifil001: ~  
File Actions Edit View Help  
ether 08:00:27:84:ef:73 txqueuelen 1000 (Ethernet)  
RX packets 11 bytes 4879 (4.7 KiB)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 32 bytes 5652 (5.5 KiB)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
inet 127.0.0.1 netmask 255.0.0.0  
inet6 ::1 prefixlen 128 scopeid 0<10<host>  
loop txqueuelen 1000 (Local Loopback)  
RX packets 8 bytes 480 (480.0 B)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 8 bytes 480 (480.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
(owin@oifil001)-[~]  
$ pwd  
/home/owin  
  
(owin@oifil001)-[~]  
$ echo "Owin"  
Owin  
  
(owin@oifil001)-[~]  
$ echo -e "Owin\nIfill"  
Owin  
Ifill  
  
(owin@oifil001)-[~]  
$
```

5. (10 pt) How to change to home directory using `cd` command and, absolute pathname.

Here I changed to back to my home directory by doing `cd~` and under the 2nd red line is me using the absolute pathname.



```
owin@oifil001: ~  
File Actions Edit View Help  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
inet 127.0.0.1 netmask 255.0.0.0  
inet6 ::1 prefixlen 128 scopeid 0x10<host>  
loop txqueuelen 1000 (Local Loopback)  
RX packets 8 bytes 480 (480.0 B)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 8 bytes 480 (480.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
owin@oifil001)-[~]  
$ pwd  
/home/owin  
  
owin@oifil001)-[~]  
$ echo "Owin"  
Owin  
  
owin@oifil001)-[~]  
$ echo -e "Owin\nIfill"  
Owin  
Ifill  
  
owin@oifil001)-[~]  
$ cd ~  
  
owin@oifil001)-[~]  
$ cd /home/owin  
  
owin@oifil001)-[~]  
$
```

A red circle with the number 5 is drawn around the `cd /home/owin` command line.

6. (10 pt) Create a new file named “forXXXX.txt” in your home directory (replace “XXXX” with your own MIDAS). Then, use the long listing format to display the contents in your home directory.

To create a new file I used the touch command. I named the file `foroifil001`, replacing the XXXX with my MIDAS name. The 2nd screen shot is me using the `ls -l` show the long list in my home directory.

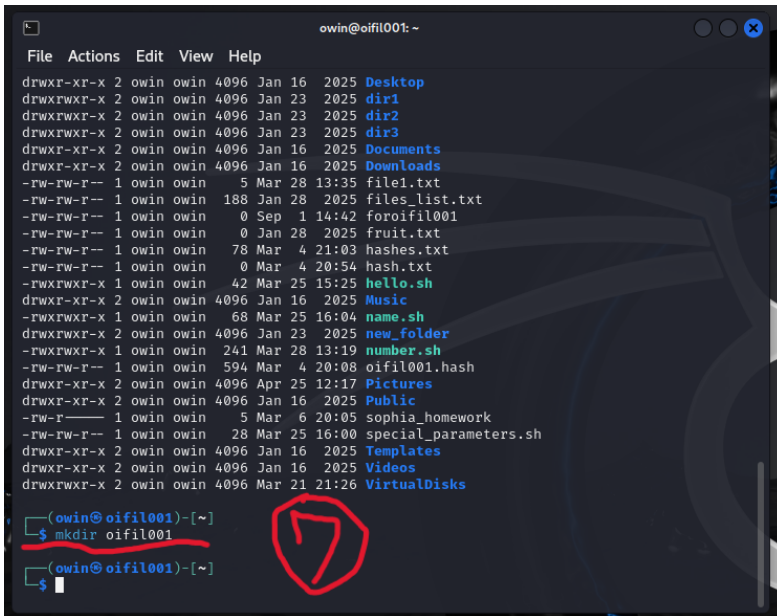
```
owin@oifil001: ~  
File Actions Edit View Help  
loop txqueuelen 1000 (Local Loopback)  
RX packets 8 bytes 480 (480.0 B)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 8 bytes 480 (480.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
(owin@oifil001)-[~]  
$ pwd  
/home/owin  
  
(owin@oifil001)-[~]  
$ echo "Owin"  
Owin  
  
(owin@oifil001)-[~]  
$ echo -e "Owin\nIfill"  
Owin  
Ifill  
  
(owin@oifil001)-[~]  
$ cd ~  
  
(owin@oifil001)-[~]  
$ cd /home/owin  
  
(owin@oifil001)-[~]  
$ touch "foroifil001"  
  
(owin@oifil001)-[~]  
$
```

```
owin@oifil001: ~  
File Actions Edit View Help  
(owin@oifil001)-[~]  
$ ls -l  
total 112  
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 apple.txt  
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 apricot.txt  
-rwxrwxr-x 1 owin owin 140 Apr 4 14:01 backup.sh  
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 banana.txt  
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 blueberry.txt  
-rwxrwxr-x 1 owin owin 483 Mar 28 13:34 bob.sh  
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 cherry.txt  
-rw-r--r-- 1 owin owin 5480 Feb 11 2025 copyright_cyse270  
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 cranberry.txt  
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 cyse270  
drwxrwxr-x 2 owin owin 4096 Feb 1 2025 data  
-rw-rw-r-- 1 owin owin 0 Jan 28 2025 demo.txt  
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Desktop  
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir1  
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir2  
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir3  
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Documents  
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Downloads  
-rw-rw-r-- 1 owin owin 5 Mar 28 13:35 file1.txt  
-rw-rw-r-- 1 owin owin 188 Jan 28 2025 files_list.txt  
-rw-rw-r-- 1 owin owin 0 Sep 1 14:42 foroifil001  
-rw-rw-r-- 1 owin owin 0 Jan 28 2025 fruit.txt  
-rw-rw-r-- 1 owin owin 78 Mar 4 21:03 hashes.txt  
-rw-rw-r-- 1 owin owin 0 Mar 4 20:54 hash.txt  
-rwxrwxr-x 1 owin owin 42 Mar 25 15:25 hello.sh  
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Music  
-rwxrwxr-x 1 owin owin 68 Mar 25 16:04 name.sh  
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 new_folder
```

What is the size of the file you just created? The size of the file is 0.

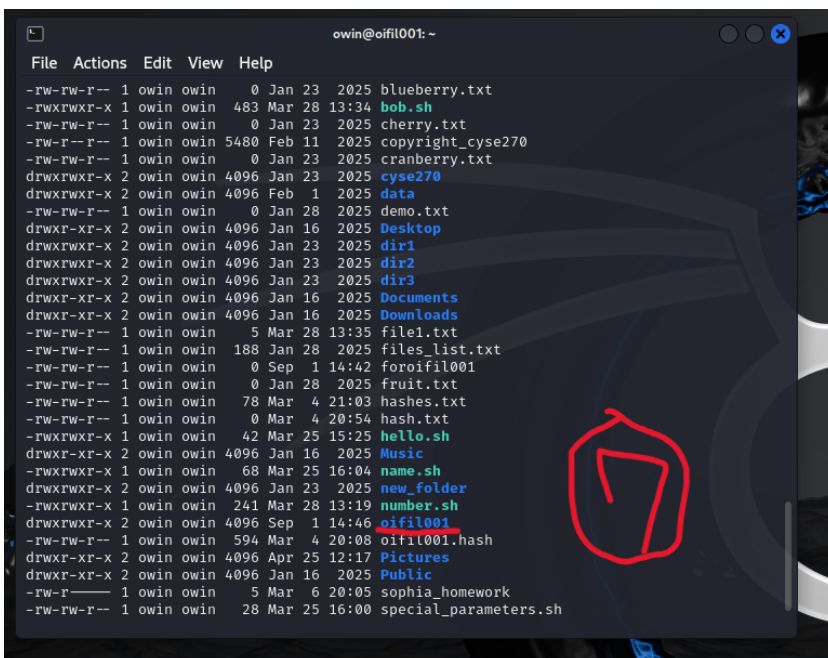
7. (20 pt) Create a new directory named "XXXX" in your home directory (replace "XXXX" with your own MIDAS). Then, use the long listing format to display the contents in your home directory.

Making a new directory I used the mkdir command, the 2nd screenshot is me underlining the where it is shown in the long listing format.



```
File Actions Edit View Help
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Desktop
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir1
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir2
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir3
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Documents
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Downloads
-rw-rw-r-- 1 owin owin 5 Mar 28 13:35 file1.txt
-rw-rw-r-- 1 owin owin 188 Jan 28 2025 files_list.txt
-rw-rw-r-- 1 owin owin 0 Sep 1 14:42 foroifil001
-rw-rw-r-- 1 owin owin 0 Jan 28 2025 fruit.txt
-rw-rw-r-- 1 owin owin 78 Mar 4 21:03 hashes.txt
-rw-rw-r-- 1 owin owin 0 Mar 4 20:54 hash.txt
-rwxrwxr-x 1 owin owin 42 Mar 25 15:25 hello.sh
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Music
-rwxrwxr-x 1 owin owin 68 Mar 25 16:04 name.sh
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 new_folder
-rwxrwxr-x 1 owin owin 241 Mar 28 13:19 number.sh
-rw-rw-r-- 1 owin owin 594 Mar 4 20:08 oifil001.hash
drwxr-xr-x 2 owin owin 4096 Apr 25 12:17 Pictures
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Public
-rw-r----- 1 owin owin 5 Mar 6 20:05 sophia_homework
-rw-rw-r-- 1 owin owin 28 Mar 25 16:00 special_parameters.sh
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Templates
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Videos
drwxrwxr-x 2 owin owin 4096 Mar 21 21:26 VirtualDisks

(owin@oifil001)-[~]
$ mkdir oifil001
(owin@oifil001)-[~]
```

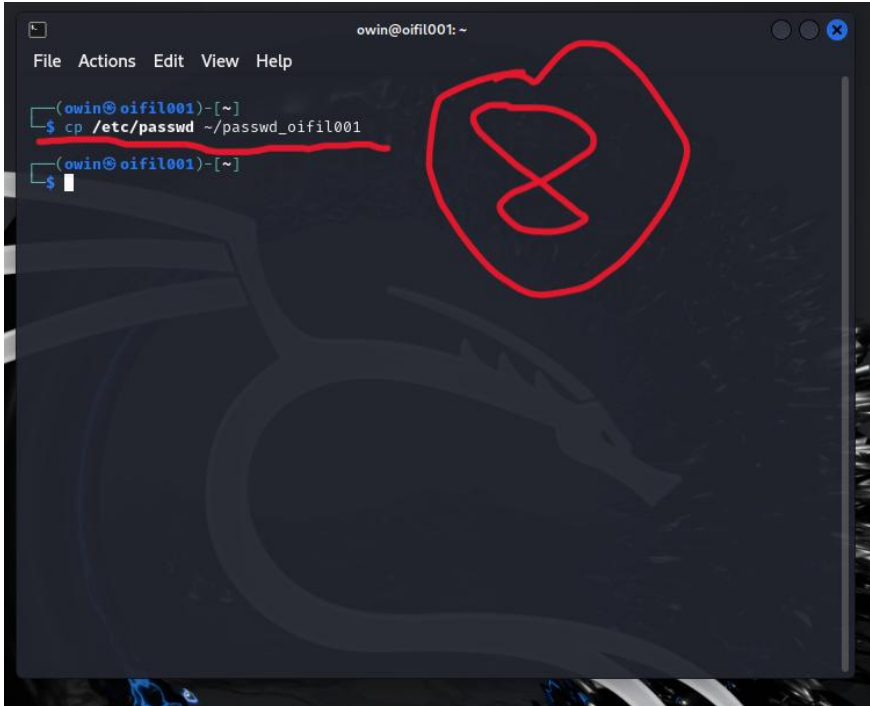


```
File Actions Edit View Help
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 blueberry.txt
-rwxrwxr-x 1 owin owin 483 Mar 28 13:34 bob.sh
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 cherry.txt
-rw-r--r-- 1 owin owin 5480 Feb 11 2025 copyright_cyse270
-rw-rw-r-- 1 owin owin 0 Jan 23 2025 cranberry.txt
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 cyse270
drwxrwxr-x 2 owin owin 4096 Feb 1 2025 data
-rw-rw-r-- 1 owin owin 0 Jan 28 2025 demo.txt
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Desktop
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir1
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir2
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 dir3
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Documents
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Downloads
-rw-rw-r-- 1 owin owin 5 Mar 28 13:35 file1.txt
-rw-rw-r-- 1 owin owin 188 Jan 28 2025 files_list.txt
-rw-rw-r-- 1 owin owin 0 Sep 1 14:42 foroifil001
-rw-rw-r-- 1 owin owin 0 Jan 28 2025 fruit.txt
-rw-rw-r-- 1 owin owin 78 Mar 4 21:03 hashes.txt
-rw-rw-r-- 1 owin owin 0 Mar 4 20:54 hash.txt
-rwxrwxr-x 1 owin owin 42 Mar 25 15:25 hello.sh
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Music
-rwxrwxr-x 1 owin owin 68 Mar 25 16:04 name.sh
drwxrwxr-x 2 owin owin 4096 Jan 23 2025 new_folder
-rwxrwxr-x 1 owin owin 241 Mar 28 13:19 number.sh
drwxrwxr-x 2 owin owin 4096 Sep 1 14:46 oifil001
-rw-rw-r-- 1 owin owin 594 Mar 4 20:08 oifil001.hash
drwxr-xr-x 2 owin owin 4096 Apr 25 12:17 Pictures
drwxr-xr-x 2 owin owin 4096 Jan 16 2025 Public
-rw-r----- 1 owin owin 5 Mar 6 20:05 sophia_homework
-rw-rw-r-- 1 owin owin 28 Mar 25 16:00 special_parameters.sh
```

What is the size of the file you just created? The size of this file is 4096.

8. (20 pt) Copy /etc/passwd file to your home directory. The copy should be named as "passwd_XXXX" (replace "XXXX" with your own MIDAS) in your home directory. Then, complete the following two subtasks:

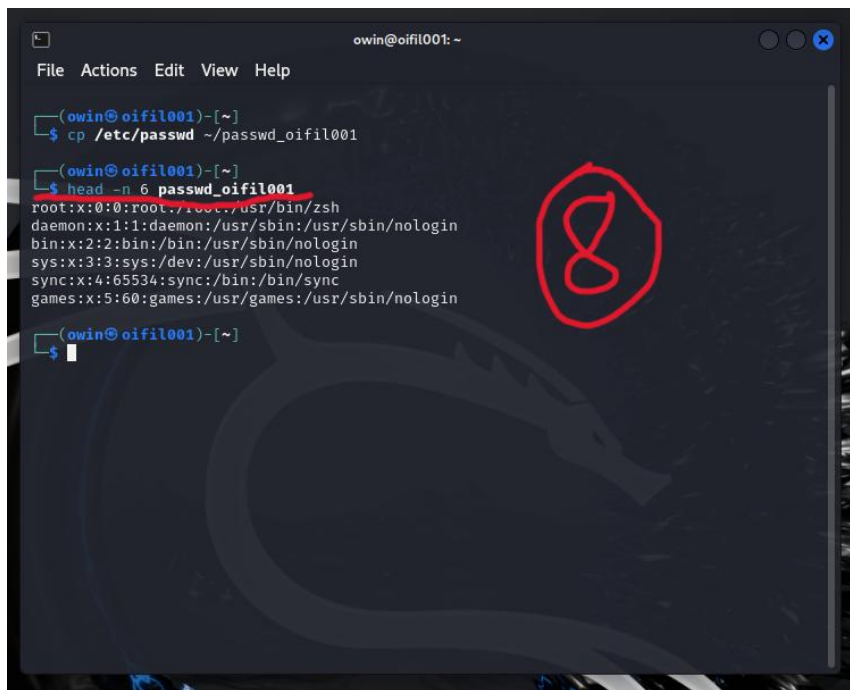
To copy the `/etc/passwd` file I used the `cp` command.



```
owin@oifil001: ~  
File Actions Edit View Help  
(owin@oifil001)-[~]  
$ cp /etc/passwd ~/passwd_oifil001  
(owin@oifil001)-[~]  
$
```

- Use the proper command to display the first **six** lines in this file.

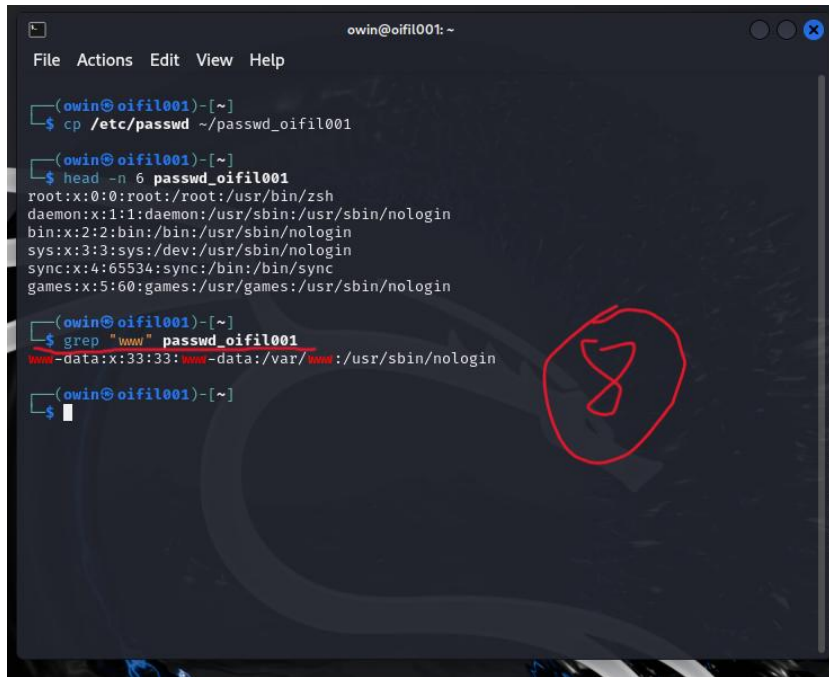
To showcase the first six lines I used the command `head -n 6`.



```
owin@oifil001: ~  
File Actions Edit View Help  
(owin@oifil001)-[~]  
$ cp /etc/passwd ~/passwd_oifil001  
(owin@oifil001)-[~]  
$ head -n 6 passwd_oifil001  
root:x:0:0:root:/root:/usr/bin/zsh  
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  
(owin@oifil001)-[~]  
$
```

- Search keyword “**www**” in this file.

The grep command was used to search “www” in the passwd file.



```
owin@oifil001: ~  
File Actions Edit View Help  
owin@oifil001)-[~]  
$ cp /etc/passwd ~/passwd_oifil001  
owin@oifil001)-[~]  
$ head -n 6 passwd_oifil001  
root:x:0:0:root:/root:/usr/bin/zsh  
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  
owin@oifil001)-[~]  
$ grep "www" passwd_oifil001  
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin  
owin@oifil001)-[~]  
$
```