VISHWAKARMA INSTITUTE OF TECHNOLOGY

COMPUTER ENGINEERING

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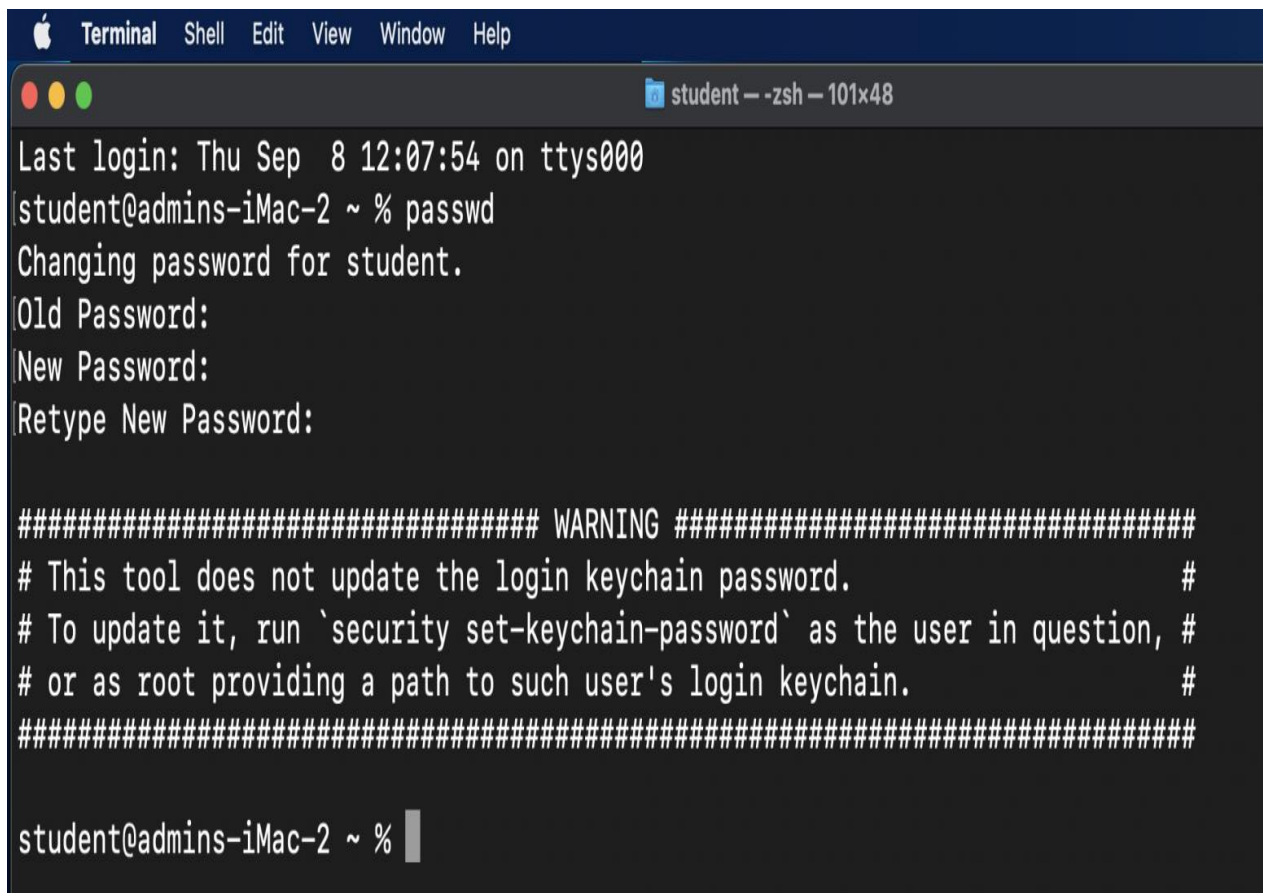
Division: CSA

Roll Number: 38

Subject: Operating System (OS) LAB

Lab Assignment 1

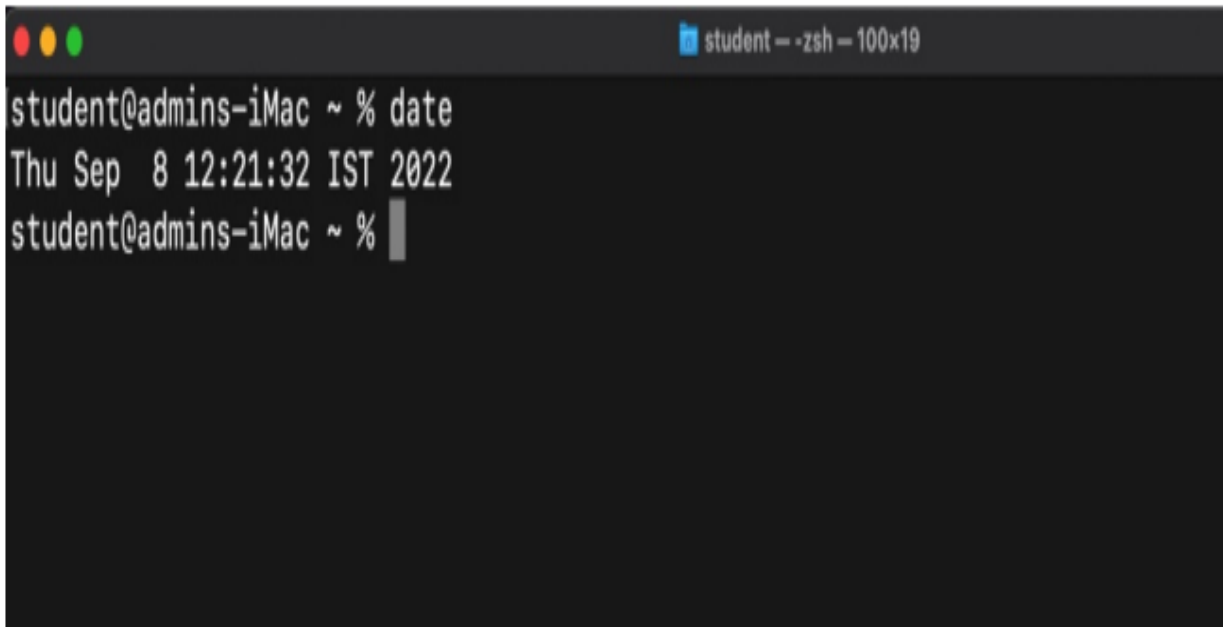1. Change your password to a password you would like to use for the remainder of the semester.
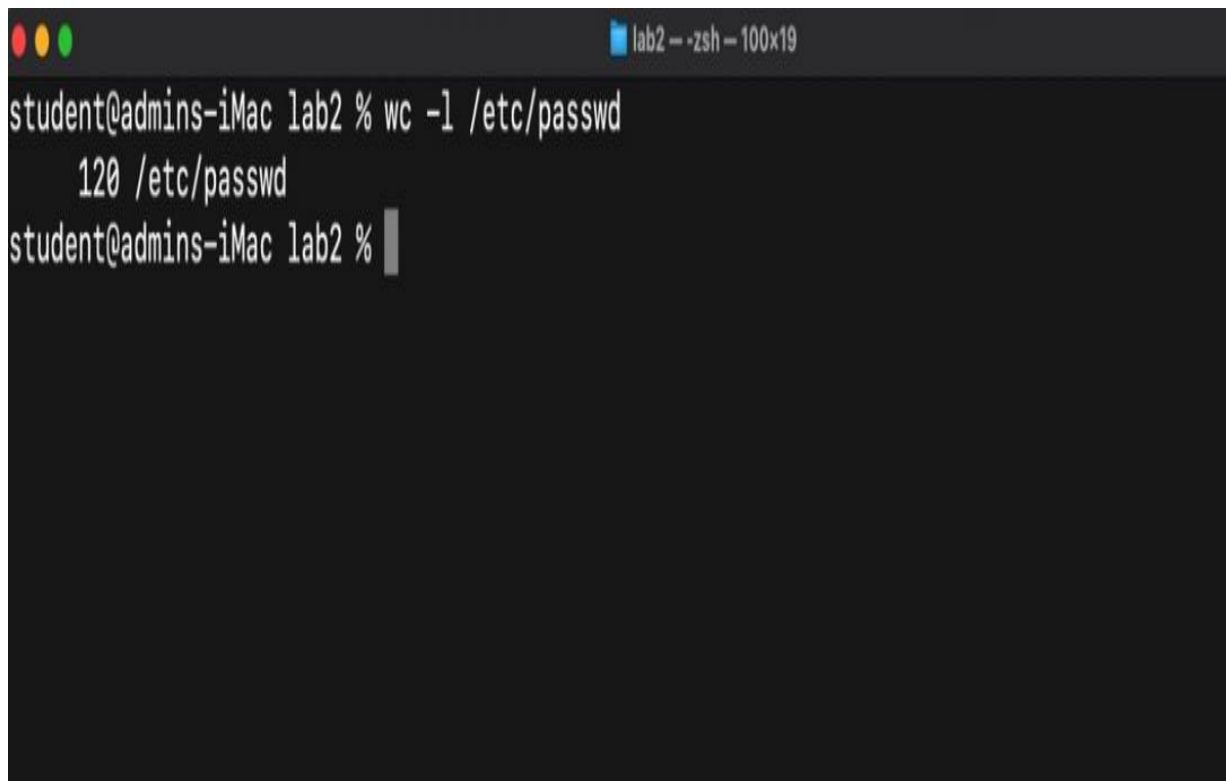
2. Display the system's date.
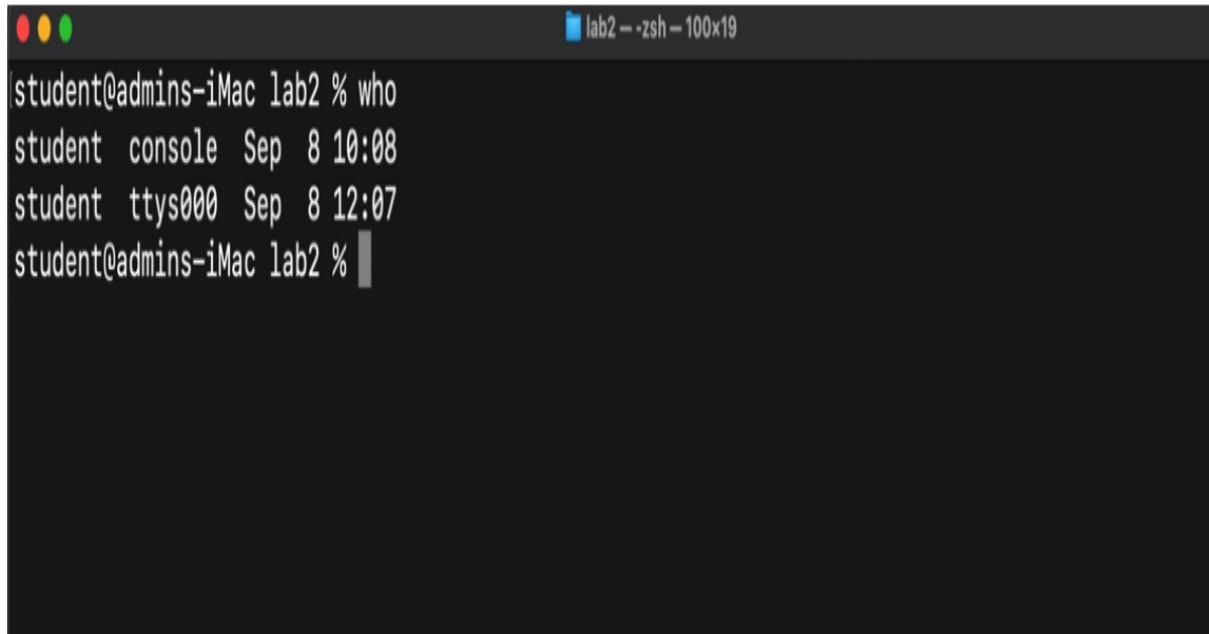
3. Count the number of lines in the /etc/passwd file.

4. Find out who else is on the system.

5. Direct the output of the man pages for the date command to a file named mydate.
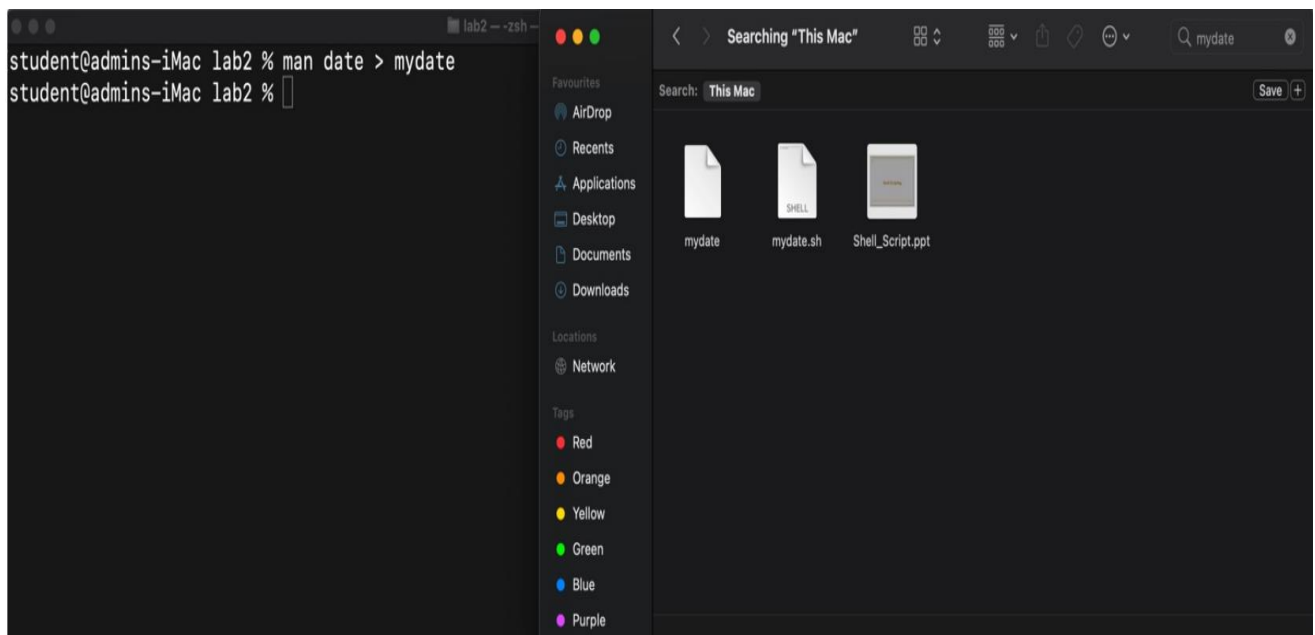
6. Create a subdirectory called mydir.
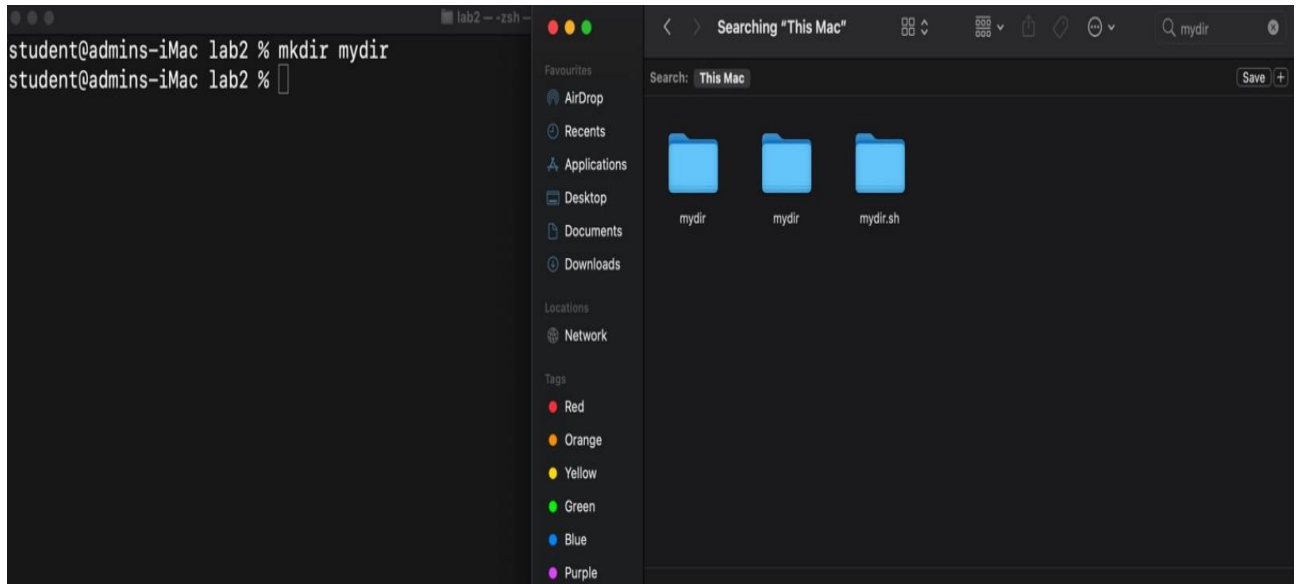
7. Move the file mydate into the new subdirectory
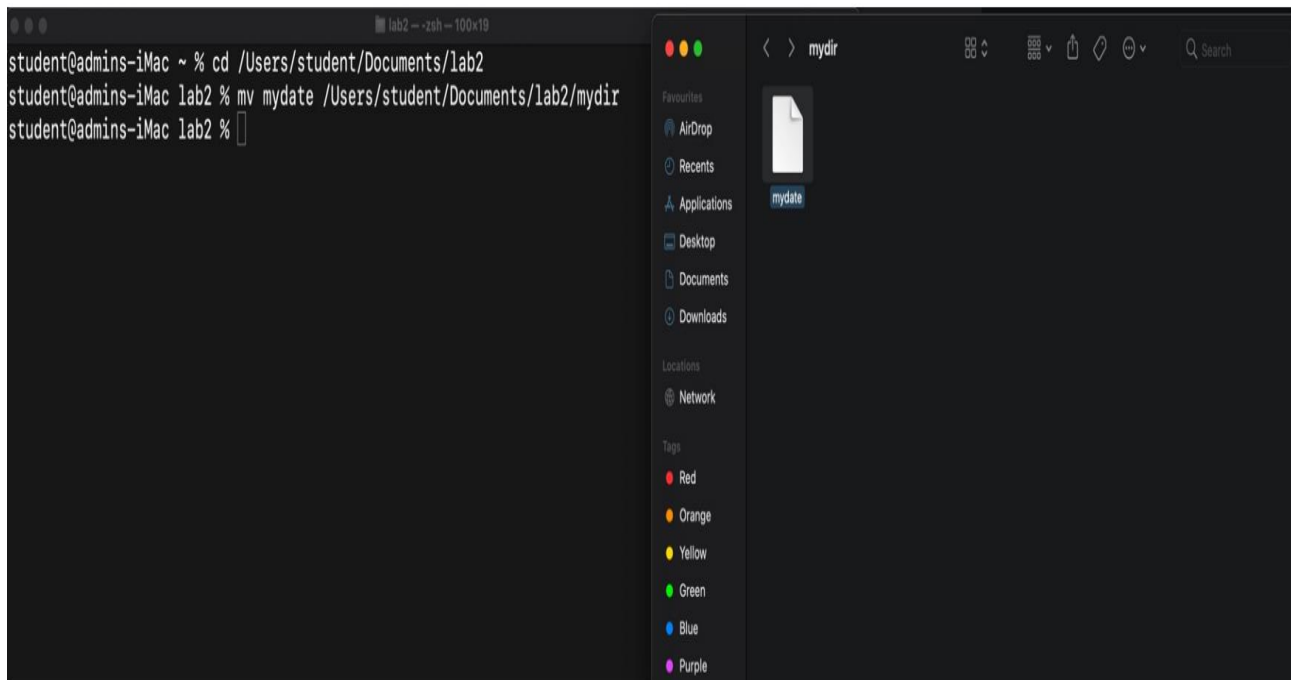
8. Go to the subdirectory mydir and copy the file mydate to a new file called ourdate
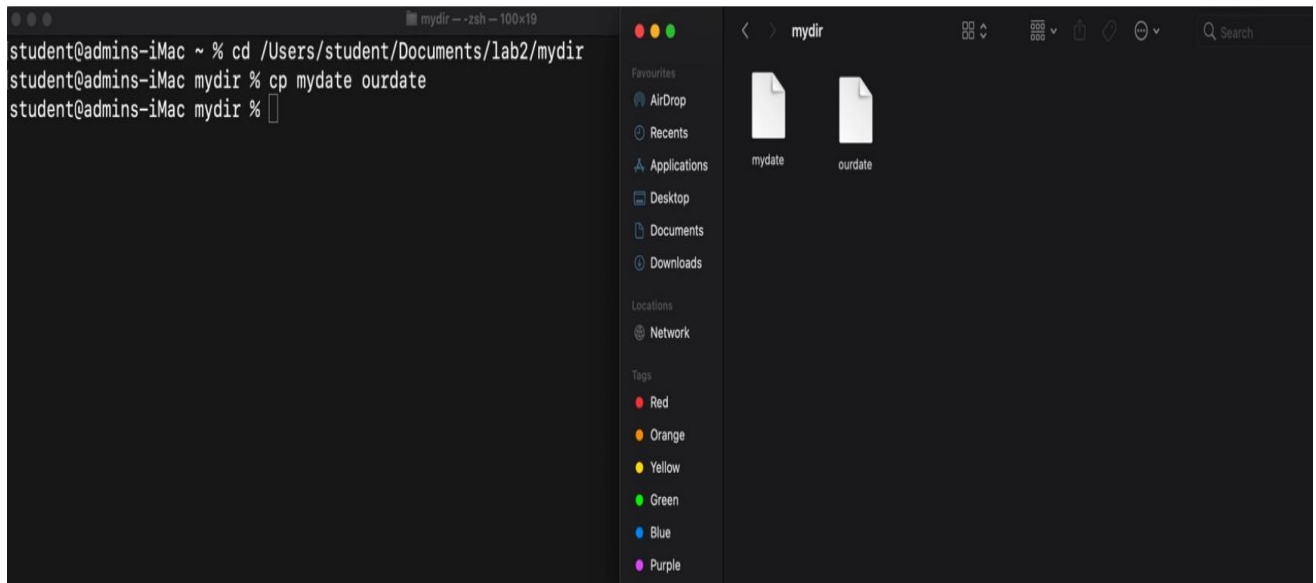
9. List the contents of mydir.


```
student@admins-iMac ~ % cd /Users/student/Documents/lab2/
student@admins-iMac lab2 % ls mydir
mydate  ourdate
student@admins-iMac lab2 %
```
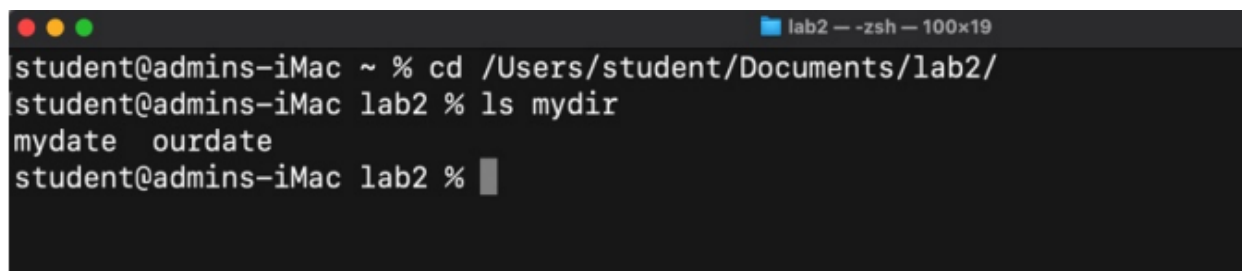
10. Do a long listing on the file ourdate and note the permissions.


```
student@admins-iMac lab2 % ls -l ourdate
ls: ourdate: No such file or directory
student@admins-iMac lab2 % cd /Users/student/Documents/lab2/mydir
student@admins-iMac mydir % ls -l ourdate
-rw-r--r--@ 1 student  staff  12418 Sep  8 12:58 ourdate
student@admins-iMac mydir %
```
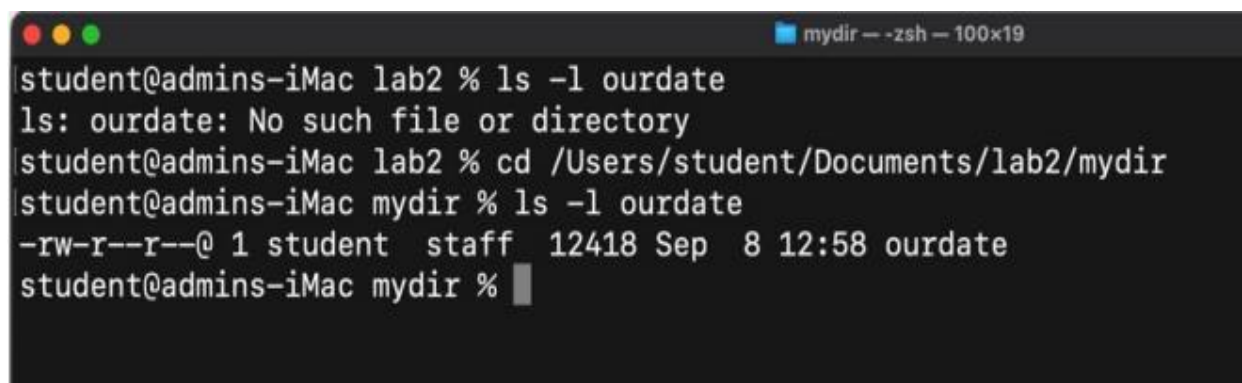
11. Display the name of the current directory starting from the root.

```
[student@admins-iMac-2 ~ % pwd
/Users/student
```

12. Move the files in the directory mydir back to your home directory.

```
● ● ●                    📁 lab2 — -zsh — 80×24
[student@admins-iMac ~ % cd /Users/student/Documents/lab2
[student@admins-iMac lab2 % mv mydir Users/student
mv: rename mydir to Users/student: No such file or directory
[student@admins-iMac lab2 % mv mydir /Users/student
student@admins-iMac lab2 %
```

13. Display the first 5 lines of mydate.

```
[student@admins-iMac-2 Desktop % head -5 mydate |tail +1
this
is
a
test
run
```

14. Display the last 8 lines of mydate.

```
[student@admins-iMac-2 Desktop % head -8 mydate |tail +1
this
is
a
test
run
and
we
are
```

15. Remove the directory mydir.
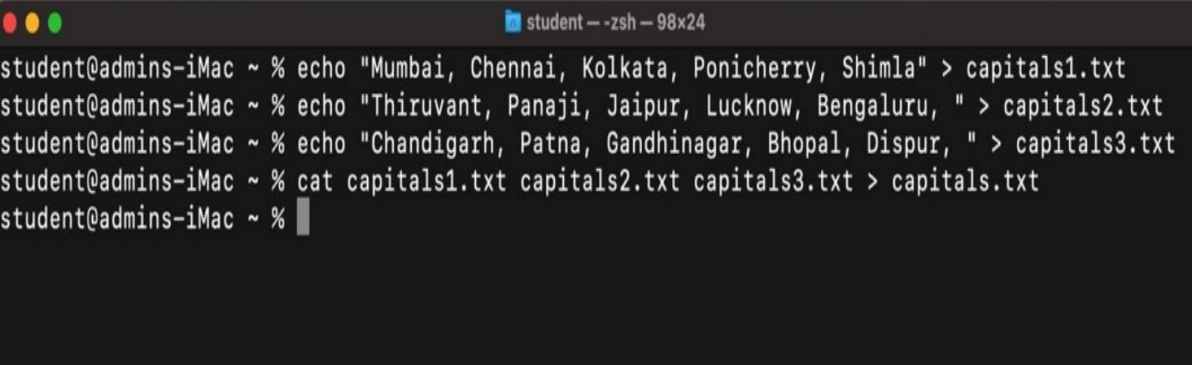
```
student@admins-iMac mydir % cd
student@admins-iMac ~ % rmdir mydir
rmdir: mydir: Directory not empty
student@admins-iMac ~ % rm mydir/* mydir/.*
zsh: sure you want to delete all 2 files in /Users/student/mydir [yn]? y
student@admins-iMac ~ % rmdir mydir
student@admins-iMac ~ % 
```

16. Redirect the output of the long listing of files to a file named list.
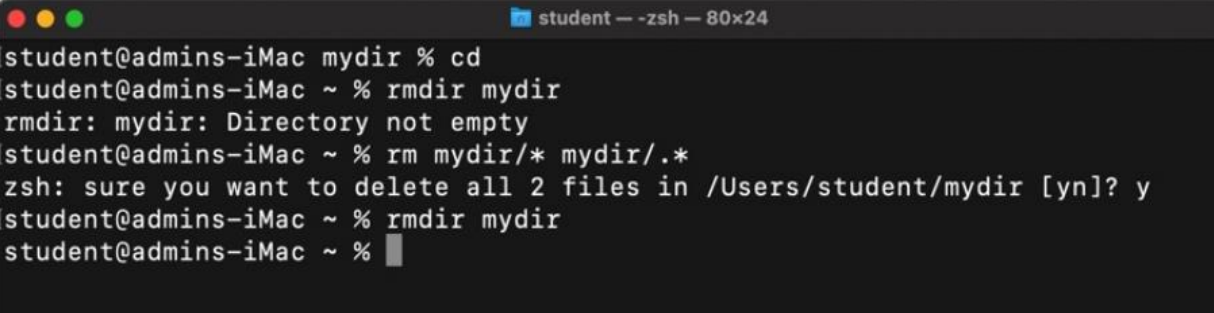
```
student@admins-iMac-2 Desktop % ls -l >list
```

17. Select any 5 capitals of states in India and enter them in a file named capitals1. Choose 5 more capitals and enter them in a file named capitals2. Choose 5 more capitals and enter them in a file named capitals3. Concatenate all 3 files and redirect the output to a file named capitals.

```
student@admins-iMac ~ % echo "Mumbai, Chennai, Kolkata, Ponicherry, Shimla" > capitals1.txt
student@admins-iMac ~ % echo "Thiruvant, Panaji, Jaipur, Lucknow, Bengaluru, " > capitals2.txt
student@admins-iMac ~ % echo "Chandigarh, Patna, Gandhinagar, Bhopal, Dispur, " > capitals3.txt
student@admins-iMac ~ % cat capitals1.txt capitals2.txt capitals3.txt > capitals.txt
student@admins-iMac ~ % 
```

18. Concatenate the file capitals2 at the end of file capitals.

19. Give read and write permissions to all users for the file capitals.


```
student@admins-iMac ~ % chmod 755 capitals.txt
student@admins-iMac ~ %
```

20. Give read permissions only to the owner of the file capitals. Open the file, make some changes and try to save it. What happens ?

We can edit file.

```
[student@admins-iMac-2 ~ % chmod u+r capitals
[student@admins-iMac-2 ~ % ls -l capitals
-rwxrwxrwx  1 student  staff  317 Sep 15 12:53 capitals
[student@admins-iMac-2 ~ % cat>capitals
sakshi
[student@admins-iMac-2 ~ % cat capitals
sakshi
student@admins-iMac-2 ~ %
```

21. Create an alias to concatenate the 3 files capitals1, capitals2, capitals3 and redirect the output to a file named capitals. Activate the alias and make it run.

```
student@admins-iMac ~ %  alias concat='cat capitals1.txt capitals2.txt capitals3.txt > capitals.txt'
student@admins-iMac ~ % concat
student@admins-iMac ~ % cat capitals.txt
Mumbai, Chennai, Kolkata, Ponicherry, Shimla
Thiruvant, Panaji, Jaipur, Lucknow, Bengaluru,
Chandigarh, Patna, Gandhinagar, Bhopal, Dispur,
student@admins-iMac ~ %
```

22. Find out the number of times the string "the" appears in the file mydate.

```
student@admins-iMac ~ % grep -o "the" mydate | wc -l
      154
student@admins-iMac ~ %
```

23. Find out the line numbers on which the string "date" exists in mydate.

```
● ● ●                        student — -zsh — 65×19

[student@admins-iMac ~ % grep -n "date" mydate                     ]
5:      date -- display or set date and time
16:     date and time.  Otherwise, depending on the options speci
fied, date will
17:     set the date and time or print it in a user-defined way.
19:     The date utility displays the date and time read from the
 kernel clock.
20:     When used to set the date and time, both the kernel clock
 and the hard-
21:     ware clock are updated.
23:     Only the superuser may set the date, and if the system se
curelevel (see
37:     -j      Do not try to set the date.  This allows you to u
se the -f flag
38:             in addition to the + option to convert one date f
ormat to
46:     -R      Use RFC 2822 date and time output format. This is
 equivalent to
```

24. Print all lines of mydate except those that have the letter "i" in them.

```
[student@admins-iMac-2 ~ % grep -v i mydate
the
the
dlkjflk
the
ljfkl
the
student@admins-iMac-2 ~ %
```

25. List the words of 4 letters from the file mydate.

```
[student@admins-iMac-2 ~ % grep -o -w "\w\{4\}" mydate
this
tjei
student@admins-iMac-2 ~ %
```

26. List 5 states in north east India in a file mystates. List their corresponding capitals in a file mycapitals. Use the paste command to join the 2 files.

```
student@admins-iMac-2 ~ % touch mystates
student@admins-iMac-2 ~ % cat>mystates
meghalaya
mizoram
manipur
assam
arunachal pradesh
student@admins-iMac-2 ~ % touch mycapitals
student@admins-iMac-2 ~ % cat>mycapitals
shillong
aizawl
imphal
dispur
itanagar
student@admins-iMac-2 ~ % paste mystates mycaitals
paste: mycaitals: No such file or directory
student@admins-iMac-2 ~ % paste mystates mycapitals
meghalaya       shillong
mizoram aizawl
manipur imphal
assam   dispur
arunachal pradesh       itanagar
student@admins-iMac-2 ~ %
```

27. Use the cut command to print the 1 st and 3 rd columns of the /etc/passwd file for all students in this class.

```
──(skyrim◎ ACER-ASPIRE-ONE)-[/mnt/c/users/user/documents/mydir]
──$ cut -f 1,3 /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
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
_apt:x:100:65534::/nonexistent:/usr/sbin/nologin
systemd-network:x:101:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:102:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
skyrim:x:1000:1000:,,,:/home/skyrim:/bin/bash
```

28. Count the number of people logged in and also trap the users in a file using the tee command.

```
[student@admins-iMac-2 ~ % users | wc -w
       1
[student@admins-iMac-2 ~ % w | tee users
13:53  up  1:34, 2 users, load averages: 1.06 1.29 1.38
USER     TTY      FROM              LOGIN@  IDLE WHAT
student  console  -                 12:20   1:33 -
student  s000     -                 12:38      - tee users        ??   /usr/bin/tee
student@admins-iMac-2 ~ %
```

29. Convert the contents of mystates into uppercase.

```
[student@admins-iMac-2 ~ % tr a-z A-Z < ./mystates
MEGHALAYA
MIZORAM
MANIPUR
ASSAM
ARUNACHAL PRADESH
student@admins-iMac-2 ~ %
```

30. Create any two files & display the common values between them.

```
[student@admins-iMac-2 ~ % cat>file1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
[student@admins-iMac-2 ~ % cat>file2
1
3
5
7
9
11
13
15
[student@admins-iMac-2 ~ % comm -1 <(sort file1) <(sort file2)
        1
        11
        13
        15
        3
        5
        7
        9
```