

Linux

1. Change your password to a password you would like to use for the remainder of the semester. (Command is passwd)

```
Old Password:
New Password:
Retype New Password:

##### WARNING #####
# This tool does not update the login keychain password.      #
# To update it, run `security set-keychain-password` as the user in question, #
# or as root providing a path to such user's login keychain.  #
#####
```

2. Display the system's date.

```
student@admins-iMac-2 ~ % date
Tue Jan 10 12:36:22 IST 2023
```

3. Count the number of lines in the /etc/passwd file.

```
student@admins-iMac-2 ~ % wc -l /etc/passwd
120 /etc/passwd
```

4. Find out who else is on the system.

```
student@admins-iMac-2 ~ % who
student    console    Jan 10 12:07
student    ttys000    Jan 10 12:19
```

5. Direct the output of the man pages for the date command to a file named mydate.

Code: `man date > mydate`

6. Create a subdirectory called mydir.

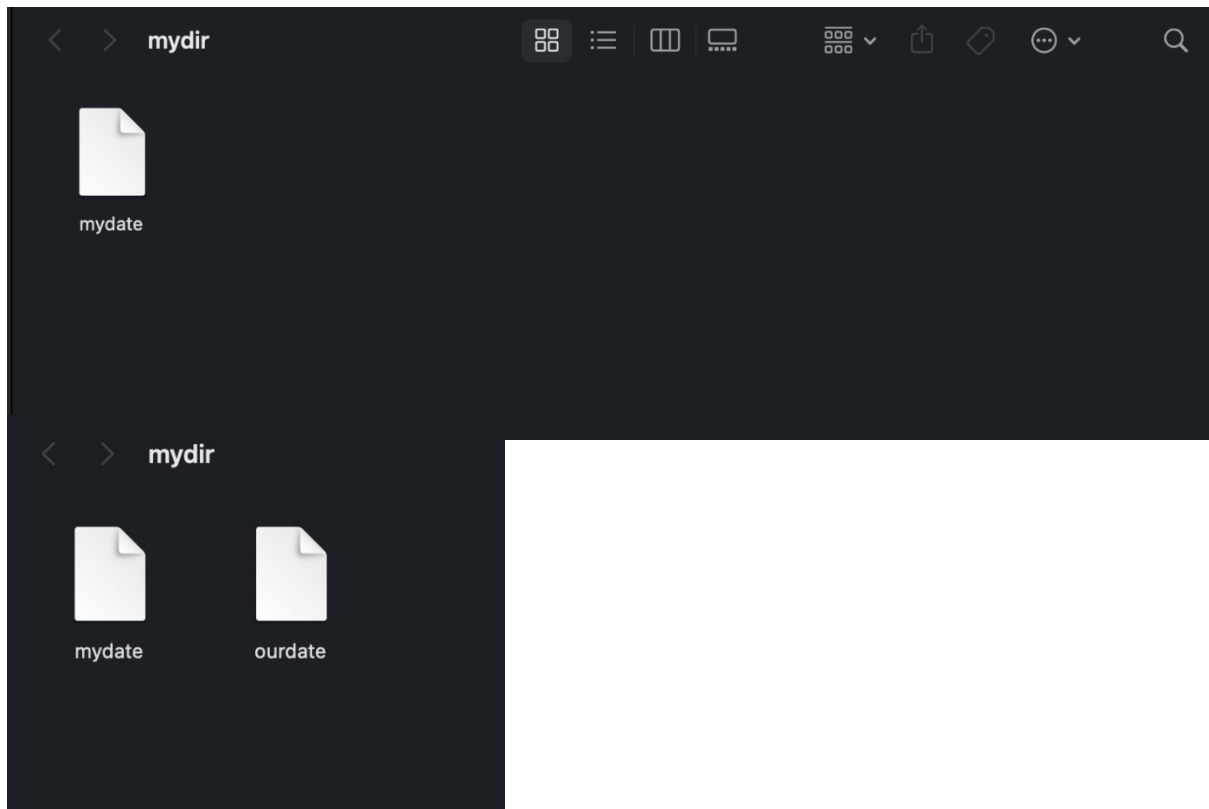
```
student@admins-iMac-2 desktop % mkdir mydir
student@admins-iMac-2 desktop %
```

7. Move the file mydate into the new subdirectory.

```
student@admins-iMac-2 desktop % mv mydate mydir
```

8. Go to the subdirectory mydir and copy the file mydate to a new file called ourdate.

```
student@admins-iMac-2 desktop % cd mydir
student@admins-iMac-2 mydir % cp mydate ourdate
```



9. List the contents of mydir.

```
student@admins-iMac-2 desktop % ls mydir
mydate  ourdate
```

10. Do a long listing on the file ourdate and note the permissions.

```
student@admins-iMac-2 mydir % ls -l ourdate
-rw-r--r-- 1 student staff 0 Nov 11 11:11 ourdate
student@admins-iMac-2 mydir % pwd
/Users/student/desktop/mydir
```

11. Display the name of the current directory starting from the root.

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

```
student@admins-iMac-2 mydir % mv mydate /Users/student
student@admins-iMac-2 mydir % mv ourdate /Users/student
```

13. Display the first 5 lines of mydate.

```
student@admins-iMac-2 ~ % head -5 ourdate
DATE(1)                                BSD General Commands Manual          DATE(1)
NAME
date -- display or set date and time
```

< > mydir

```
student@admins-iMac-2 ~ % tail -8 ourdate
The date utility is expected to be compatible with IEEE Std 1003.2
('`POSIX.2``'). The -d, -f, -j, -n, -r, -t, and -v options are all exten-
sions to the standard.

HISTORY
A date command appeared in Version 1 AT&T UNIX.

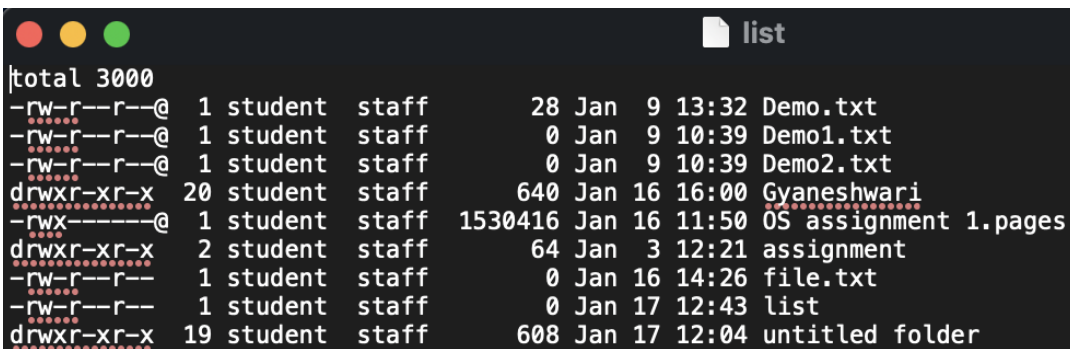
BSD                                May 7, 2015                                BSD
```

14. Display the last 8 lines of mydate.

15. Remove the directory mydir.

16. Redirect the output of the long listing of files to a file named list.

```
student@admins-iMac-2 desktop % ls -l>list
```



total 3000

Permissions	Count	User	Group	Size	Month	Day	Time	File Name
-rw-r--r--@	1	student	staff	28	Jan	9	13:32	Demo.txt
-rw-r--r--@	1	student	staff	0	Jan	9	10:39	Demo1.txt
-rw-r--r--@	1	student	staff	0	Jan	9	10:39	Demo2.txt
drwxr-xr-x	20	student	staff	640	Jan	16	16:00	Gyaneshwari
-rwx-----@	1	student	staff	1530416	Jan	16	11:50	OS assignment 1.pages
drwxr-xr-x	2	student	staff	64	Jan	3	12:21	assignment
-rw-r--r--	1	student	staff	0	Jan	16	14:26	file.txt
-rw-r--r--	1	student	staff	0	Jan	17	12:43	list
drwxr-xr-x	19	student	staff	608	Jan	17	12:04	untitled folder

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-2 desktop % echo "Mumbai, Chennai, Kolkata, Pondicherry, Shimla" > capitals1.txt
student@admins-iMac-2 desktop % echo "Panji, Jaipur,Lucknow, Bangalore, Dispur" >capitals2.txt
student@admins-iMac-2 desktop % echo "Chandigarh, Patna, Gandhinagar, Bhopal, Gangtok" > capitals3.txt
student@admins-iMac-2 desktop % head -5 capitals1
head: capitals1: No such file or directory
student@admins-iMac-2 desktop % head -5 capitals1.txt
Mumbai, Chennai, Kolkata, Pondicherry, Shimla
student@admins-iMac-2 desktop % head -5 capitals2.txt
Panji, Jaipur,Lucknow, Bangalore, Dispur
student@admins-iMac-2 desktop % head -5 capitals3.txt
Chandigarh, Patna, Gandhinagar, Bhopal, Gangtok
student@admins-iMac-2 desktop % cat capitals1.txt capitals2.txt capitals3.txt > capitals.txt
student@admins-iMac-2 desktop % head -5 capitals.txt
Mumbai, Chennai, Kolkata, Pondicherry, Shimla
Panji, Jaipur,Lucknow, Bangalore, Dispur
Chandigarh, Patna, Gandhinagar, Bhopal, Gangtok
```

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

```
student@admins-iMac-2 desktop % cat capitals2.txt >> capitals.txt
student@admins-iMac-2 desktop % head -5 capitals.txt
Mumbai, Chennai, Kolkata, Pondicherry, Shimla
Panji, Jaipur,Lucknow, Bangalore, Dispur
Chandigarh, Patna, Gandhinagar, Bhopal, Gangtok
Panji, Jaipur,Lucknow, Bangalore, Dispur
```

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

```
student@admins-iMac-2 desktop % chmod 755 capitals.txt
student@admins-iMac-2 desktop % ls -l capitals.txt
-rwxr-xr-x  1 student  staff   174 Jan 17 13:01 capitals.txt
```

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 are not able to change anything in the file as we give the user only read permission.

```
-r-----  1 student  staff   174 Jan 17 13:01 capitals.txt
student@admins-iMac-2 desktop % "Kohima" >> capitals.txt
zsh: permission denied: capitals.txt
```

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-2 desktop % alias concat = 'cat capitals1.txt capitals2.txt capitals3.txt > capitals.txt'
```

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

```
student@admins-iMac-2 ~ % grep -o "the" mydate | wc -l
154
```

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

```
student@admins-iMac-2 ~ % grep -n "date" mydate
5:  date -- display or set date and time
16:  date and time.  Otherwise, depending on the options specified, 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 securelevel (see
37:  -j      Do not try to set the date.  This allows you to use the -f flag
38:         in addition to the + option to convert one date format to
46:  -R      Use RFC 2822 date and time output format. This is equivalent to
51:         Print the date and time represented by seconds, where seconds is
57:         Print the date and time of the last modification of filename.
64:  -u      Display or set the date in UTC (Coordinated Universal) time.
66:  -v      Adjust (i.e., take the current date and display the result of the
67:         adjustment; not actually set the date) the second, minute, hour,
69:         preceded with a plus or minus sign, the date is adjusted forwards
71:         relevant part of the date is set.  The date can be adjusted as
82:         used to specify which part of the date is to be adjusted.
86:         date will be put forwards (or backwards) to the next (previous)
87:         date that matches the given week day or month.  This will not
88:         adjust the date, if the given week day or month is the same as
```

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

```
student@admins-iMac-2 ~ % grep -v i mydate

DATE(1)                                BSD General Commands Manual                                DATE(1)

NAME

SYNOPSIS
    [+output_fmt]
    date [-jnu] [[[mm]dd]HH]MM[[cc]yy][.ss]

DESCRIPTION

    ware clock are updated.

    than 1 second.

    another.

    the ``C'' locale .
```

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

```
student@admins-iMac-2 ~ % grep -o -w "\w\{4\}" mydate
DATE
DATE
date
time
When
date
time
will
date
time
user
date
time
read
from
When
used
date
time
both
hard
ware
```


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

```
student@admins-iMac-2 ~ % paste mystates mycapitals
meghalaya      shillong
mizoram        aizawl
manipur        imphal
assam          dispur
arunachal      pradesh      itanagar
```

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

```
student@admins-iMac-2 ~ % cut -f 1,3 /etc/passwd
##
# User Database
#
# Note that this file is consulted directly only when the system is running
# in single-user mode.  At other times this information is provided by
# Open Directory.
#
# See the opendirectoryd(8) man page for additional information about
# Open Directory.
##
nobody:*:-2:-2:Unprivileged User:/var/empty:/usr/bin/false
root:*:0:0:System Administrator:/var/root:/bin/sh
daemon:*:1:1:System Services:/var/root:/usr/bin/false
_uucp:*:4:4:Unix to Unix Copy Protocol:/var/spool/uucp:/usr/sbin/uucico
_taskgated:*:13:13:Task Gate Daemon:/var/empty:/usr/bin/false
_networkd:*:24:24:Network Services:/var/networkd:/usr/bin/false
_installassistant:*:25:25:Install Assistant:/var/empty:/usr/bin/false
_lp:*:26:26:Printing Services:/var/spool/cups:/usr/bin/false
_postfix:*:27:27:Postfix Mail Server:/var/spool/postfix:/usr/bin/false
_scsd:*:31:31:Service Configuration Service:/var/empty:/usr/bin/false
_ces:*:32:32:Certificate Enrollment Service:/var/empty:/usr/bin/false
_appstore:*:33:33:Mac App Store Service:/var/db/appstore:/usr/bin/false
_mcxalr:*:54:54:MCX AppLaunch:/var/empty:/usr/bin/false
```

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
14:05 up 2:07, 2 users, load averages: 1.21 1.30 1.35
USER      TTY      FROM          LOGIN@      IDLE WHAT
student   console  -             11:58       2:06 -
student   s000    -             12:02              - tee users      ?? /usr/bin/tee
```

29. Convert the contents of my states in Uppercase.

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

30. Create any 2 files and display the common values between them.

```
student@admins-iMac-2 ~ % echo "1\n2\n3\n" > file1
student@admins-iMac-2 ~ % cat file1
1
2
3

student@admins-iMac-2 ~ % echo "4\n5\n6\n" > file2
student@admins-iMac-2 ~ % cat file2
4
5
6

student@admins-iMac-2 ~ % echo "4\n5\n6\n2\n1\n" > file2
student@admins-iMac-2 ~ % cat file2
4
5
6
2
1

student@admins-iMac-2 ~ % comm -1 <(sort file1) < (sort file2)
zsh: unknown sort specifier
student@admins-iMac-2 ~ % comm -1 <(sort file1) < (sort file2)
zsh: unknown sort specifier
student@admins-iMac-2 ~ % comm -1 <(sort file1) <(sort file2)

      1
      2

4
5
6
```