BASIC LINUX COMMANDS ON DIRECTORIES

pwd

- *pwd* stands for "*print working directory*". This command gives the *directory path* where the *current user* is *located* at.

```
oindrila@DESKTOP-TKR9FDM:~$ pwd
/home/oindrila
```

ls

- *ls* gives the *listing of all* the *contents* (*folders* and *files*, *not subfolders*) of the *current directory*.

```
oindrila@DESKTOP-TKR9FDM:/$ ls
bin  boot  dev  etc  home  init  lib  lib64  media  mnt  opt  proc  root  run  sbin  snap  srv  sys  tmp  usr  var
```

cd

- The "*cd*" command is used for *forward navigation between directories* and *folders*.

```
oindrila@DESKTOP-TKR9FDM:/$ cd home
oindrila@DESKTOP-TKR9FDM:/home$ cd oindrila
```

- The "*cd ..*" command is used to *go back to* the *previous directory from* the *current directory*.

```
oindrila@DESKTOP-TKR9FDM:/$ cd ..
```

- The "*cd /*" command is used to *go to* the *root directory from any directory*.

```
oindrila@DESKTOP-TKR9FDM:/$ cd /
```

- The "*cd ~*" command is used to *go back to* the *home directory from any directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir1/nestTestDir1$ cd ~
oindrila@DESKTOP-TKR9FDM:~$ pwd
/home/oindrila
```

mkdir

- The "*mkdir directoryName*" command is used to *create a new directory within* the *current directory*.

```
oindrila@DESKTOP-TKR9FDM:~$ mkdir testDir1
oindrila@DESKTOP-TKR9FDM:~$ ls
testDir1
```

rmdir

- The "*rmdir directoryName*" command is used to ***delete***, or, ***remove an empty directory within*** the ***current directory***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir1$ rmdir nestTestDir1
```

- If the ***directory*** to delete ***contains*** any ***content inside*** it, the ***directory cannot be deleted using*** the "*rmdir directoryName*" command.

```
oindrila@DESKTOP-TKR9FDM:~$ rmdir testDir1
rmdir: failed to remove 'testDir1': Directory not empty
```

- The "*rm -r directoryName*" command is used to ***delete***, or, ***remove a non-empty directory within*** the ***current directory***.

```
oindrila@DESKTOP-TKR9FDM:~$ rm -r testDir1
```

man

- The "*man commandName*" command is used to ***fetch information*** about any desired *command*.

```
oindrila@DESKTOP-TKR9FDM:~$ man cp
```

- To get out of the manual mode, "q" is pressed

oindrila@DESKTOP-TKR9FDM: ~

```
CP(1)                                                   User Commands

NAME
       cp - copy files and directories

SYNOPSIS
       cp [OPTION]... [-T] SOURCE DEST
       cp [OPTION]... SOURCE... DIRECTORY
       cp [OPTION]... -t DIRECTORY SOURCE...

DESCRIPTION
       Copy SOURCE to DEST, or multiple SOURCE(s) to DIRECTORY.

       Mandatory arguments to long options are mandatory for short options too.

       -a, --archive
              same as -dR --preserve=all

       --attributes-only
              don't copy the file data, just the attributes

       --backup[=CONTROL]
              make a backup of each existing destination file

       -b     like --backup but does not accept an argument

       --copy-contents
              copy contents of special files when recursive
 Manual page cp(1) line 1 (press h for help or q to quit)
```

BASIC LINUX COMMANDS ON FILES

cat

- The "*cat > fileName*" command is used to *create a file with content* in the *current directory*. Upon pressing "*Enter*", the *user will be asked to type* the *contents into* the *created file*. To *stop typing into* the *created file* the *user* needs to *type* "*Ctrl + C*". The "*Redirection Symbol*" (*>*) *tells* the "*cat*" command *to copy any character* the *user types at* the *keyboard to* the mentioned *file*. The *extension of a file doesn't matter in Linux*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat > firstTextFile
Hi
My name is Oindrila Chakraborty
I am trying to learn the cat command
This is the first file I created using the cat command
I am going to stop writing in this file now.oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*cat fileName*" command is used to *display* the *contents of a file* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat secondTextFile
Hi Again
I am Oindrila again
This is the second file I am creating using cat command
```

- The "*cat fileName1 fileName2 fileName3 ....*" command is used to *display* the *contents of all* the *files at once one by one* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat firstTextFile secondTextFile thirdTextFile
Hi
My name is Oindrila Chakraborty
I am trying to learn the cat command
This is the first file I created using the cat command
I am going to stop writing in this file now.Hi Again
I am Oindrila again
This is the second file I am creating using cat command
Hi All
This is the third time I am creating a file using cat command
Now I am sure I am going to learn the cat command very clearly
I hope it will help me in the future interviews
I am going to stop typing in this file
Bye everyoneoindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*cat -n fileName*" command is used to *display* the *line numbers of a file* mentioned in the command.

```
Bye everyoneoindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -n firstTextFile
     1  Hi
     2  My name is Oindrila Chakraborty
     3  I am trying to learn the cat command
     4  This is the first file I created using the cat command
     5  I am going to stop writing in this file now.oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*cat -n fileName1 fileName2 fileName3 ....*" command is used to *display* the *line numbers of all* the *files* mentioned in the command.

```
     5  I am going to stop writing in this file now.oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -n firstTextFi
le secondTextFile thirdTextFile
     1  Hi
     2  My name is Oindrila Chakraborty
     3  I am trying to learn the cat command
     4  This is the first file I created using the cat command
     5  I am going to stop writing in this file now.Hi Again
     6  I am Oindrila again
     7  This is the second file I am creating using cat command
     8  Hi All
     9  This is the third time I am creating a file using cat command
    10  Now I am sure I am going to learn the cat command very clearly
    11  I hope it will help me in the future interviews
    12  I am going to stop typing in this file
    13  Bye everyoneoindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*cat -e fileName*" command is used to ***display control***, and, ***non-printing characters followed by*** a "***$***" symbol at the ***end of each lines of a file*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -e thirdTextFile.txt
Welcome$
My Line1$
My Line2$
$
My Line4$
My Line5$
$
My Line6$
My Line7$
$
My Line8$
My Line9$
My Line10$
```

- The "***cat -e fileName1 fileName2 fileName2 ....***" command is used to ***display control***, and, ***non-printing characters followed by*** a "***$***" symbol at the ***end of each lines***, in ***all*** the ***files*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -e firstTextFile.txt secondTextFile.txt thirdTextFile.txt
Hi$
This is Line1$
This is Line2$
This is Line3$
$
This is Line5$
This is Line6$
This is Line7$
This    is    Line8$
Hello$
Line1$
Line2$
Line3$
Line4$
$
Line6$
Line7$
Line8$
Line9$
Welcome$
My Line1$
My Line2$
$
My Line4$
My Line5$
$
My Line6$
My Line7$
$
```

```
My Line8$
My Line9$
My Line10$
```

- The "*cat -v fileName*" command is used to *display control*, and, *non-printing characters* present in the contents *of a file* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -v firstTextFile.txt
```

- The "*cat -v fileName1 fileName2 fileName2 ....*" command is used to *display control*, and, *non-printing characters* present in the contents of *all* the *files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -v firstTextFile.txt secondTextFile.txt thirdTextFile.txt
```

- The "*cat -t fileName*" command is used to *display each TAB* as "**^|**", and, *each form feed* as "***^L***" present in the contents *of a file* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -t firstTextFile.txt
```

- The "*cat -t fileName1 fileName2 fileName2 ....*" command is used to *display each TAB* as "**^|**", and, *each form feed* as "***^L***" present in the contents of *all* the *files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -t firstTextFile.txt secondTextFile.txt thirdTextFile.txt
```

- The '*cat >> fileName*' command is *used to append lines of text at* the *end of* the *file*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat >> doc1
This is the second line
^C
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat doc1
This is the Doc1 file
This is the second line
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

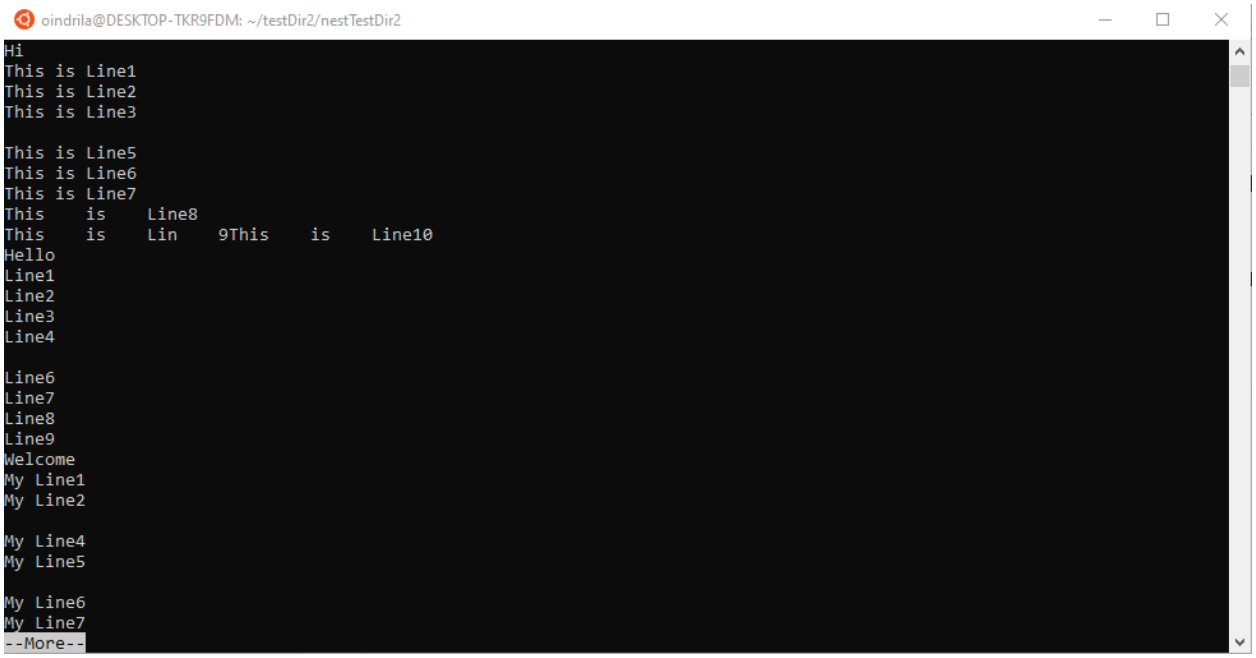
- The "*cat fileName1 fileName2 fileName2 ... > fineNameN.*" command is used to *create a new file*, and, the *merge* the *contents of each files* will be *redirected to* the *newly created file one by one*.

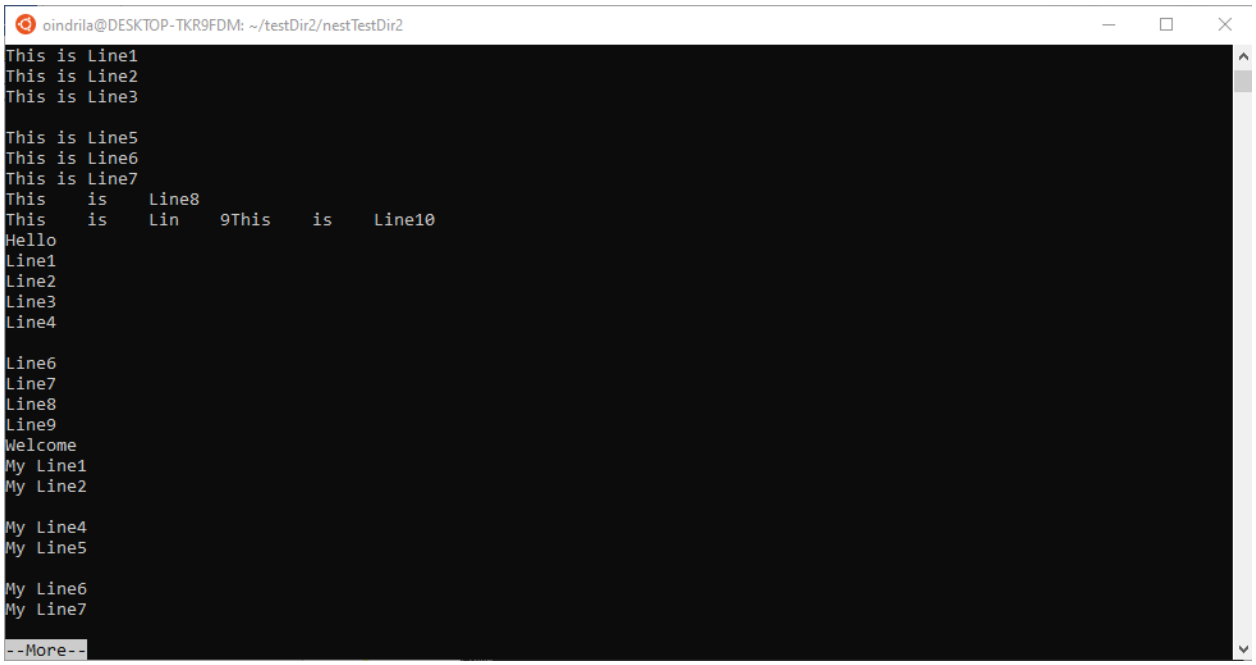
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat firstTextFile.txt secondTextFile.txt thirdTextFile.txt > outputTex
tFile.txt
```

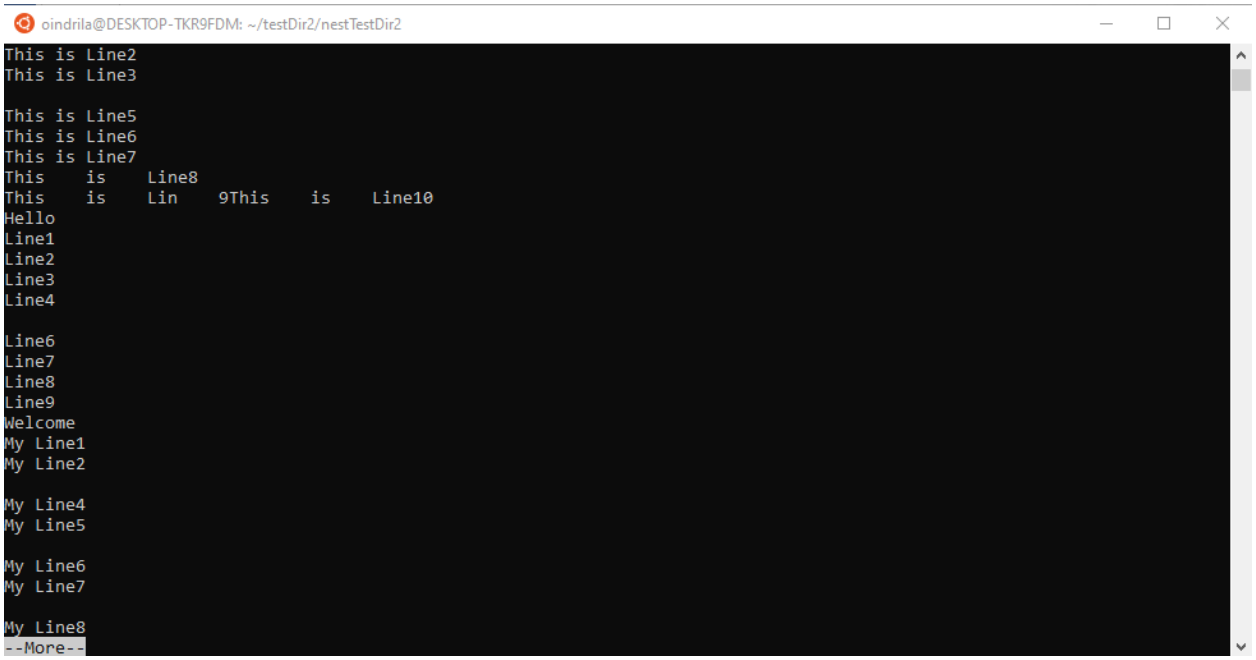
- The "*cat*" command is *good for small files*. But, *if* the *file is large*, the *contents will zoom past* and *only* the *last page of* the *content will be displayed*. The "*cat filename | more*" command *displays* the *contents of* the *file as one page at a time for larger files*.
  If the *contents of* the *file fits in a single page*, the *output will be* the *same as* the "*cat*" command.

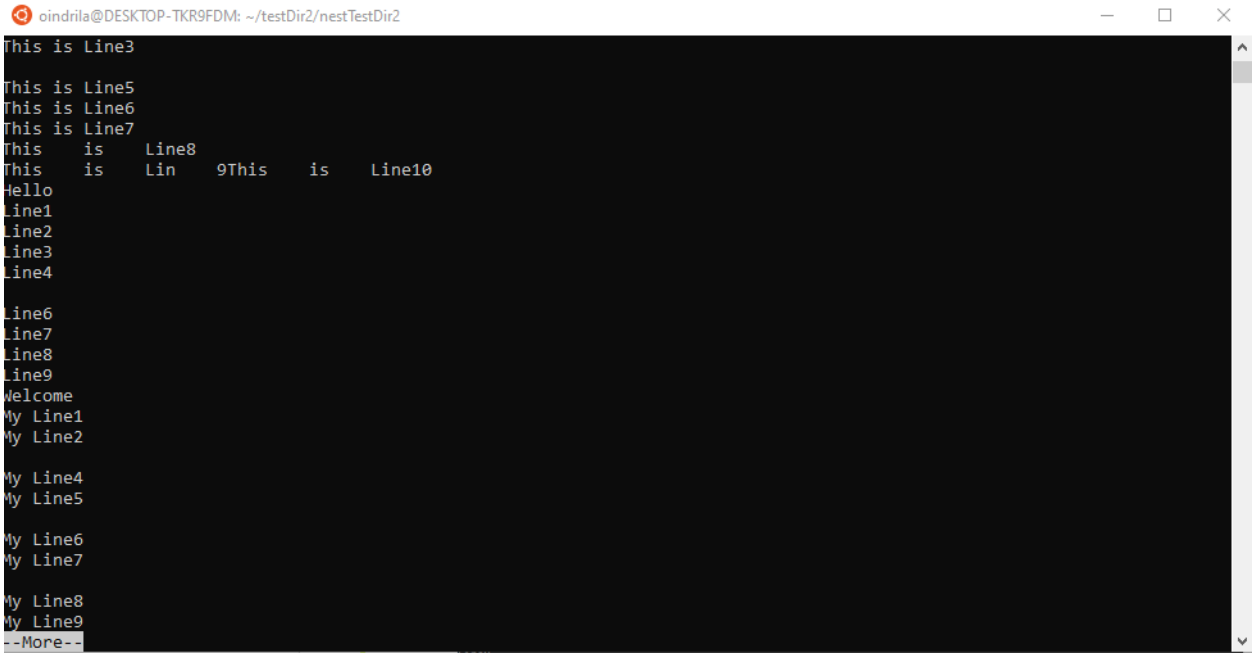
If the *contents of* the *file does not fit in a single page*, the *cursor will stay at* the *end of each page*. *Then* the *user can scroll through* the *contents of* the *file using* the "*Enter*" *key*, *one line at a time*.

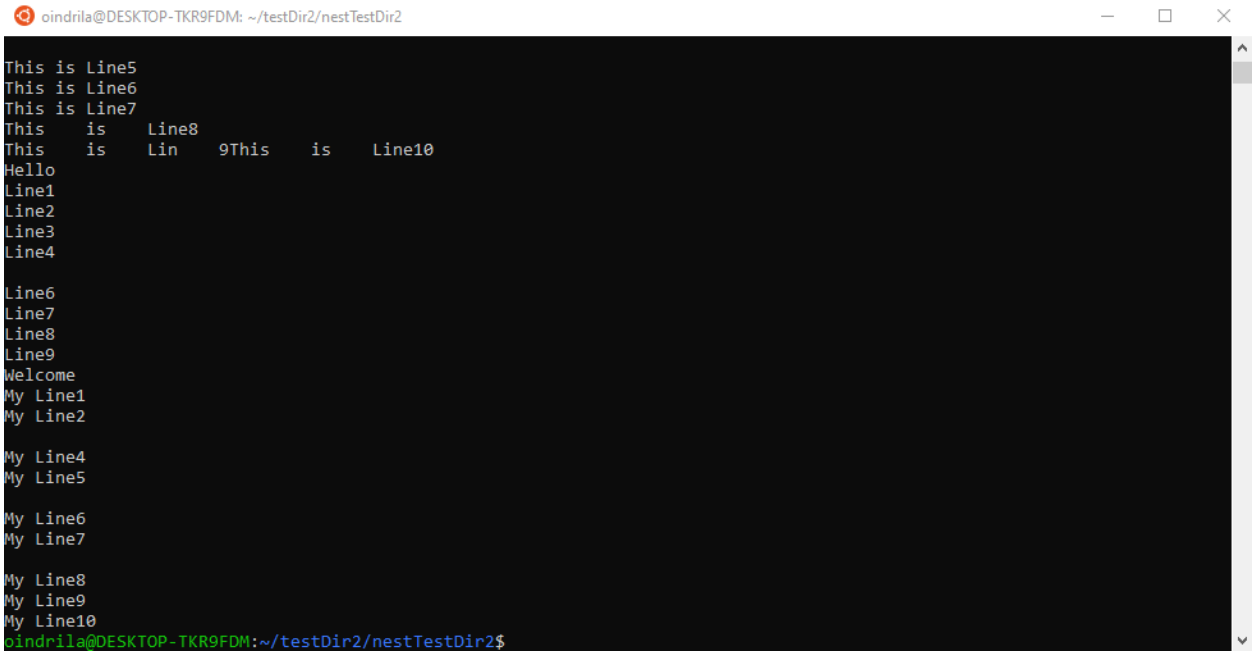
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat outputTextFile.txt | more
```





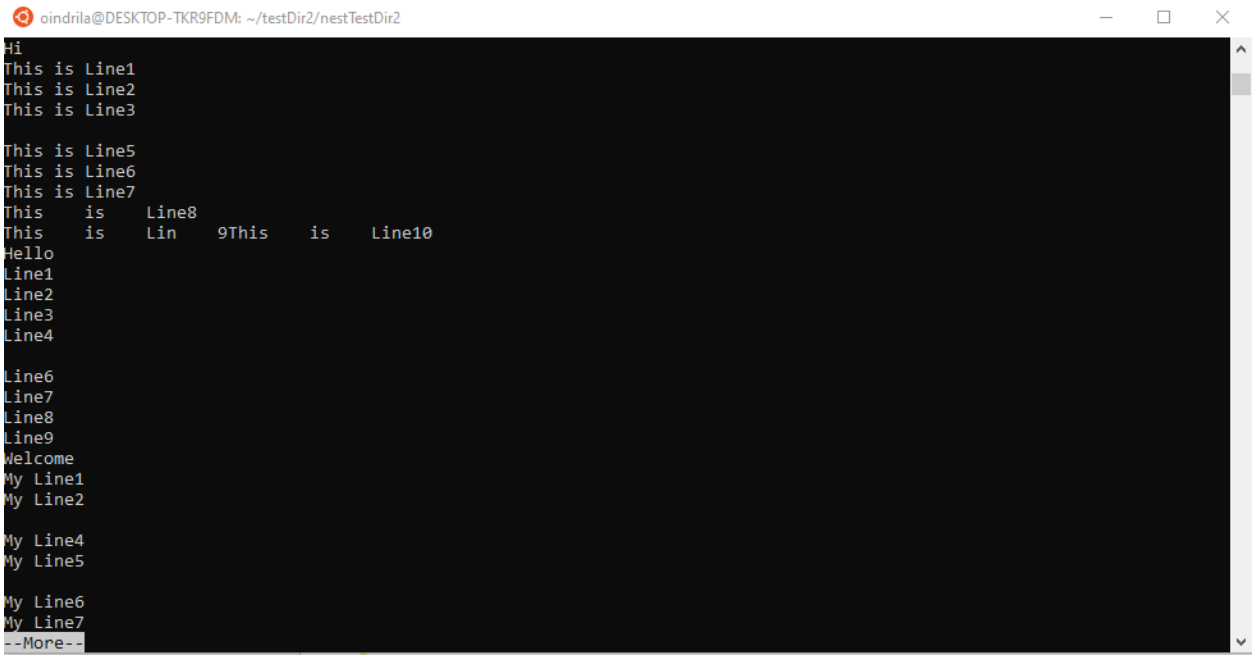

oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
My Line8
--More--

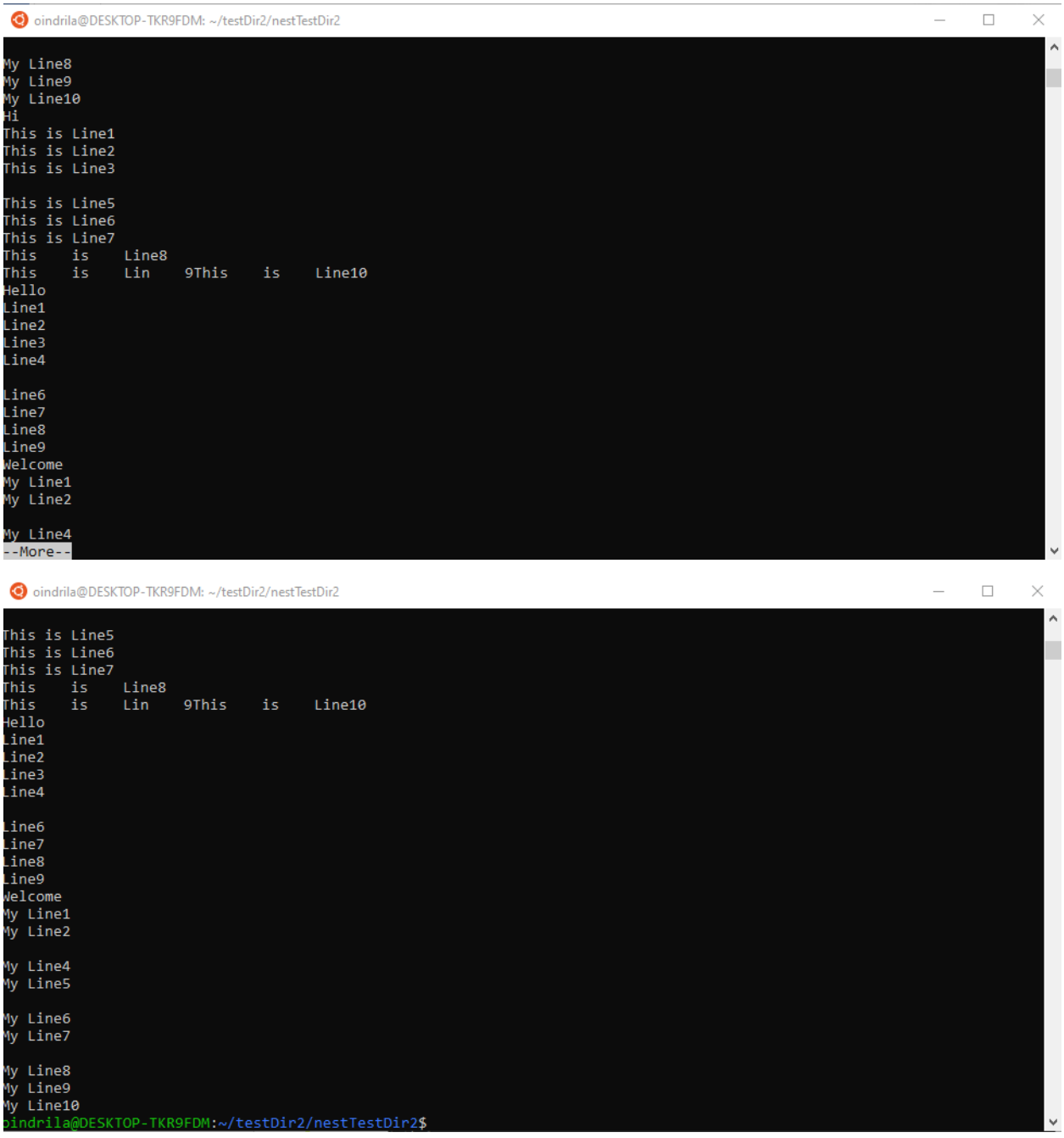

oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
My Line8
My Line9
--More--



The *user can* also *scroll through* the *file in a page by page manner using* the "*Space*" *bar*. *To return to* the *Command Prompt*, "*q*" *key* is *used*.

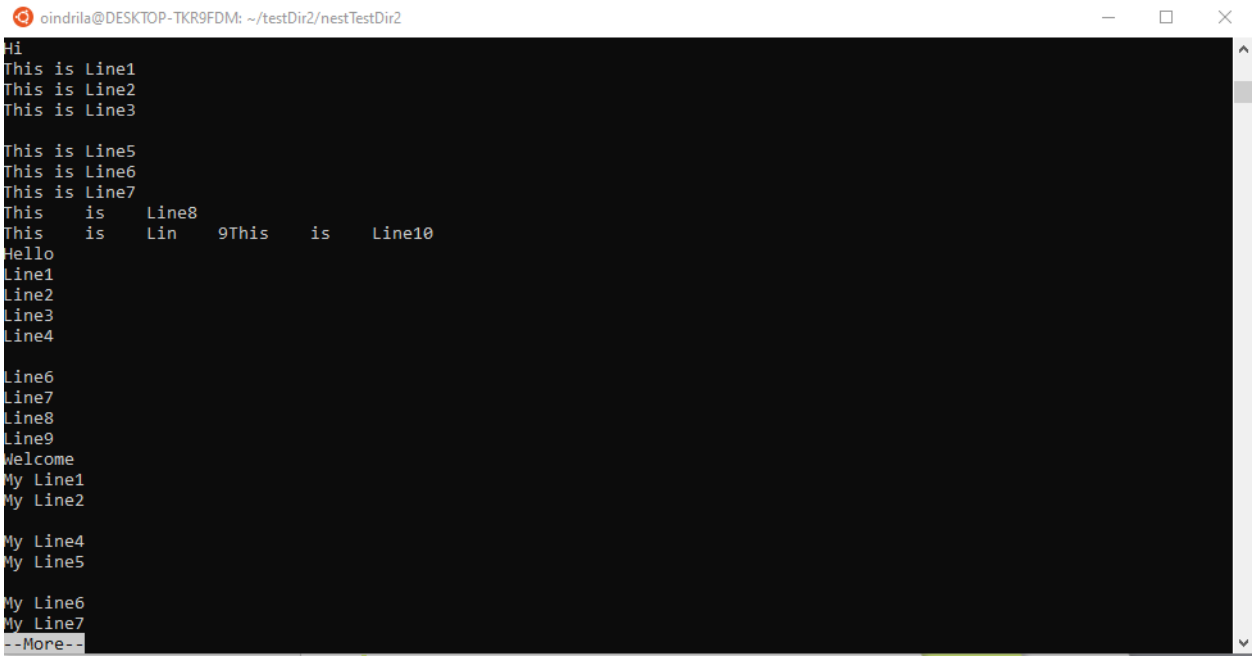
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat newOutputTextFile.txt | more
```

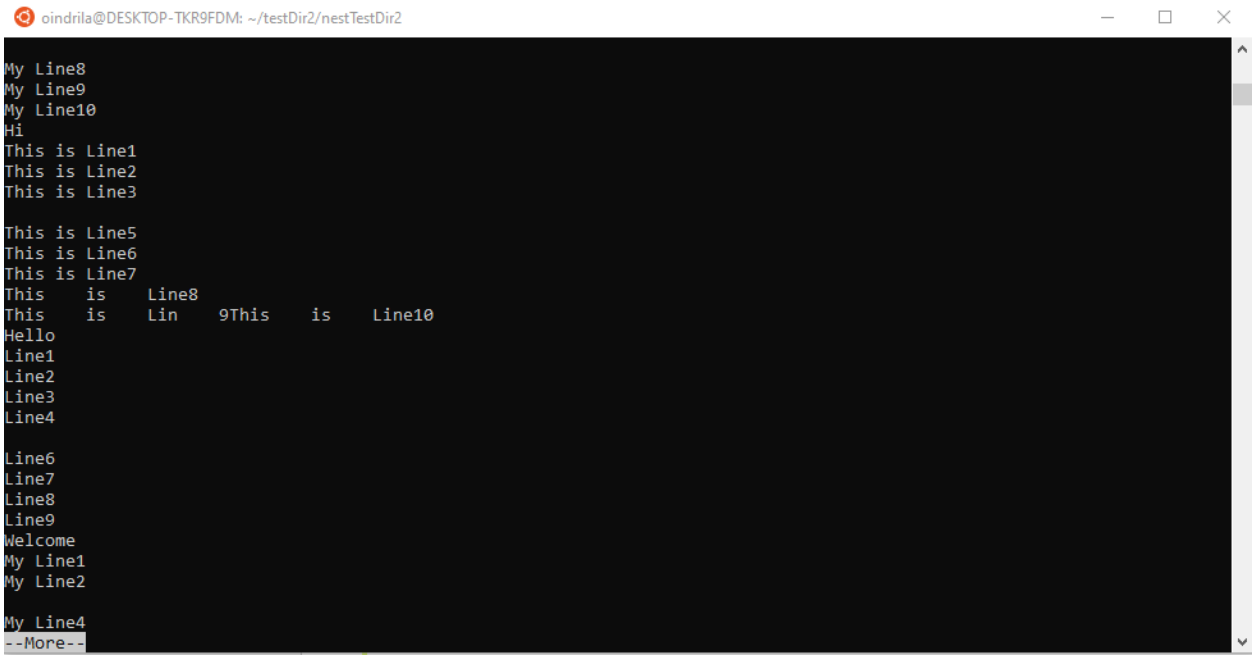


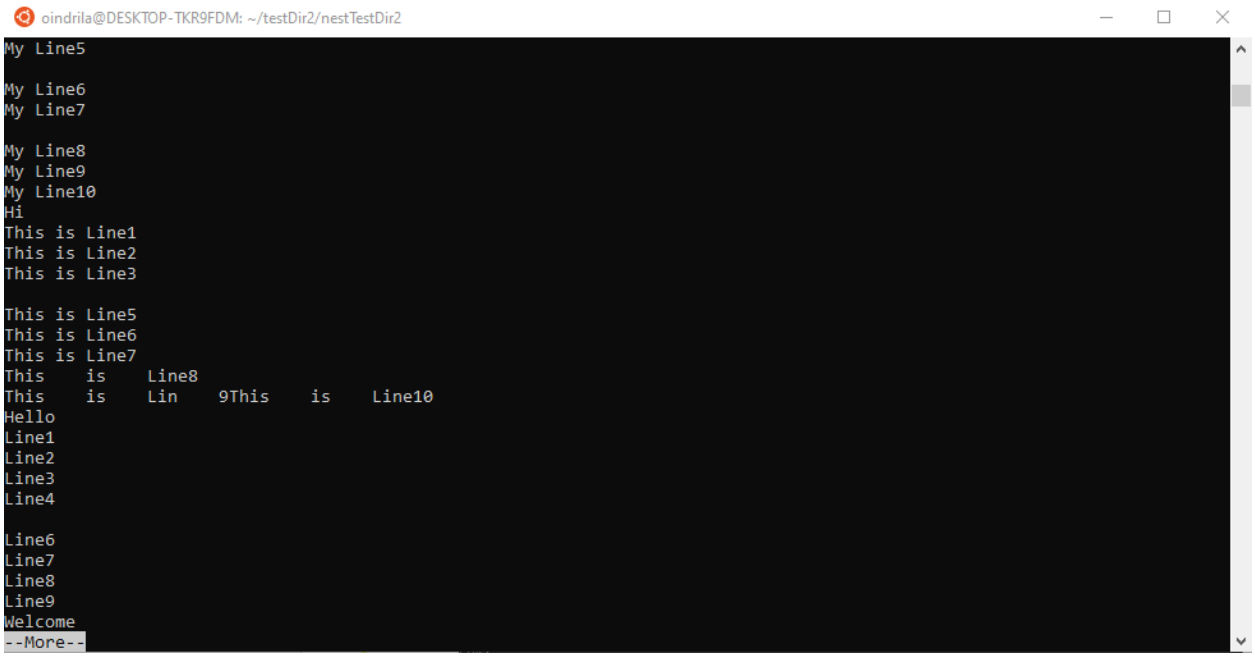


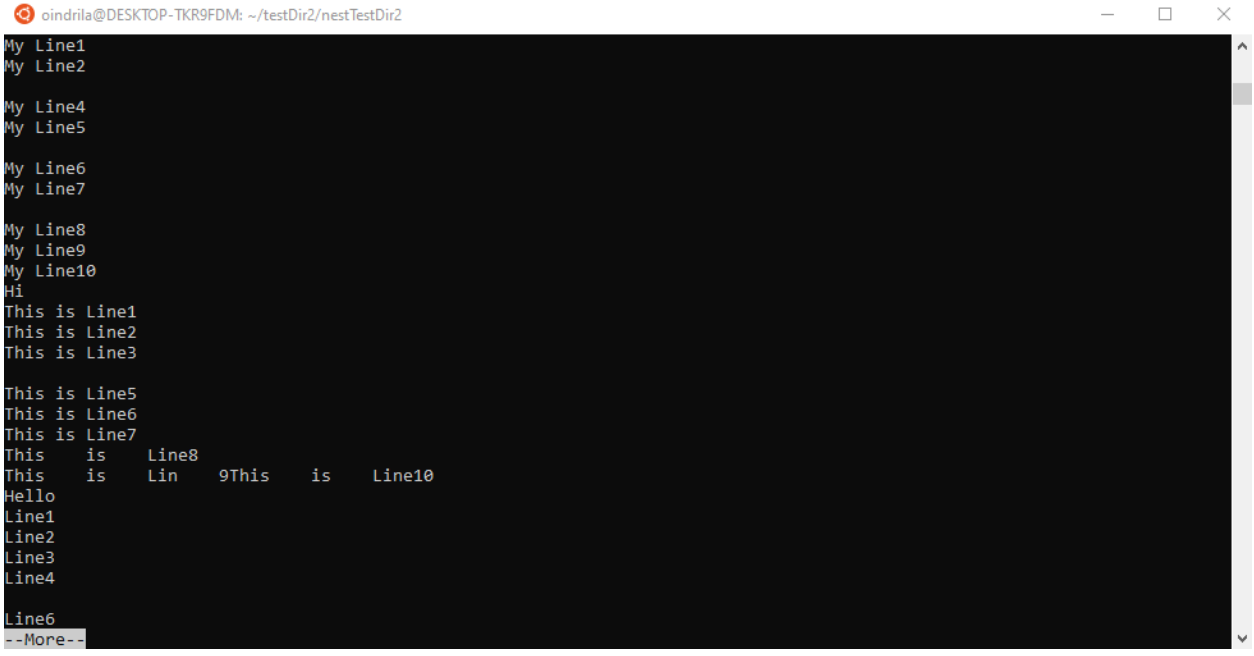
- The "*cat filename1 fileName2 fileName3 .... | more*" command *displays* the *contents of all* the *files*, mentioned in the command, *as one page at a time for larger files*.

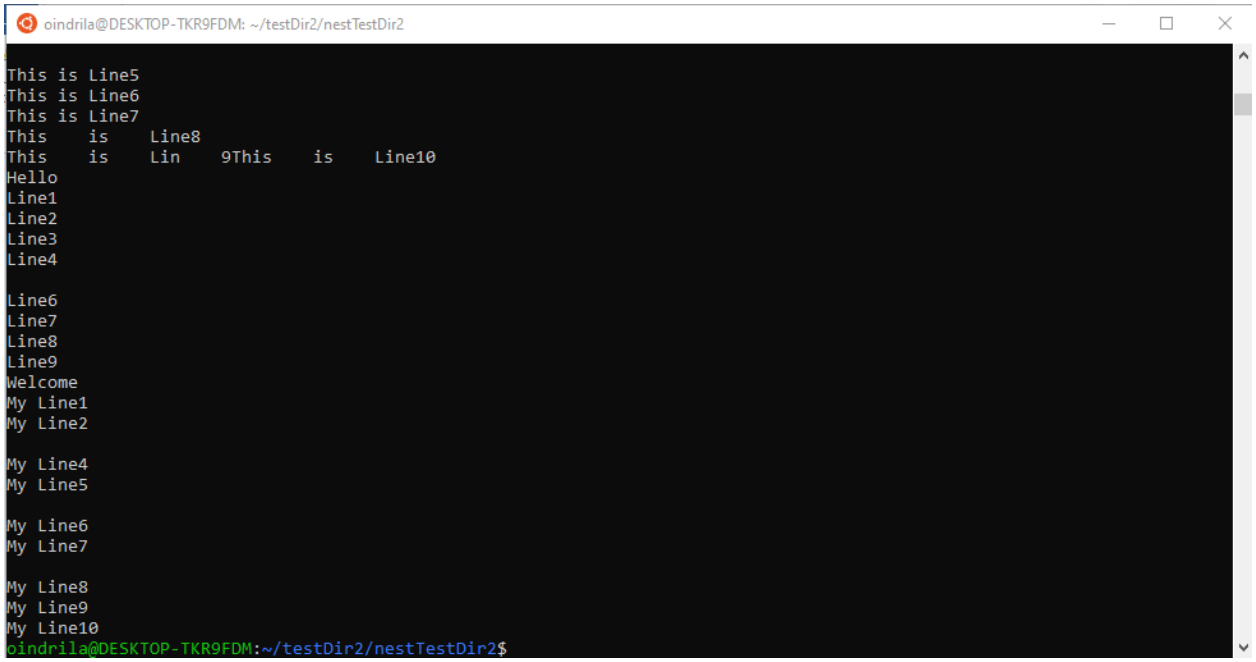
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat firstTextFile.txt secondTextFile.txt thirdTextFile.txt outputTextF
ile.txt newOutputTextFile.txt | more
```


oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
--More--


oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
My Line8
My Line9
My Line10
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
--More--

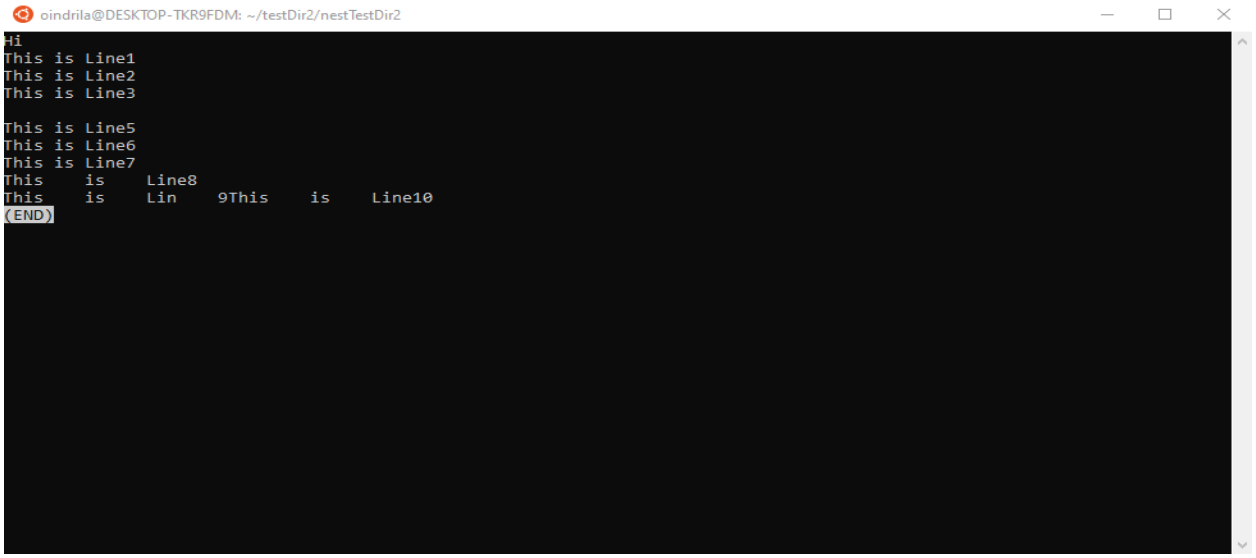

oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
My Line5
My Line6
My Line7
My Line8
My Line9
My Line10
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
--More--


oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
My Line8
My Line9
My Line10
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
--More--



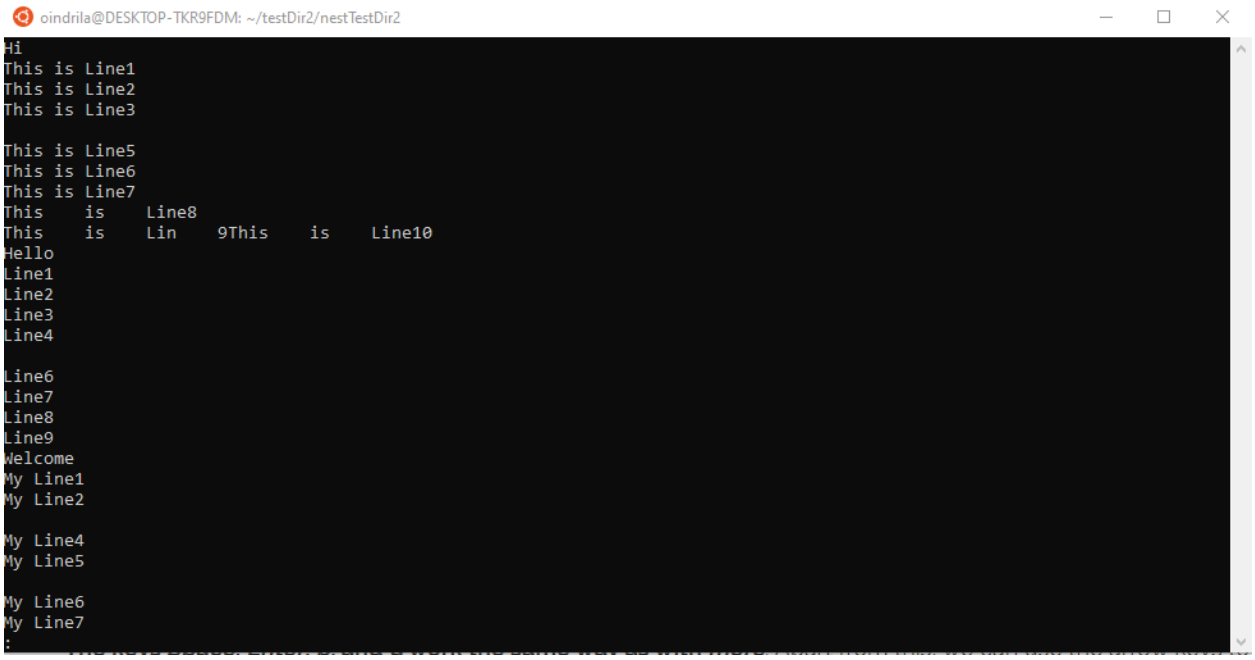
- The "*cat*" command is *good for small files*. But, *if* the *file is large*, the *contents will zoom past* and *only* the *last screen worth of* the *content will be displayed*. The "*cat filename | less*" command *displays* the *first page* of the *contents of* the *larger file*, and, *prompts at* the *end of* the *page*.
  Even if the *contents of* the *file fits in a single page*, (END) *will be prompted at* the *end of* the *page*. *To return to* the *Command Prompt*, "*q*" *key* is *used*.

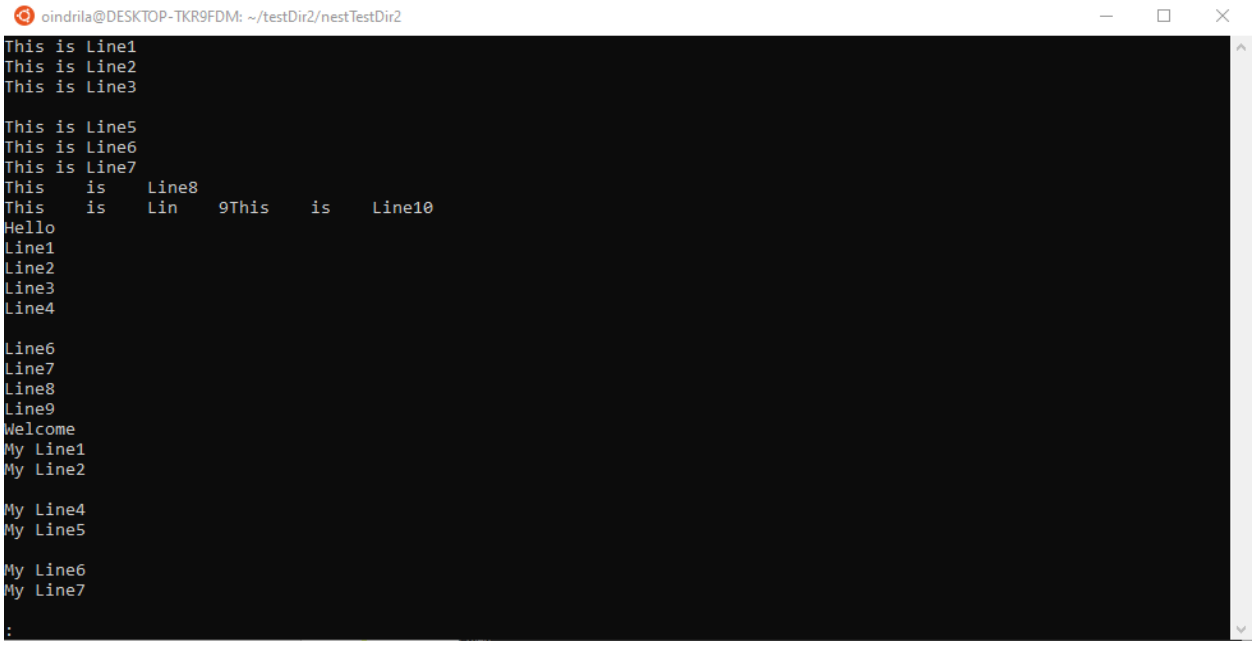
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat firstTextFile.txt | less
```

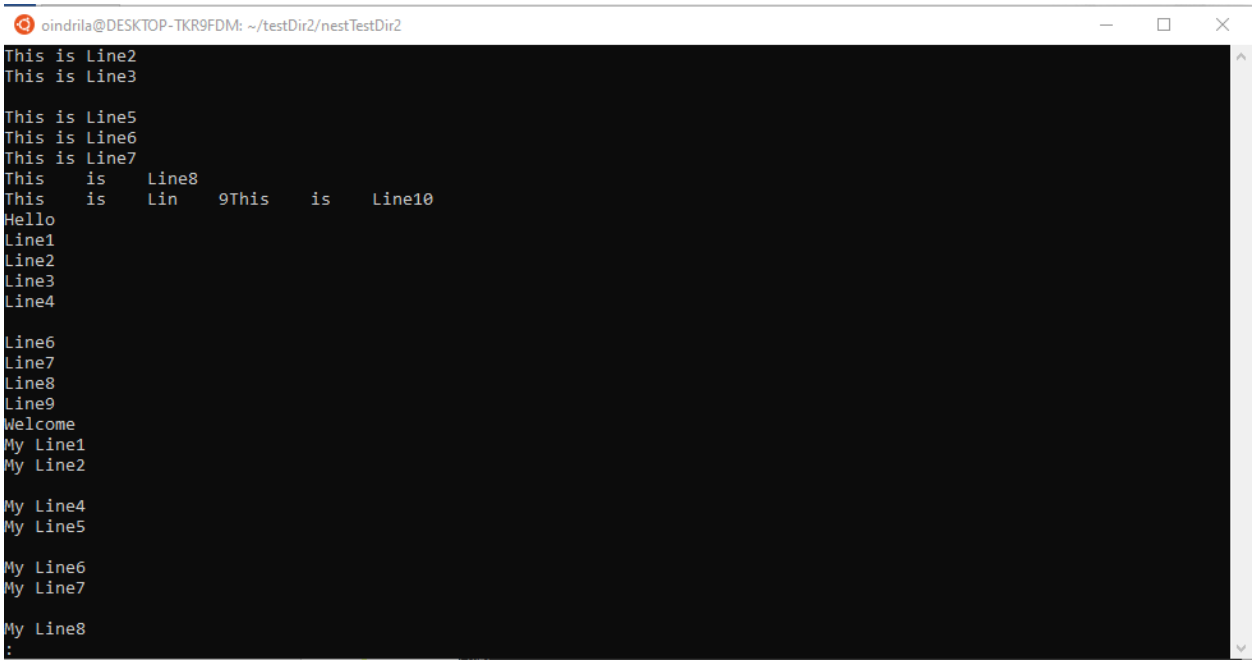


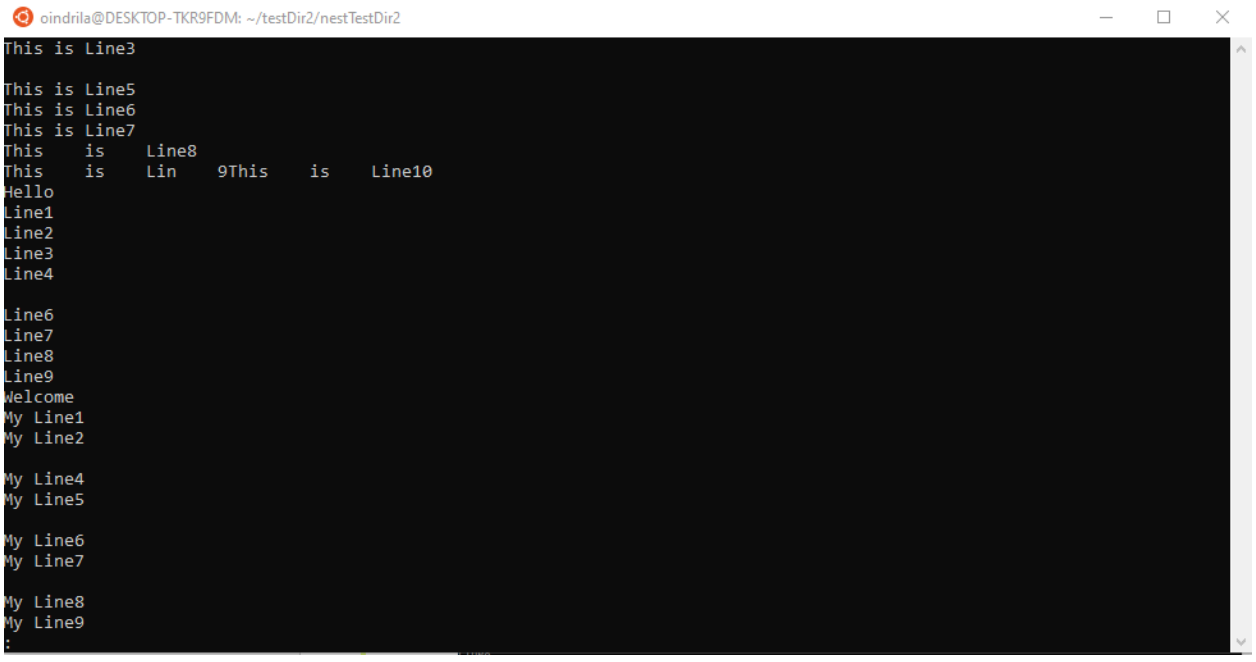
If the *contents of* the *file does not fit in a single page*, the *cursor will stay at* the *end of each page*. *Then* the *user can scroll through* the *contents of* the *file forward using* the "*Enter*", or, "*f*" *key*, *one line at a time*. *To scroll back to* the *previous page*, "*b*" *key* is *used*. *Once* the *end of* the *file is reached*, (END) *will be prompted at* the *end of* the *page*. *To return to* the *Command Prompt*, "*q*" *key* is *used*.

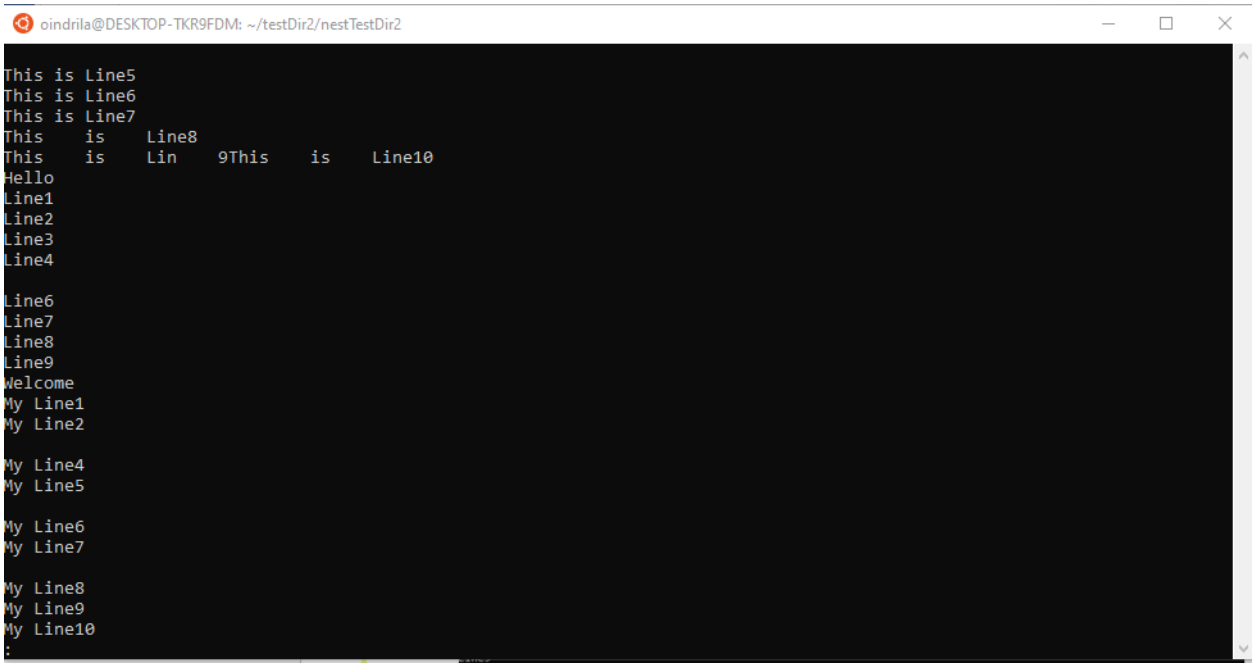
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat outputTextFile.txt | less
```

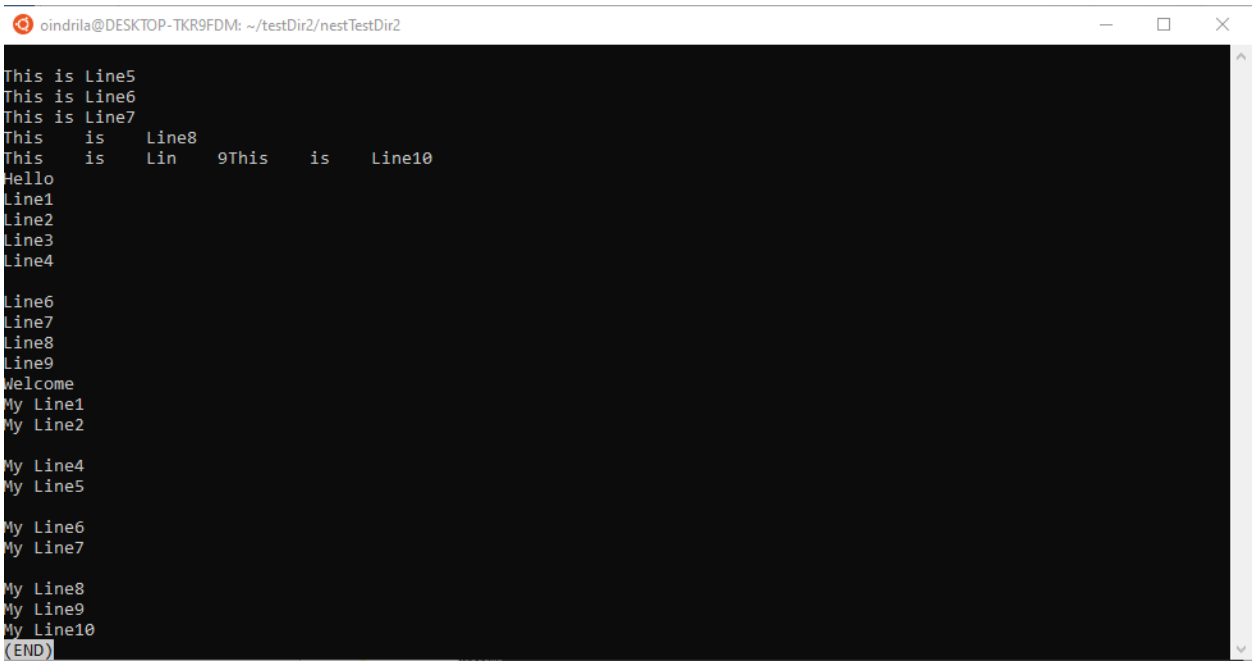





oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
My Line8
:

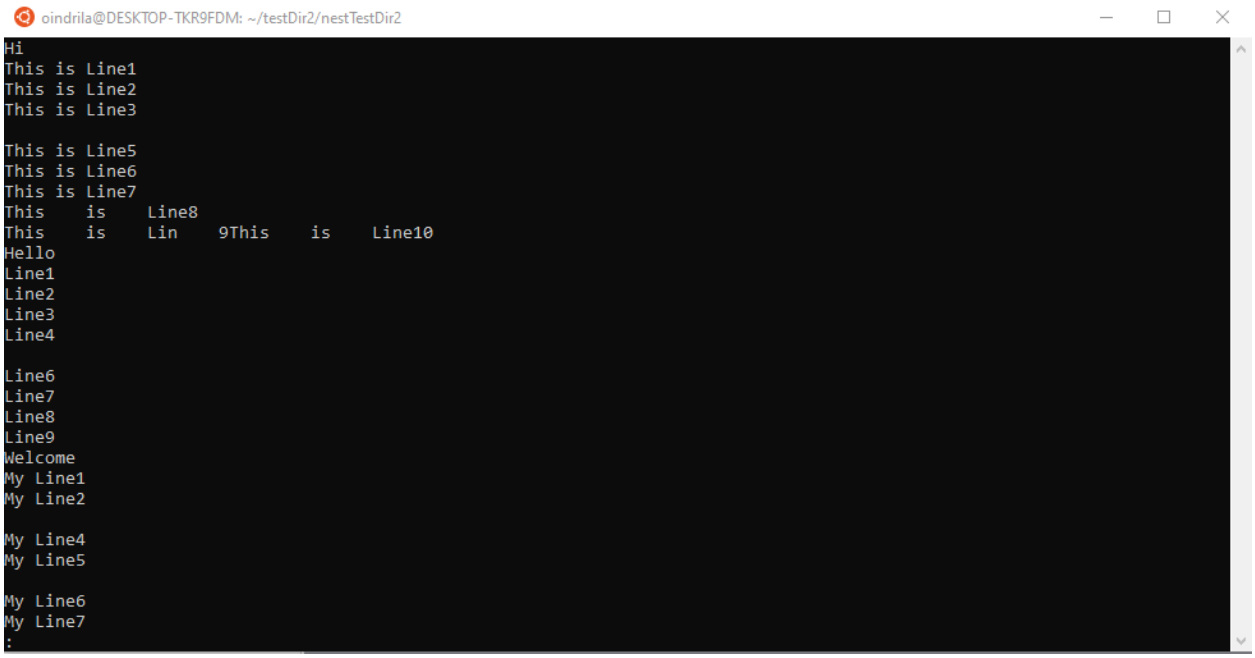

oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
My Line8
My Line9
:

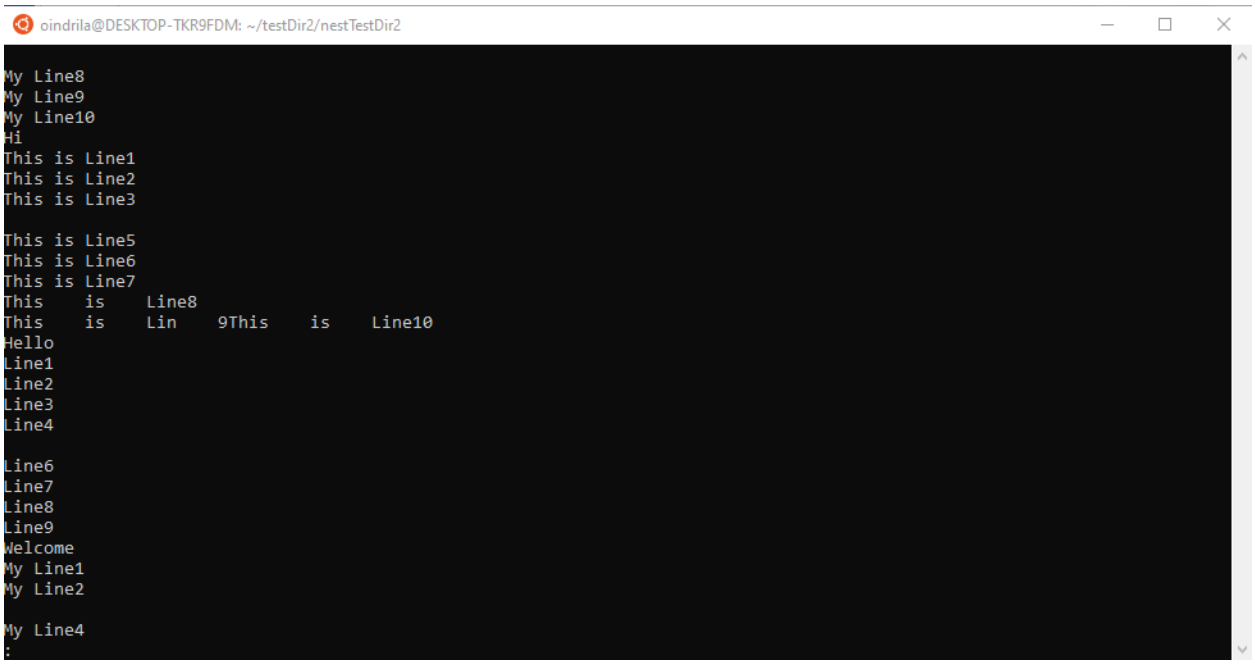


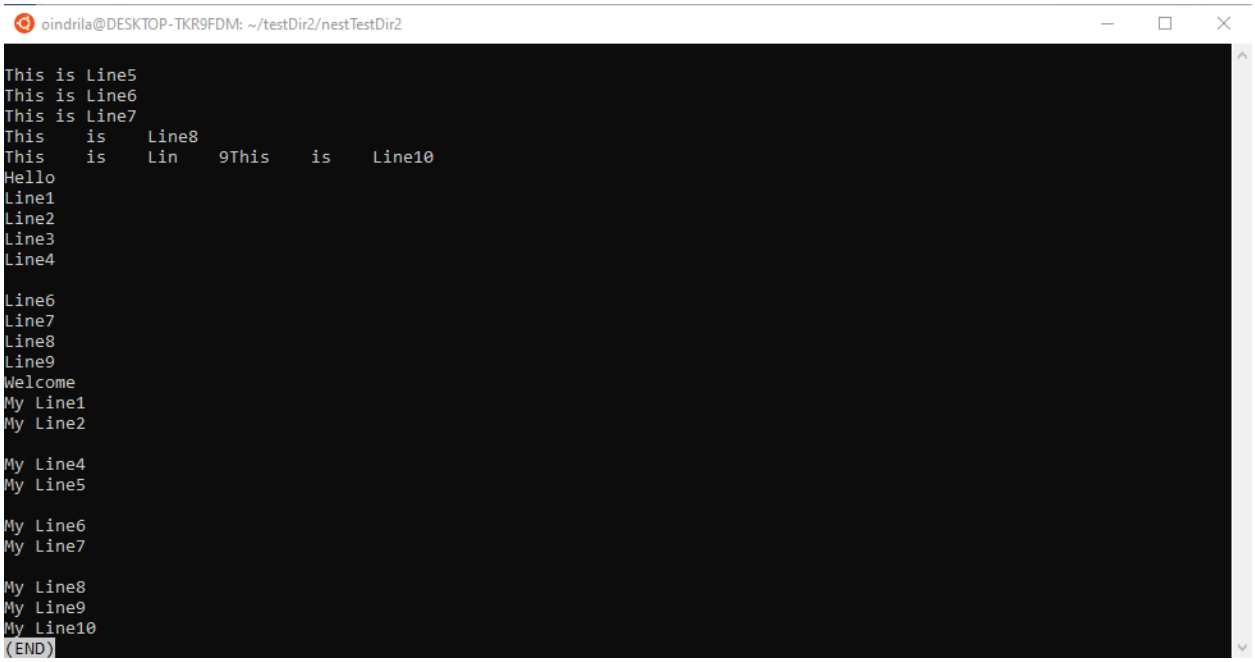


The *user can* also *scroll through* the *file in a page by page manner using* the "*Space*" *bar*. *To return to* the *Command Prompt*, "*q*" *key* is *used*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat newOutputTextFile.txt | less
```

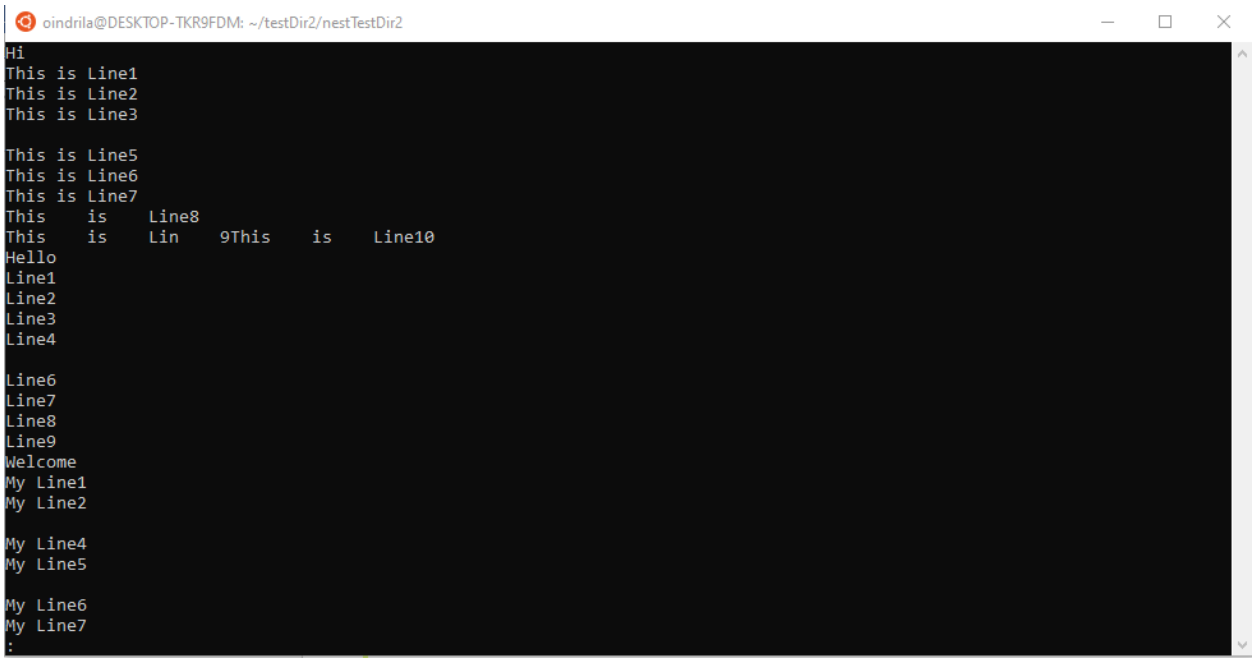

oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
:

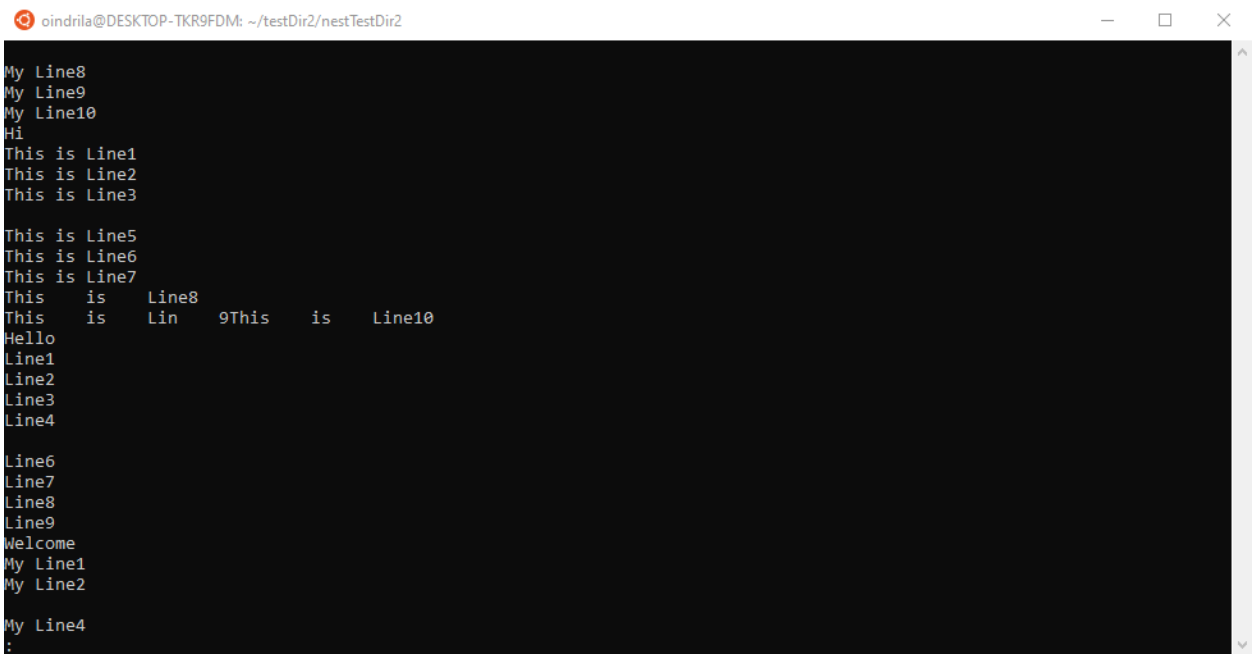

oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
My Line8
My Line9
My Line10
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
:

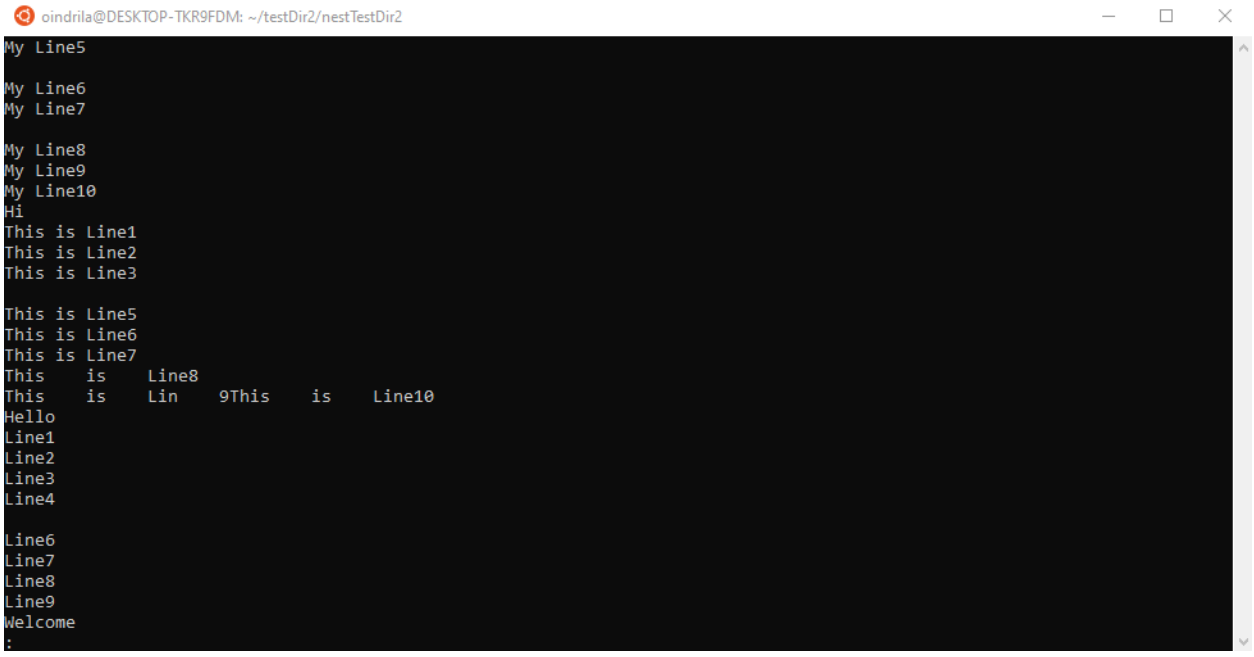


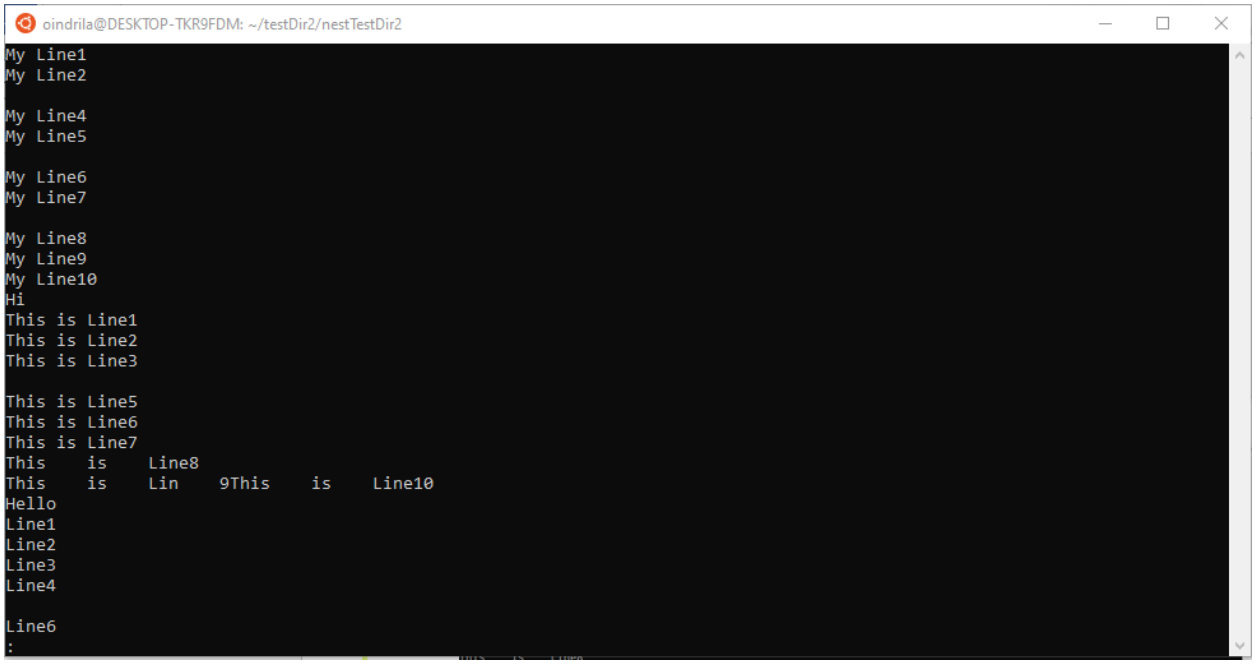
- The "*cat filename1 fileName2 fileName3 .... | less*" command *displays* the *contents of all* the *files*, mentioned in the command, *as one page at a time for larger files*.

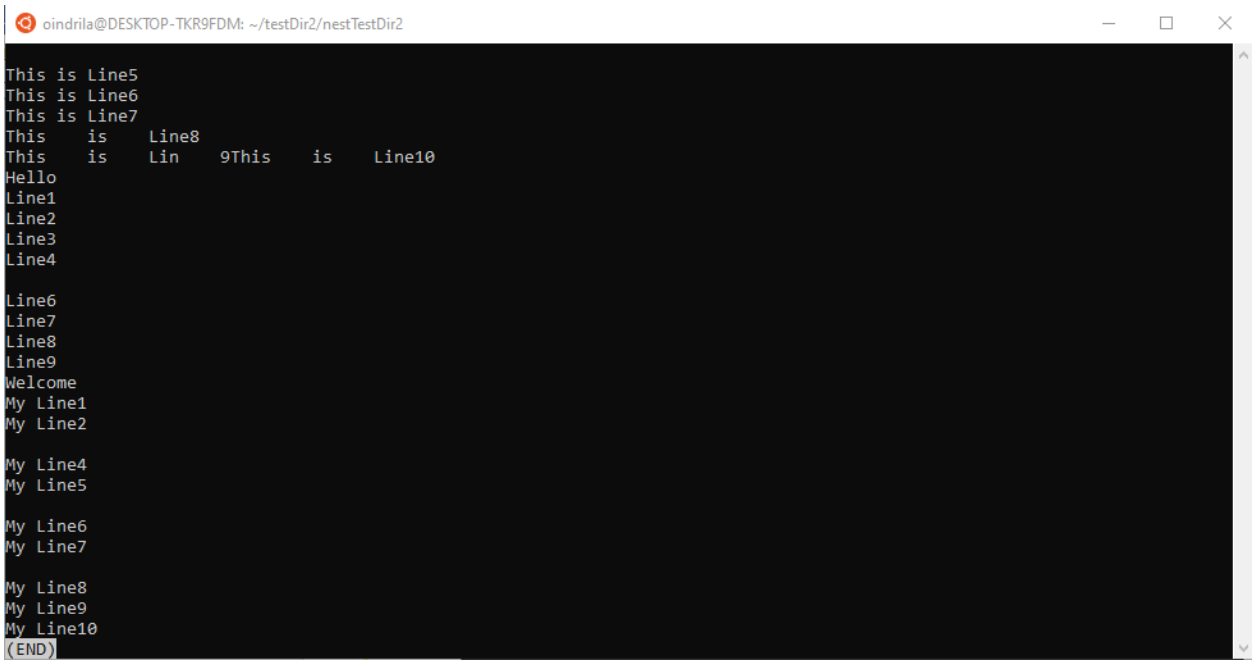
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat firstTextFile.txt secondTextFile.txt thirdTextFile.txt outputTextF
ile.txt newOutputTextFile.txt | less
```




oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
My Line8
My Line9
My Line10
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
:


oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
My Line5
My Line6
My Line7
My Line8
My Line9
My Line10
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
:





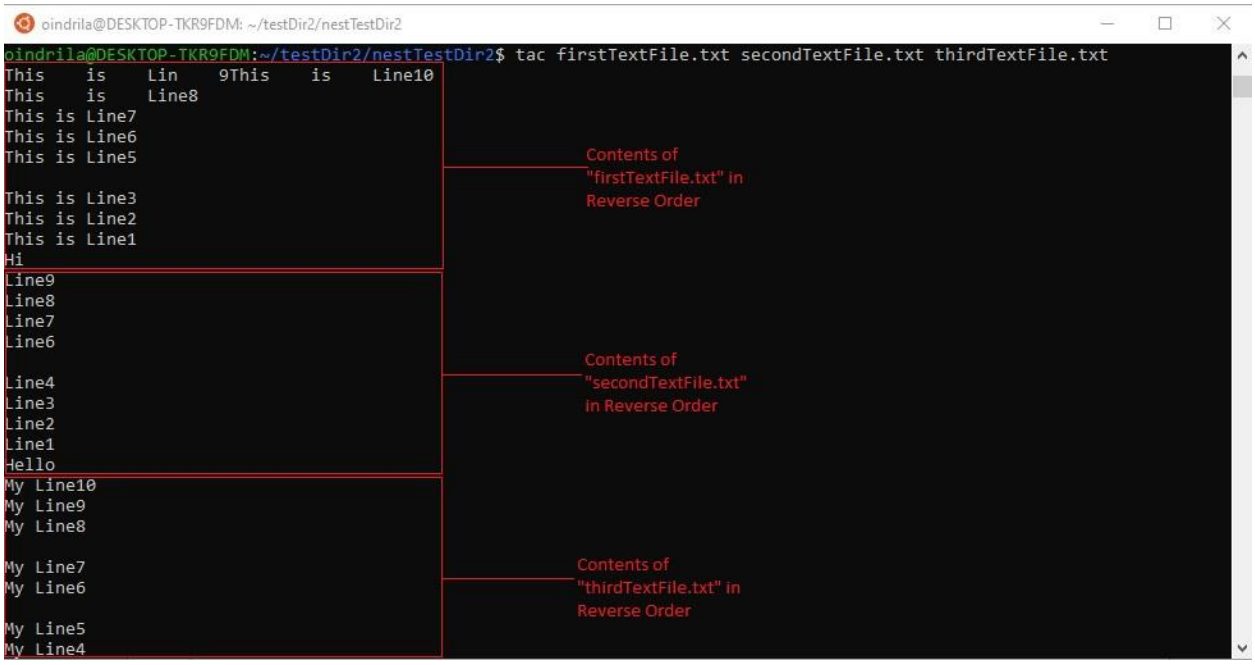
- The "***cat ****" command is used to ***display*** the ***contents of all*** the ***files present*** in the ***current directory***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat *
```

- The "*tac fileName*" command is used to *display* the *contents of* the *file* mentioned in the command in *reverse order*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ tac firstTextFile.txt
This    is    Lin    9This    is    Line10
This    is    Line8
This is Line7
This is Line6
This is Line5

This is Line3
This is Line2
This is Line1
Hi
```

- The "*tac fileName1 fileName2 fileName3 ....*" command is used to *display* the *contents of each of* the *files* mentioned in the command in *reverse order*.



- The "*tac *.*" command is used to *display* the *contents of each of* the *files present* in the *current directory* in *reverse order*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ tac *
```

- The "*cat fileName1 >> fileName2*" command is used to *append* the *contents of* the *file* "*fileName1*" *to* the *end of* the *file* "*fileName2*". The *last line of* the *file*, *in which*

the *content from* the *other file is to be appended*, *is replaced by* the *first line of* the *other file*.
When the *user does not want to overwrite an existing file*, instead, *more contents need to be added to* that *existing file*, then the *Redirection Operator* "**>>**" is *used*

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat file2.doc >> file1.pdf
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat file1.pdf
Hi

This is the content of file1.pdf



Closing file1.pdf
Hello



This is the content of file2.doc

Closing file2.doc
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Original content of file "file1.pdf"

Appended content of file "file2.doc"

- The "*cat fileName1 fileName2 fineName3 .... >> fileNameN*" command is used to *append* the *contents of all* the *files present in the left side of* the *Redirection Operator* "**>>**" to the file "*fileNameN*" *present in the right side of* the *Redirection Operator* "**>>**".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat file3.docx file1.pdf >> file2.doc
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat file2.doc
Hello



This is the content of file2.doc

Closing file2.doc
Welcome

This is the content of file3.docx
Closing file3.docx
Hi

This is the content of file1.pdf



Closing file1.pdf
```

Original contents of the file "file2.doc"

Content of the first appended file "file3.docx"

Content of the second appended file "file1.pdf"

- The "*cat -s fileName*" command is *used to suppress repeated empty lines present in* the *contents of a file* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -s file2.doc
Hello

This is the content of file2.doc

Closing file2.doc
Welcome

This is the content of file3.docx
Closing file3.docx
Hi

This is the content of file1.pdf

Closing file1.pdf
```

- The "*cat -s fileName1 fileName2 fileName3 ....*" command is *used to suppress repeated empty lines present in* the *contents of all* the *files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cat -s file2.doc file1.pdf
Hello

This is the content of file2.doc

Closing file2.doc
Welcome

This is the content of file3.docx
Closing file3.docx
Hi

This is the content of file1.pdf

Closing file1.pdf
Hi

This is the content of file1.pdf

Closing file1.pdf
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

touch

- The "*touch fileName*" command is *used to create an empty file*, i.e., *without any content*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch doc1
```

To get more information about the *created file*, the *Long Listing Command* "*ll*", or, "*ls –l*" is *used*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ll
total 4
drwxrwxrwx 1 oindrila oindrila 4096 Jun 12 00:26 ./
drwxrwxrwx 1 oindrila oindrila 4096 Jun 11 03:41 ../
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 00:26 doc1
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*touch fileName1 fileName2 fileName3 ....*" command is *used to create multiple empty files*, i.e., *without any content*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch doc2 doc3 doc4
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 4
-rw-rw-rw- 1 oindrila oindrila   0 Jun 12 00:26 doc1
-rw-rw-rw- 1 oindrila oindrila   0 Jun 12 00:33 doc2
-rw-rw-rw- 1 oindrila oindrila   0 Jun 12 00:33 doc3
-rw-rw-rw- 1 oindrila oindrila   0 Jun 12 00:33 doc4
-rw-rw-rw- 1 oindrila oindrila  58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila 182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila  62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila 151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- *By default*, the "*touch*" command *changes both* the "*access time*", and "*modification time*" *of an input file*. If needed, *this feature can be limited to any one of* these *two*

timestamps.
The "*touch –a fileName*" command is *used to change*, or, *update* the *last access time of a file*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc1
  File: doc1
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 1407374884179636  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 00:40:42.370778100 +0530
Modify: 2020-06-12 00:26:00.764884500 +0530
Change: 2020-06-12 00:40:42.370778100 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*touch –a fileName1 fileName2 fileName3 ….*" command is *used to change*, or, *update* the *last access times of all* the *files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch -a doc2 doc3
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc2
  File: doc2
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 10133099161613600  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 00:52:56.900457800 +0530
Modify: 2020-06-12 00:33:43.990649600 +0530
Change: 2020-06-12 00:52:56.900457800 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc3
  File: doc3
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 2251799814311607  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 00:52:56.900457800 +0530
Modify: 2020-06-12 00:33:43.990649600 +0530
Change: 2020-06-12 00:52:56.900457800 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- *By default*, the "*touch*" command *changes both* the "*access time*", and "*modification time*" *of an input file*. If needed, *this feature can be limited to any one of* these *two timestamps*.
  The "*touch –m fileName*" command is *used to change*, or, *update* the *last modification time of a file*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch -m doc1
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc1
  File: doc1
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 1407374884179636  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 00:40:42.370778100 +0530
Modify: 2020-06-12 01:17:30.062985200 +0530
Change: 2020-06-12 01:17:30.062985200 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*touch –m fileName1 fileName2 fileName3 ….*" command is ***used to change***, or, ***update*** the ***last modification times of all*** the ***files*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch -m doc2 doc3
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc2
  File: doc2
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 10133099161613600  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 00:52:56.900457800 +0530
Modify: 2020-06-12 01:53:04.386254900 +0530
Change: 2020-06-12 01:53:04.386254900 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc3
  File: doc3
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 2251799814311607  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 00:52:56.900457800 +0530
Modify: 2020-06-12 01:53:04.386254900 +0530
Change: 2020-06-12 01:53:04.386254900 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*touch fileName –r referenceFileName*" command is ***used to change***, or, ***update*** the "***access timestamp***", and, "***modification timestamp of*** the ***filename*** from the *referenceFineName*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch doc1 -r firstTextFile.txt
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc1
  File: doc1
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 1407374884179636  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-11 04:31:01.938892200 +0530
Modify: 2020-06-11 05:20:22.599594300 +0530
Change: 2020-06-12 02:05:15.052142700 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*touch –t YYYYMMDDHHMM fileName*" command is *used to create an empty file*, i.e., *without any content*, *using a specified time*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch -t 202006120230 doc4
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc4
  File: doc4
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 562949954047712  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 02:30:00.000000000 +0530
Modify: 2020-06-12 02:30:00.000000000 +0530
Change: 2020-06-12 02:14:14.277862400 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*touch fileName1 fileName2 fileName3 ….*" command is *used to create multiple empty files*, i.e., *without any content*, *using a specified time*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch -t 202006120300 doc5 doc6
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc5
  File: doc5
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 2814749767378563  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 03:00:00.000000000 +0530
Modify: 2020-06-12 03:00:00.000000000 +0530
Change: 2020-06-12 02:16:37.361879600 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ stat doc6
  File: doc6
  Size: 0               Blocks: 0          IO Block: 4096   regular empty file
Device: 2h/2d   Inode: 4222124650932232  Links: 1
Access: (0666/-rw-rw-rw-)  Uid: ( 1000/oindrila)   Gid: ( 1000/oindrila)
Access: 2020-06-12 03:00:00.000000000 +0530
Modify: 2020-06-12 03:00:00.000000000 +0530
Change: 2020-06-12 02:16:37.371887700 +0530
 Birth: -
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*touch –c fileName*" command is *used to check whether a file is created or not. If not created, this command avoids creating* the *mentioned file*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch -c doc7
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls
doc1  doc3  doc5  file1.pdf  file3.docx         newOutputTextFile.txt  secondTextFile.txt
doc2  doc4  doc6  file2.doc  firstTextFile.txt  outputTextFile.txt     thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*touch –c fileName1 fileName2 fileName3 ….*" command is *used to check whether all* the *files* mentioned in the command *are created or not. If not created, this command avoids creating* the *mentioned files*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ touch -c doc7 doc8 doc9
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls
doc1  doc3  doc5  file1.pdf  file3.docx         newOutputTextFile.txt  secondTextFile.txt
doc2  doc4  doc6  file2.doc  firstTextFile.txt  outputTextFile.txt     thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

head

- To *look at* the *first few lines of a file*, the "*head filename*" command is used. *By default, this command shows* the *first 10 lines of a file*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ head outputTextFile.txt
Hi
This is Line1
This is Line2
This is Line3

This is Line5
This is Line6
This is Line7
This    is    Line8
This    is    Lin    9This    is    Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- *To see* the *desired number of first lines of a file*, the "*head -number filename*" command is used.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ head -4 outputTextFile.txt
Hi
This is Line1
This is Line2
This is Line3
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

tail

- To *look at* the *last few lines of a file*, the "*tail filename*" command is used. *By default*, *this command shows* the *last 10 lines of a file*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ tail outputTextFile.txt

My Line4
My Line5

My Line6
My Line7

My Line8
My Line9
My Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- *To see* the *desired number of last lines of a file*, the "*tail -number filename*" command is used.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ tail -5 outputTextFile.txt
My Line7

My Line8
My Line9
My Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

cp

- The "*cp sourceFileName destinationFileName*" command is used to *copy a file* and *paste* it *within* the *current*, or, *different directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cp secondTextFile newSecondTextFile
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cp secondTextFile /home/oindrila/testDir1/nestTestDir1/secondTextFile
```

rm

- The "*rm fileName*" command is used to *delete*, or, *remove a file from* the *current directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ rm firstTextFile
```

- The "*rm fileName1 fileName2 fileName3 ....*" command is used to *delete*, or, *remove all* the *files*, mentioned in the command, *from* the *current directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ rm newSecondTextFile secondTextFile thirdTextFile
```

mv

- The "*mv fileName destinationDirectory*" command is used to ***move a file*** from ***one directory*** to another ***directory***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir1/nestTestDir1$ mv newSecondTextFile /home/oindrila/testDir3/nestTestDir3
```

- The "*mv oldFileName newFileName*" command is used to ***rename a file*** in the ***same directory***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir1/nestTestDir1$ mv secondTextFile newSecondTextFile
```

grep

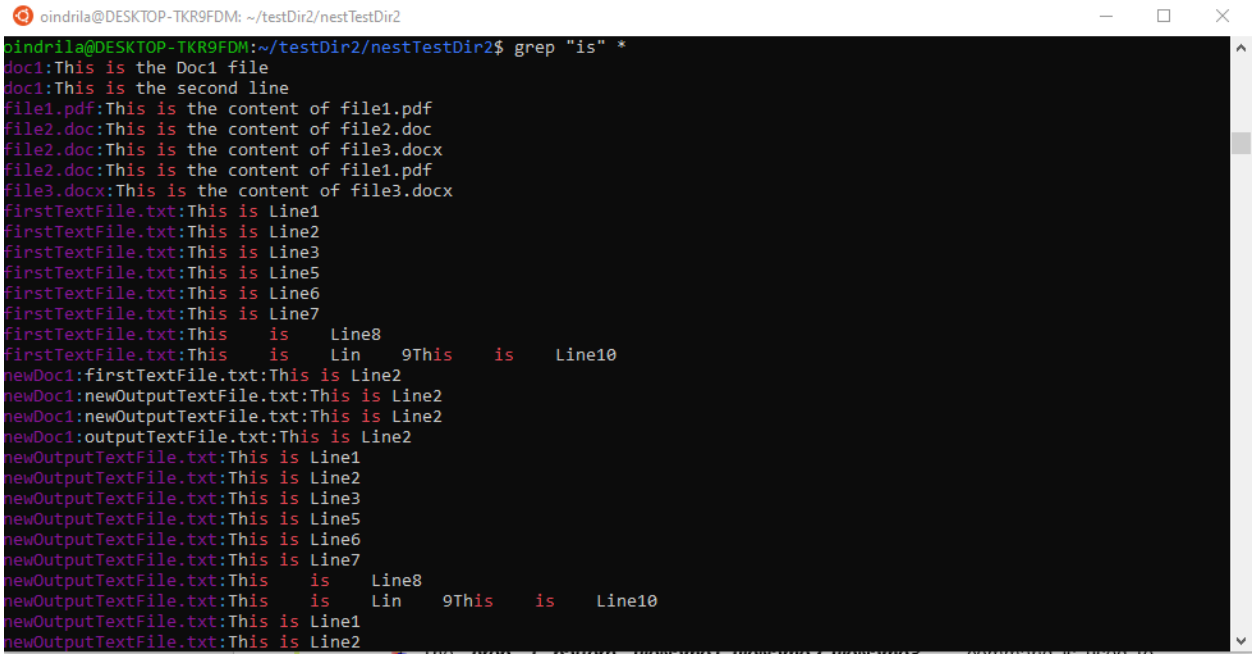
- The "*grep*" command is ***used to search a file for a particular pattern of characters***, and, ***displays all lines that contain that specified pattern***. The ***pattern that is searched in*** the ***file***, is ***referred to as*** the "***Regular Expression***".
- The "*grep "pattern" fileName*" command is used to ***search for*** the provided ***string pattern in*** the ***file*** mentioned in the command. The ***lines matching*** the ***string pattern from*** the ***file***, mentioned in the command, ***are displayed***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep "is" firstTextFile.txt
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This    is    Line8
This    is    Lin    9This    is    Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep "pattern" fileName1 fileName2 fileName3 ....*" command is used to ***search for*** the provided ***string pattern in*** the ***files*** mentioned in the command. The ***lines***, ***along with*** the ***corresponding file name***, ***matching*** the ***string pattern from each of*** the ***files***, mentioned in the command, ***are displayed***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep "is" firstTextFile.txt secondTextFile.txt thirdTextFile.txt doc1
doc2
firstTextFile.txt:This is Line1
firstTextFile.txt:This is Line2
firstTextFile.txt:This is Line3
firstTextFile.txt:This is Line5
firstTextFile.txt:This is Line6
firstTextFile.txt:This is Line7
firstTextFile.txt:This    is    Line8
firstTextFile.txt:This    is    Lin    9This    is    Line10
doc1:This is the Doc1 file
doc1:This is the second line
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep "pattern" **" command is used to **search for** the provided **string pattern in** the **files** mentioned in the command. The **lines**, **along with** the **corresponding file name**, **matching** the **string pattern from all** the **files present** in the **current directory are displayed**.



- The "*grep –i "pattern" fileName*" command is used to **search for** the provided **string pattern case insensitively in** the **file** mentioned in the command. The **lines matching** the **string pattern from** the **file**, mentioned in the command, **are displayed**.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -i "THIS" firstTextFile.txt
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This    is    Line8
This    is    Lin    9This    is    Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –i "pattern" fileName1 fileName2 fileName3 ….*" command is used to **search for** the provided **string pattern case insensitively from** the **files** mentioned in the command. The **lines matching** the **string pattern from** the **files**, mentioned in the command, **are displayed along with** the **file name**.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
secondTextFile.txt:Line8
secondTextFile.txt:Line9
grep: thirdFile.txt: No such file or directory
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -i "LINE" firstTextFile.txt secondTextFile.txt thirdTextFile.txt
firstTextFile.txt:This is Line1
firstTextFile.txt:This is Line2
firstTextFile.txt:This is Line3
firstTextFile.txt:This is Line5
firstTextFile.txt:This is Line6
firstTextFile.txt:This is Line7
firstTextFile.txt:This    is    Line8
firstTextFile.txt:This    is    Lin    9This    is    Line10
secondTextFile.txt:Line1
secondTextFile.txt:Line2
secondTextFile.txt:Line3
secondTextFile.txt:Line4
secondTextFile.txt:Line6
secondTextFile.txt:Line7
secondTextFile.txt:Line8
secondTextFile.txt:Line9
thirdTextFile.txt:My Line1
thirdTextFile.txt:My Line2
thirdTextFile.txt:My Line4
thirdTextFile.txt:My Line5
thirdTextFile.txt:My Line6
thirdTextFile.txt:My Line7
thirdTextFile.txt:My Line8
thirdTextFile.txt:My Line9
thirdTextFile.txt:My Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –i "pattern" **" command is used to **search for** the provided **string pattern** case insensitively in* the *current directory*. The *lines matching* the *string pattern in* the *current directory are displayed along with* the *file name*.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -i "LINE" *
doc1:This is the second line
firstTextFile.txt:This is Line1
firstTextFile.txt:This is Line2
firstTextFile.txt:This is Line3
firstTextFile.txt:This is Line5
firstTextFile.txt:This is Line6
firstTextFile.txt:This is Line7
firstTextFile.txt:This    is    Line8
firstTextFile.txt:This    is    Lin    9This    is    Line10
newOutputTextFile.txt:This is Line1
newOutputTextFile.txt:This is Line2
newOutputTextFile.txt:This is Line3
newOutputTextFile.txt:This is Line5
newOutputTextFile.txt:This is Line6
newOutputTextFile.txt:This is Line7
newOutputTextFile.txt:This    is    Line8
newOutputTextFile.txt:This    is    Lin    9This    is    Line10
newOutputTextFile.txt:Line1
newOutputTextFile.txt:Line2
newOutputTextFile.txt:Line3
newOutputTextFile.txt:Line4
newOutputTextFile.txt:Line6
newOutputTextFile.txt:Line7
newOutputTextFile.txt:Line8
newOutputTextFile.txt:Line9
newOutputTextFile.txt:My Line1
newOutputTextFile.txt:My Line2
newOutputTextFile.txt:My Line4
newOutputTextFile.txt:My Line5
```

- The "*grep –c "pattern" fileName*" command is used to ***print*** the ***number of lines that match*** the provided ***string pattern in*** the ***file*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -c "This" firstTextFile.txt
8
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –c "pattern" fileName1 fileName2 fileName3 ….*" command is used to ***print*** the ***number of lines that match*** the provided ***string pattern from*** the ***files*** mentioned in the command. The ***number of lines matching*** the ***string pattern in each*** of the ***files***, mentioned in the command, ***are displayed along with*** the ***file name***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -c "Line" firstTextFile.txt secondTextFile.txt thirdTextFile.txt
firstTextFile.txt:8
secondTextFile.txt:8
thirdTextFile.txt:9
```

- The "*grep –c "pattern" ******" command is used to ***print*** the ***number of lines that match*** the provided ***string pattern in all*** the ***files present in*** the ***current directory***. The ***number of lines matching*** the ***string pattern in each*** of the ***files*** of the ***current directory are displayed along with*** the ***file name***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -c "Line" *
doc1:0
doc2:0
doc3:0
doc4:0
doc5:0
doc6:0
file1.pdf:0
file2.doc:0
file3.docx:0
firstTextFile.txt:8
newOutputTextFile.txt:50
outputTextFile.txt:25
secondTextFile.txt:8
thirdTextFile.txt:9
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –l "pattern" fileName1 fileName2 fileName3 ….*" command is used to ***print*** the ***file names that match*** the provided ***string pattern from*** the ***list of files*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -l "Line" firstTextFile.txt secondTextFile.txt thirdTextFile.txt
outputTextFile.txt newOutputTextFile.txt doc1 doc2 doc3
firstTextFile.txt
secondTextFile.txt
thirdTextFile.txt
outputTextFile.txt
newOutputTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

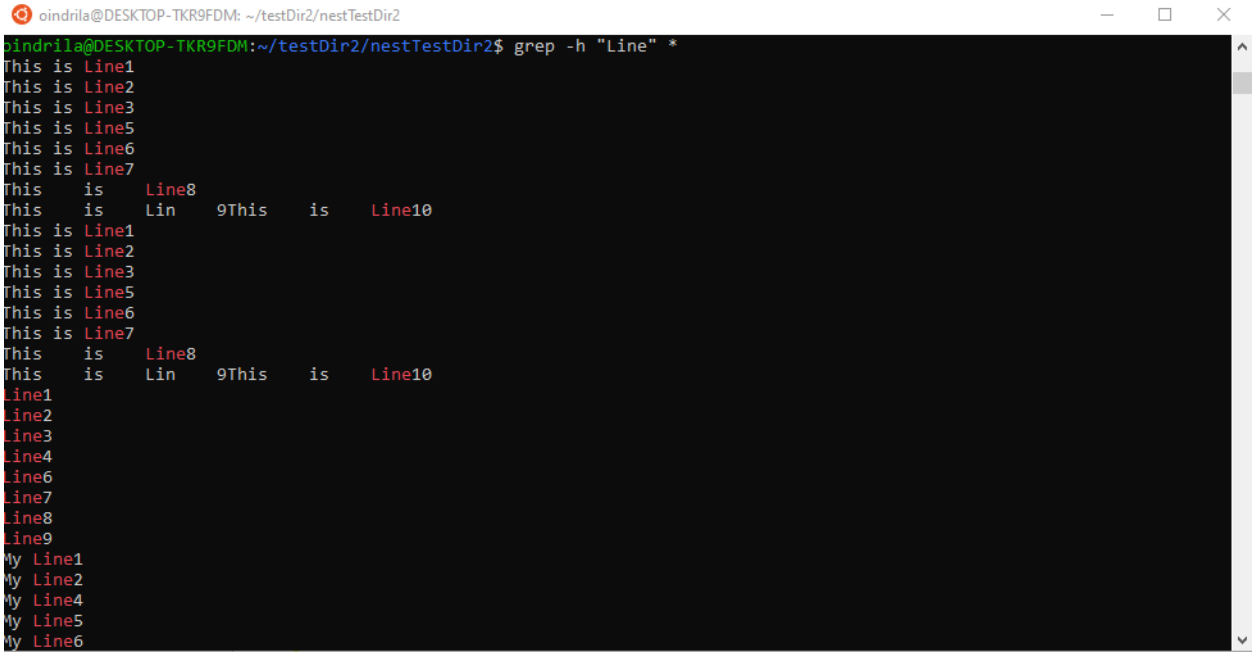
- The "*grep –l "pattern" **" command is used to ***print*** the ***file names that match*** the provided ***string pattern from*** the ***current directory***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -l "Line" *
firstTextFile.txt
newOutputTextFile.txt
outputTextFile.txt
secondTextFile.txt
thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –h "pattern" fileName1 fileName2 fileName3 ....*" command is used to ***print*** the ***lines that match*** the provided ***string pattern from*** the ***list of files*** mentioned in the command, ***without*** the ***corresponding file names***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -h "Line" firstTextFile.txt secondTextFile.txt thirdTextFile.txt
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This    is    Line8
This    is    Lin    9This    is    Line10
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
My Line8
My Line9
My Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –h "pattern" **" command is used to ***print*** the ***lines that match*** the provided ***string pattern from all*** the ***files present*** in the ***current directory***, ***without*** the ***corresponding file names***.



- The "*grep –n "pattern" fileName*" command is used to ***print*** the ***lines, along with the line numbers***, ***that match*** the provided ***string pattern in*** the ***file*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -n "Line" firstTextFile.txt
2:This is Line1
3:This is Line2
4:This is Line3
6:This is Line5
7:This is Line6
8:This is Line7
9:This is Line8
10:This is Lin 9This is Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –n "pattern" fileName1 fileName2 fileName3 ….*" command is used to ***print*** the ***lines, along with the line numbers*** and ***corresponding file names***, ***that match*** the provided ***string pattern from*** the ***list of files*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -n "Line" firstTextFile.txt secondTextFile.txt thirdTextFile.txt
firstTextFile.txt:2:This is Line1
firstTextFile.txt:3:This is Line2
firstTextFile.txt:4:This is Line3
firstTextFile.txt:6:This is Line5
firstTextFile.txt:7:This is Line6
firstTextFile.txt:8:This is Line7
firstTextFile.txt:9:This    is    Line8
firstTextFile.txt:10:This    is    Lin    9This    is    Line10
secondTextFile.txt:2:Line1
secondTextFile.txt:3:Line2
secondTextFile.txt:4:Line3
secondTextFile.txt:5:Line4
secondTextFile.txt:7:Line6
secondTextFile.txt:8:Line7
secondTextFile.txt:9:Line8
secondTextFile.txt:10:Line9
thirdTextFile.txt:2:My Line1
thirdTextFile.txt:3:My Line2
thirdTextFile.txt:5:My Line4
thirdTextFile.txt:6:My Line5
thirdTextFile.txt:8:My Line6
thirdTextFile.txt:9:My Line7
thirdTextFile.txt:11:My Line8
thirdTextFile.txt:12:My Line9
thirdTextFile.txt:13:My Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "***grep –n "pattern" ****" command is used to ***print*** the ***lines, along with the line numbers*** and ***corresponding file names***, ***that match*** the provided ***string pattern from all*** the ***files present*** in the ***current directory***.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -n "Line" *
firstTextFile.txt:2:This is Line1
firstTextFile.txt:3:This is Line2
firstTextFile.txt:4:This is Line3
firstTextFile.txt:6:This is Line5
firstTextFile.txt:7:This is Line6
firstTextFile.txt:8:This is Line7
firstTextFile.txt:9:This    is    Line8
firstTextFile.txt:10:This    is    Lin    9This    is    Line10
newOutputTextFile.txt:2:This is Line1
newOutputTextFile.txt:3:This is Line2
newOutputTextFile.txt:4:This is Line3
newOutputTextFile.txt:6:This is Line5
newOutputTextFile.txt:7:This is Line6
newOutputTextFile.txt:8:This is Line7
newOutputTextFile.txt:9:This    is    Line8
newOutputTextFile.txt:10:This    is    Lin    9This    is    Line10
newOutputTextFile.txt:12:Line1
newOutputTextFile.txt:13:Line2
newOutputTextFile.txt:14:Line3
newOutputTextFile.txt:15:Line4
newOutputTextFile.txt:17:Line6
newOutputTextFile.txt:18:Line7
newOutputTextFile.txt:19:Line8
newOutputTextFile.txt:20:Line9
newOutputTextFile.txt:22:My Line1
newOutputTextFile.txt:23:My Line2
newOutputTextFile.txt:25:My Line4
newOutputTextFile.txt:26:My Line5
newOutputTextFile.txt:28:My Line6
```

- The "***grep –v "pattern" fileName***" command is used to ***print*** the ***lines that do not match*** the provided ***string pattern in*** the ***file*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -v "This" firstTextFile.txt
Hi

oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –v "pattern" fileName1 fileName2 fileName3 ....*" command is used to ***print*** the ***lines, along with*** the ***corresponding file names***, ***that do not match*** the provided ***string pattern from*** the ***list of files*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -v "Line" firstTextFile.txt secondTextFile.txt thirdTextFile.txt
outputTextFile.txt newOutputTextFile.txt
firstTextFile.txt:Hi
firstTextFile.txt:
secondTextFile.txt:Hello
secondTextFile.txt:
thirdTextFile.txt:Welcome
thirdTextFile.txt:
thirdTextFile.txt:
thirdTextFile.txt:
outputTextFile.txt:Hi
outputTextFile.txt:
outputTextFile.txt:Hello
outputTextFile.txt:
outputTextFile.txt:Welcome
outputTextFile.txt:
outputTextFile.txt:
outputTextFile.txt:
newOutputTextFile.txt:Hi
newOutputTextFile.txt:
newOutputTextFile.txt:Hello
newOutputTextFile.txt:
newOutputTextFile.txt:Welcome
newOutputTextFile.txt:
newOutputTextFile.txt:
newOutputTextFile.txt:
newOutputTextFile.txt:Hi
newOutputTextFile.txt:
newOutputTextFile.txt:Hello
newOutputTextFile.txt:
```

- The "*grep –n "pattern" **](*" command is used to ***print*** the ***lines, along with the line numbers*** and ***corresponding file names***, ***that do not match*** the provided ***string pattern from all*** the ***files present*** in the ***current directory***.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -v "Line" *
doc1:This is the Doc1 file
doc1:This is the second line
file1.pdf:Hi
file1.pdf:
file1.pdf:This is the content of file1.pdf
file1.pdf:
file1.pdf:
file1.pdf:
file1.pdf:Closing file1.pdf
file2.doc:Hello
file2.doc:
file2.doc:
file2.doc:
file2.doc:This is the content of file2.doc
file2.doc:
file2.doc:Closing file2.doc
file2.doc:Welcome
file2.doc:
file2.doc:This is the content of file3.docx
file2.doc:Closing file3.docx
file2.doc:Hi
file2.doc:
file2.doc:This is the content of file1.pdf
file2.doc:
file2.doc:
file2.doc:
file2.doc:Closing file1.pdf
file3.docx:Welcome
```

- *By default*, "*grep*" command *displays* the *entire line that matches* the provided *string pattern*. The "*grep –o "pattern" fileName*" command is used to *print only* the *matched string parts of a line that match* the provided *string pattern in* the *file* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -o "Thi" firstTextFile.txt
Thi
Thi
Thi
Thi
Thi
Thi
Thi
Thi
Thi
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep -o "pattern" fileName1 fileName2 fileName3 ....*" command is used to *print only* the *matched string parts of a line, along with the corresponding file names*, *that match* the provided *string pattern from* the *list of files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -o "Lin" firstTextFile.txt secondTextFile.txt thirdTextFile.txt
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
secondTextFile.txt:Lin
secondTextFile.txt:Lin
secondTextFile.txt:Lin
secondTextFile.txt:Lin
secondTextFile.txt:Lin
secondTextFile.txt:Lin
secondTextFile.txt:Lin
secondTextFile.txt:Lin
thirdTextFile.txt:Lin
thirdTextFile.txt:Lin
thirdTextFile.txt:Lin
thirdTextFile.txt:Lin
thirdTextFile.txt:Lin
thirdTextFile.txt:Lin
thirdTextFile.txt:Lin
thirdTextFile.txt:Lin
thirdTextFile.txt:Lin
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –o "pattern" **](*" command is used to *print only* the *matched string parts of a line, along with the corresponding file names*, *that match* the provided *string pattern from all* the *files present* in the *current directory*.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -o "Lin" *
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
firstTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
newOutputTextFile.txt:Lin
```

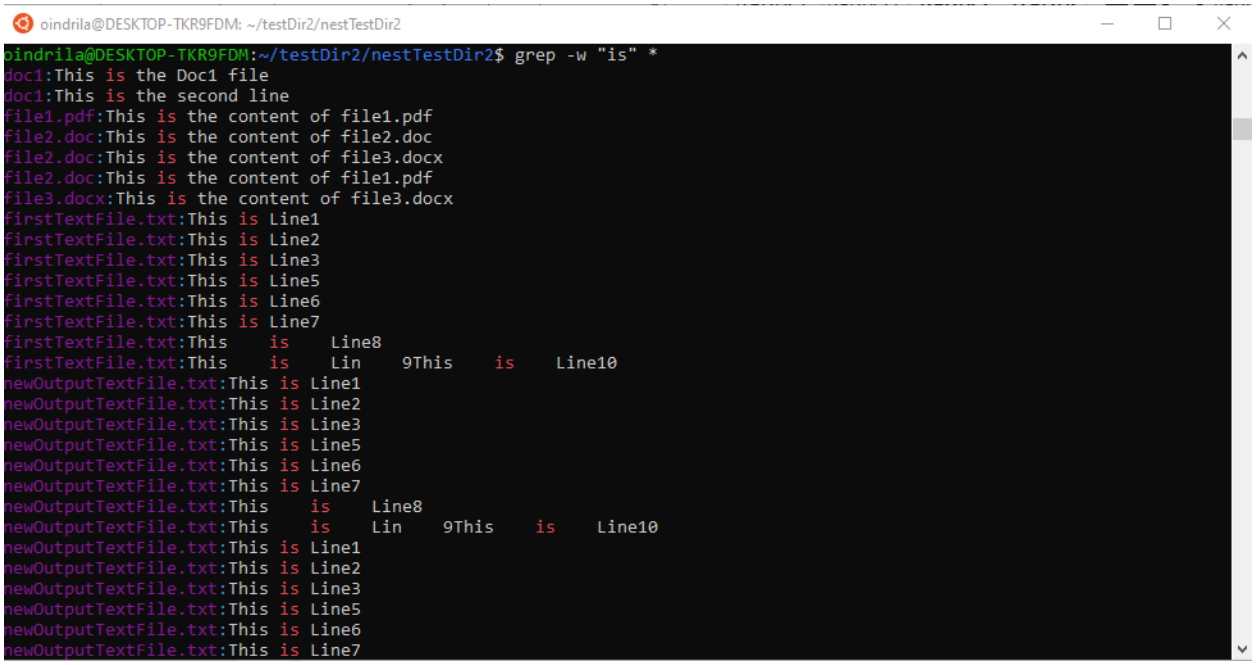
- *By default*, "*grep*" command *displays* the provided *string pattern*, *even if it is matched as substring in* the *provided file(s)*. The "*grep –w "pattern" fileName*" command is used to *print* the *lines that contain* the provided *entire string in* the *file* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -w "This" firstTextFile.txt
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This    is    Line8
This    is    Lin    9This    is    Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep -w "pattern" fileName1 fileName2 fileName3 ….*" command is used to *print* the *lines, along with the corresponding file names*, *that contain* the provided *entire string from* the *list of files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -w "My" firstTextFile.txt secondTextFile.txt thirdTextFile.txt
thirdTextFile.txt:My Line1
thirdTextFile.txt:My Line2
thirdTextFile.txt:My Line4
thirdTextFile.txt:My Line5
thirdTextFile.txt:My Line6
thirdTextFile.txt:My Line7
thirdTextFile.txt:My Line8
thirdTextFile.txt:My Line9
thirdTextFile.txt:My Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The “*grep –w “pattern” **” command is used to ***print*** the ***lines, along with the corresponding file names***, ***that contain*** the provided ***entire string from all*** the ***files present*** in the ***current directory***.



- The “*^” **Regular Expression pattern specifies*** the ***start of a line***. The “*grep “^pattern” fileName*” command is used to ***print*** the ***lines which start with*** the provided ***string pattern in*** the ***file*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep "^This" firstTextFile.txt
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This    is    Line8
This    is    Lin    9This    is    Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The “*grep “^pattern” fileName1 fileName2 fileName3 ….*” command is used to ***print*** the ***lines which start with*** the provided ***string pattern, along with the corresponding file names***, ***from*** the ***list of files*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep "^This" firstTextFile.txt secondTextFile.txt thirdTextFile.txt do
c1 doc2
firstTextFile.txt:This is Line1
firstTextFile.txt:This is Line2
firstTextFile.txt:This is Line3
firstTextFile.txt:This is Line5
firstTextFile.txt:This is Line6
firstTextFile.txt:This is Line7
firstTextFile.txt:This    is    Line8
firstTextFile.txt:This    is    Lin    9This    is    Line10
doc1:This is the Doc1 file
doc1:This is the second line
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep "^pattern" **"* command is used to *print* the *lines which start with* the provided *string pattern, along with the corresponding file names*, *from all* the *files present* in the *current directory*.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep "^This" *
doc1:This is the Doc1 file
doc1:This is the second line
file1.pdf:This is the content of file1.pdf
file2.doc:This is the content of file2.doc
file2.doc:This is the content of file3.docx
file2.doc:This is the content of file1.pdf
file3.docx:This is the content of file3.docx
firstTextFile.txt:This is Line1
firstTextFile.txt:This is Line2
firstTextFile.txt:This is Line3
firstTextFile.txt:This is Line5
firstTextFile.txt:This is Line6
firstTextFile.txt:This is Line7
firstTextFile.txt:This    is    Line8
firstTextFile.txt:This    is    Lin    9This    is    Line10
newOutputTextFile.txt:This is Line1
newOutputTextFile.txt:This is Line2
newOutputTextFile.txt:This is Line3
newOutputTextFile.txt:This is Line5
newOutputTextFile.txt:This is Line6
newOutputTextFile.txt:This is Line7
newOutputTextFile.txt:This    is    Line8
newOutputTextFile.txt:This    is    Lin    9This    is    Line10
newOutputTextFile.txt:This is Line1
newOutputTextFile.txt:This is Line2
newOutputTextFile.txt:This is Line3
newOutputTextFile.txt:This is Line5
newOutputTextFile.txt:This is Line6
newOutputTextFile.txt:This is Line7
```

- The "*$" **Regular Expression pattern specifies* the *end of a line*. The "*grep "pattern$" fileName*" command is used to *print* the *lines which end with* the provided *string pattern in* the *file* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep "line$" doc1
This is the second line
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep "pattern$" fileName1 fileName2 fileName3 ....*" command is used to *print* the *lines which end with* the provided *string pattern, along with the corresponding file names*, *from* the *list of files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep "Line2$" firstTextFile.txt secondTextFile.txt thirdTextfile.txt
firstTextFile.txt:This is Line2
secondTextFile.txt:Line2
grep: thirdTextfile.txt: No such file or directory
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "***grep "pattern$" ****" command is used to ***print*** the ***lines which end with*** the provided ***string pattern, along with the corresponding file names***, ***from all*** the ***files present*** in the ***current directory***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep "Line4$" *
newOutputTextFile.txt:Line4
newOutputTextFile.txt:My Line4
newOutputTextFile.txt:Line4
newOutputTextFile.txt:My Line4
outputTextFile.txt:Line4
outputTextFile.txt:My Line4
secondTextFile.txt:Line4
thirdTextFile.txt:My Line4
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "***grep***" command ***supports recursive search***. ***It*** can ***search in all files*** and ***directories recursively***. ***To perform a recursive search***, the "***grep –r "pattern" directoryName***" command is ***used***. This command will ***print*** the ***lines that match*** the provided ***string pattern, along with the corresponding file names with each file's respective relative directory path***, ***from all*** the ***files present*** in the mentioned ***directory***, and, ***its subdirectories***.
  If this option is used, "***grep***" ***first searches all*** the ***files of*** the ***specified directory***. ***If*** the ***specified directory contains other directories***, this command also ***searches those directories and all of*** the ***corresponding subdirectories*** as well.

```
oindrila@DESKTOP-TKR9FDM: ~
oindrila@DESKTOP-TKR9FDM:~$ grep -r "is" testDir2
testDir2/nestTestDir2/doc1:This is the Doc1 file
testDir2/nestTestDir2/doc1:This is the second line
testDir2/nestTestDir2/file1.pdf:This is the content of file1.pdf
testDir2/nestTestDir2/file2.doc:This is the content of file2.doc
testDir2/nestTestDir2/file2.doc:This is the content of file3.docx
testDir2/nestTestDir2/file2.doc:This is the content of file1.pdf
testDir2/nestTestDir2/file3.docx:This is the content of file3.docx
testDir2/nestTestDir2/firstTextFile.txt:This is Line1
testDir2/nestTestDir2/firstTextFile.txt:This is Line2
testDir2/nestTestDir2/firstTextFile.txt:This is Line3
testDir2/nestTestDir2/firstTextFile.txt:This is Line5
testDir2/nestTestDir2/firstTextFile.txt:This is Line6
testDir2/nestTestDir2/firstTextFile.txt:This is Line7
testDir2/nestTestDir2/firstTextFile.txt:This    is    Line8
testDir2/nestTestDir2/firstTextFile.txt:This    is    Lin    9This    is    Line10
testDir2/nestTestDir2/newDoc1:firstTextFile.txt:This is Line2
testDir2/nestTestDir2/newDoc1:newOutputTextFile.txt:This is Line2
testDir2/nestTestDir2/newDoc1:newOutputTextFile.txt:This is Line2
testDir2/nestTestDir2/newDoc1:outputTextFile.txt:This is Line2
testDir2/nestTestDir2/newOutputTextFile.txt:This is Line1
testDir2/nestTestDir2/newOutputTextFile.txt:This is Line2
testDir2/nestTestDir2/newOutputTextFile.txt:This is Line3
testDir2/nestTestDir2/newOutputTextFile.txt:This is Line5
testDir2/nestTestDir2/newOutputTextFile.txt:This is Line6
testDir2/nestTestDir2/newOutputTextFile.txt:This is Line7
testDir2/nestTestDir2/newOutputTextFile.txt:This    is    Line8
testDir2/nestTestDir2/newOutputTextFile.txt:This    is    Lin    9This    is    Line10
testDir2/nestTestDir2/newOutputTextFile.txt:This is Line1
testDir2/nestTestDir2/newOutputTextFile.txt:This is Line2
```

- The "*grep –B number "pattern" fileName*" command is used to *print* the *specified number of lines*, *specified using* the *option* "*number*", *which comes before the lines that match with* the provided *string pattern in* the *file* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -B 2 "Line3" firstTextFile.txt
This is Line1
This is Line2
This is Line3
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –B number "pattern" fileName1 fileName2 fileName3 ….*" command is used to *print* the *specified number of lines*, *specified using* the *option* "*number*", *which comes before the lines that match with* the provided *string pattern in* the *list of files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -B 2 "Line3" firstTextFile.txt secondTextFile.txt outputTextFile.
txt
firstTextFile.txt-This is Line1
firstTextFile.txt-This is Line2
firstTextFile.txt:This is Line3
--
secondTextFile.txt-Line1
secondTextFile.txt-Line2
secondTextFile.txt:Line3
--
outputTextFile.txt-This is Line1
outputTextFile.txt-This is Line2
outputTextFile.txt:This is Line3
--
outputTextFile.txt-Line1
outputTextFile.txt-Line2
outputTextFile.txt:Line3
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –B number "pattern" **](*" command is used to *print* the *specified number of lines*, *specified using* the *option* "*number*", *which comes before the lines that match with* the provided *string pattern in all* the *files* present in the *current directory*.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -B 2 "Line3" *
firstTextFile.txt-This is Line1
firstTextFile.txt-This is Line2
firstTextFile.txt:This is Line3
--
newOutputTextFile.txt-This is Line1
newOutputTextFile.txt-This is Line2
newOutputTextFile.txt:This is Line3
--
newOutputTextFile.txt-Line1
newOutputTextFile.txt-Line2
newOutputTextFile.txt:Line3
--
newOutputTextFile.txt-This is Line1
newOutputTextFile.txt-This is Line2
newOutputTextFile.txt:This is Line3
--
newOutputTextFile.txt-Line1
newOutputTextFile.txt-Line2
newOutputTextFile.txt:Line3
--
outputTextFile.txt-This is Line1
outputTextFile.txt-This is Line2
outputTextFile.txt:This is Line3
--
outputTextFile.txt-Line1
outputTextFile.txt-Line2
outputTextFile.txt:Line3
--
secondTextFile.txt-Line1
```

```
secondTextFile.txt-Line2
secondTextFile.txt:Line3
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –A number "pattern" fileName*" command is used to ***print*** the ***specified number of lines***, ***specified using*** the ***option*** "***number***", ***which comes after the lines that match with*** the provided ***string pattern in*** the ***file*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -A 2 "Line5" firstTextFile.txt
This is Line5
This is Line6
This is Line7
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –A number "pattern" fileName1 fileName2 fileName3 ….*" command is used to ***print*** the ***specified number of lines***, ***specified using*** the ***option*** "***number***", ***which comes after the lines that match with*** the provided ***string pattern in*** the ***list of files*** mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -A 2 "Line5" firstTextFile.txt secondTextFile.txt outputTextFile.
txt
firstTextFile.txt:This is Line5
firstTextFile.txt-This is Line6
firstTextFile.txt-This is Line7
--
outputTextFile.txt:This is Line5
outputTextFile.txt-This is Line6
outputTextFile.txt-This is Line7
--
outputTextFile.txt:My Line5
outputTextFile.txt-
outputTextFile.txt-My Line6
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –A number "pattern" **](*" command is used to ***print*** the ***specified number of lines***, ***specified using*** the ***option*** "***number***", ***which comes after the lines that match with*** the provided ***string pattern in all*** the ***files*** present in the ***current directory***.

```
oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -A 2 "Line5" *
firstTextFile.txt:This is Line5
firstTextFile.txt-This is Line6
firstTextFile.txt-This is Line7
--
newDoc1:newOutputTextFile.txt:My Line5
newDoc1-newOutputTextFile.txt:My Line6
newDoc1-newOutputTextFile.txt:My Line7
--
newDoc1:newOutputTextFile.txt:My Line5
newDoc1-newOutputTextFile.txt:My Line6
newDoc1-newOutputTextFile.txt:My Line7
--
newDoc1:outputTextFile.txt:My Line5
newDoc1-outputTextFile.txt:My Line6
newDoc1-outputTextFile.txt:My Line7
--
newDoc1:thirdTextFile.txt:My Line5
newDoc1-thirdTextFile.txt:My Line6
newDoc1-thirdTextFile.txt:My Line7
--
newOutputTextFile.txt:This is Line5
newOutputTextFile.txt-This is Line6
newOutputTextFile.txt-This is Line7
--
newOutputTextFile.txt:My Line5
newOutputTextFile.txt-
newOutputTextFile.txt-My Line6
--
newOutputTextFile.txt:This is Line5
```

```
newOutputTextFile.txt-This is Line6
newOutputTextFile.txt-This is Line7
--
newOutputTextFile.txt:My Line5
newOutputTextFile.txt-
newOutputTextFile.txt-My Line6
--
outputTextFile.txt:This is Line5
outputTextFile.txt-This is Line6
outputTextFile.txt-This is Line7
--
outputTextFile.txt:My Line5
outputTextFile.txt-
outputTextFile.txt-My Line6
--
thirdTextFile.txt:My Line5
thirdTextFile.txt-
thirdTextFile.txt-My Line6
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –B beforeNumber –A afterNumber "pattern" fileName*" command is used to *print* the *specified number of lines*, *specified using* the *option* "*beforeNumber*", *which comes before*, as well as, the *specified number of lines*, *specified using* the *option* "*afterNumber*", *which comes after the lines that match with* the provided *string pattern in* the *file* mentioned in the command.

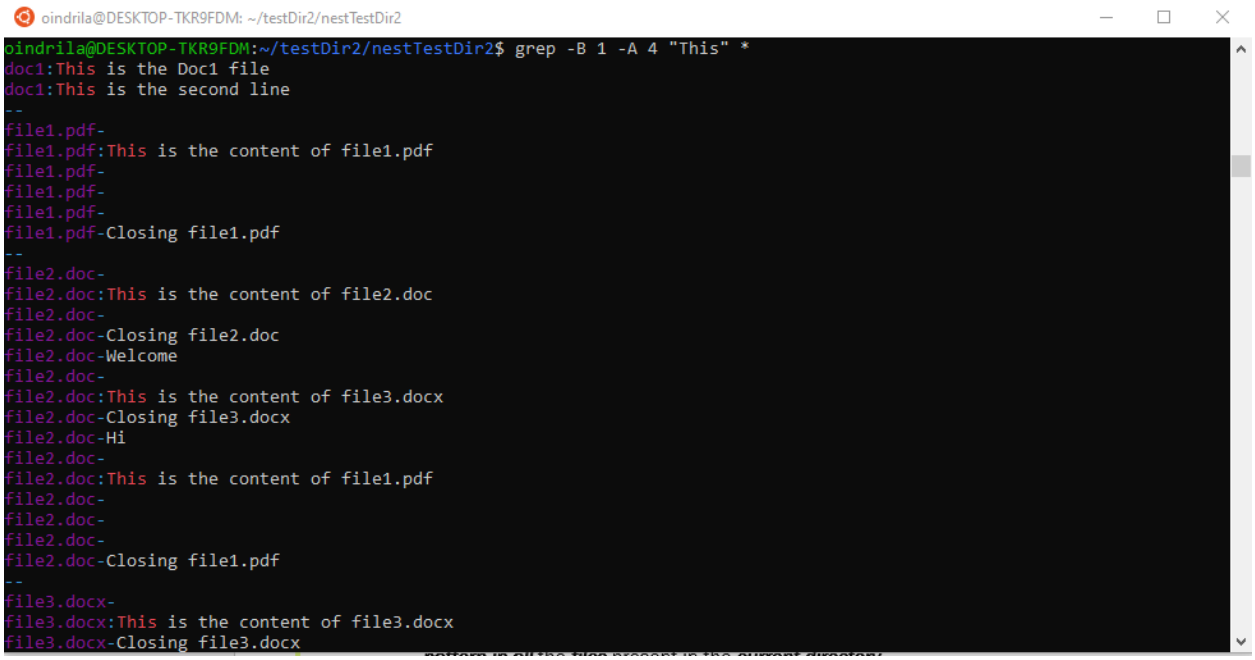
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -B 1 -A 3 "Line2" firstTextFile.txt
This is Line1
This is Line2
This is Line3

This is Line5
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –B beforeNumber –A afterNumber "pattern" fileName1 fileName2 fileName3 ....*" command is used to *print* the *specified number of lines*, *specified using* the *option* "*beforeNumber*", *which comes before*, as well as, the *specified number of lines*, *specified using* the *option* "*afterNumber*", *which comes after the lines that match with* the provided *string pattern in* the *list of files* mentioned in the command.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -B 1 -A 4 "Line2" firstTextFile.txt secondTextFile.txt
firstTextFile.txt-This is Line1
firstTextFile.txt:This is Line2
firstTextFile.txt-This is Line3
firstTextFile.txt-
firstTextFile.txt-This is Line5
firstTextFile.txt-This is Line6
--
secondTextFile.txt-Line1
secondTextFile.txt:Line2
secondTextFile.txt-Line3
secondTextFile.txt-Line4
secondTextFile.txt-
secondTextFile.txt-Line6
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –B beforeNumber –A afterNumber "pattern" *****" command is used to *print* the *specified number of lines*, *specified using* the *option* "*beforeNumber*", *which comes before*, as well as, the *specified number of lines*, *specified using* the *option*

"*afterNumber*", *which comes after the lines that match with* the provided *string pattern in all* the *files* present in the *current directory*.



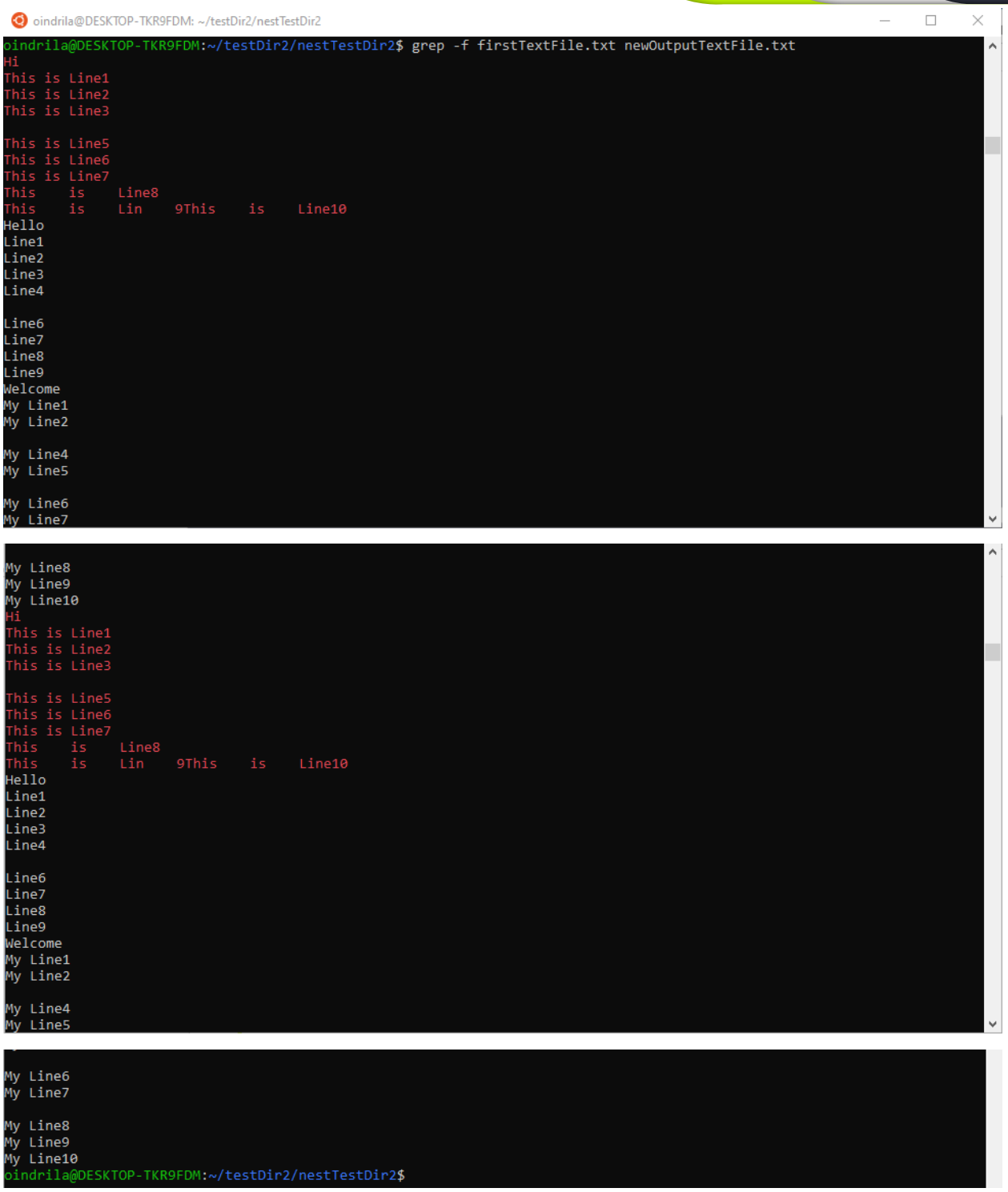
If there is *no line before*, *or*, *after* the *line that matches with* the provided *string pattern in any file*, then, *no line is printed*.

- The command "*ls | grep "fileNamePattern"*", or, "*ls –l | grep "fileNamePattern"*" is *used to search files*, *or*, *directories having name that contain* the *specified pattern*, *in* the *current directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls | grep "outputText"
outputTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l | grep "Text"
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The "*grep –f filename toSearchFileName*" command is used to *highlight only* those *lines of* the *file* "*filename*" *in* the *file* "*toSearchFileName*" *that match* the provided *string pattern*.


oindrila@DESKTOP-TKR9FDM: ~/testDir2/nestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ grep -f firstTextFile.txt newOutputTextFile.txt
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
My Line8
My Line9
My Line10
Hi
This is Line1
This is Line2
This is Line3
This is Line5
This is Line6
This is Line7
This is Line8
This is Lin 9This is Line10
Hello
Line1
Line2
Line3
Line4
Line6
Line7
Line8
Line9
Welcome
My Line1
My Line2
My Line4
My Line5
My Line6
My Line7
My Line8
My Line9
My Line10
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$

chmod

- The "***chmod***" command is ***used to change*** the ***access mode of a file***. The ***syntax*** of this command is – "***chmod [user class] [permission operator] [mode] filename1 fileName2 fileName3 ...***"
- ***User Class*** –

User Class	*Class*	*Description*
u	Owner	File's owner
g	Group	Users, who are members of the file's group
o	Others	Users, who are neither the file's owner, nor, members of the file's group
a	All	All three of the above, same as "ugo"

- ***Permission Operator*** – The ***Permission Operator*** is ***used to specify how*** the ***modes of a file should be adjusted***. ***Putting blank spaces around*** the ***Permission Operator*** would ***make*** the ***command fail***.

Permission Operator	*Description*
+	Adds the specified modes to the specified User Classes
-	Removes the specified modes from the specified User Classes
=	The modes specified are to be made the exact modes for the specified User Classes

- ***Permission Mode*** – The ***Permission Modes*** indicate which ***permissions are to be granted*** or ***removed from*** the ***specified User Classes***. There are ***three basic Permission Modes*** -

Permission Mode	*Description*
r	Permission to read the file
w	Permission to write, or, delete the file
x	Permission to execute the file. In case of a directory, permission to search in it.

- ***To see*** the ***Permissions of different files***, "***ls –l***" command is ***used***, ***which lists*** the ***files in*** the ***working directory in long format***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 8
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
drwxrwxrwx 1 oindrila oindrila 4096 Jun 12 21:26 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The *first character in* the *first column represents* the *type of* the *file*, i.e., *whether it is* a *normal file*, *or*, a *directory*.
  "*d*" *represents* a *directory*.

```
drwxrwxrwx 1 oindrila oindrila 4096 Jun 12 21:26 subNestTestDir2
```

  "-" represents a *normal file*.

```
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
```

- The *first set of three characters*, *after* the *file type*, *in* the *first column represents* the *permissions assigned to* the *owner of* the *file*.

```
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
```

  Here, *for* the *file* "*firstTextFile.txt*", the *owner's permissions are* – "*rw-*", which means that, the *owner has read* (*r*), and, *write* (*w*) *access*.
- The *third column for* the *file* "*firstTextFile.txt*" *represents* the *name of* the *owner of* the *file*.
- The *fourth column for* the *file* "*firstTextFile.txt*" *represents* the *name of* the *group to which* the *owner of* the *file belongs to*.
- The *second set of three characters*, *after* the *owner's permission*, *in* the *first column represents* the *permissions assigned to* the *group to which* the *owner of* the *file belongs to*.

Here, *for* the *file* "*firstTextFile.txt*", the *group's permissions are* – "*rw-*", which means that, the *group to which* the *owner belongs to has read* (*r*), and, *write* (*w*) *access*. That means, *other users of* the *group cannot execute* (*x*) the *file* "*firstTextFile.txt*", but can *read* (*r*), and, *write* (*w*) to it.

- The *last set of three characters*, *after* the *group's permission*, *in* the *first column represents* the *permissions assigned to users*, *who are neither* the *owner of* the *file*, *nor* the *members of* the *group to which* the *owner of* the *file belongs to*.
  Here, *for* the *file* "*firstTextFile.txt*", the *other users' permissions are* – "*rw-*", which means that, the *other users has read* (*r*), and, *write* (*w*) *access*. That means, *other users*, *who do not belong to* the *group to which* the *owner of* the *file belongs to*, *cannot execute* (*x*) the *file* "*firstTextFile.txt*", but can *read* (*r*), and, *write* (*w*) to it.

- The *owner's permission of* the *file* "*newDoc1*" is "*rw-*".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 22:10 newDoc1
```

To change the *permission of* the *file* "*newDoc1*", *so that* the *owner of* the *file neither can write* (*w*) to it, *nor*, *can execute* (*x*) it *but only can read* (*r*) it, the "*chmod u-w-x newDoc1*" command is *used*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u-w-x newDoc1
```

The *accordingly changed permissions of* the *file* "*newDoc1*" *can be displayed using* the "*ls –l*" command –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-r--rw-rw- 1 oindrila oindrila 1417 Jun 12 22:10 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=rwx,g=rwx,o=rwx subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drwxrwxrwx 1 oindrila oindrila 4096 Jun 12 23:37 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *read* (*r*), and, *write* (*w*). *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *read* (*r*), and, *write* (*w*). Also, *permission of* the *other users of* the *file* "*newDoc1*" is *read* (*r*), and, *write* (*w*).

In this case, the *user can delete* the *file* "*newDoc1*" *from inside* the *directory* "*subNestTestDir2*".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u=rw,g=rw,o=rw newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 23:37 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ rm newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 0
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=rwx,g=rwx,o=rwx subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drwxrwxrwx 1 oindrila oindrila 4096 Jun 12 23:37 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *read* (*r*), and, *execute* (*x*). *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *also only read* (*r*), and, *execute* (*x*). *Permission of* the *other users of* the *file* "*newDoc1*" is *also only read* (*r*), and, *execute* (*x*).

In this case also, the *user can delete* the *file* "*newDoc1*" *from inside* the *directory* "*subNestTestDir2*".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u=rx,g=rx,o=rx newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-r-xr-xr-x 1 oindrila oindrila 1417 Jun 13 00:32 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ rm newDoc1
rm: remove write-protected regular file 'newDoc1'? y
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 0
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=rwx,g=rwx,o=rwx subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drwxrwxrwx 1 oindrila oindrila 4096 Jun 12 23:37 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *only read* (*r*). *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *also only read* (*r*). *Permission of* the *other users of* the *file* "*newDoc1*" is *also only read* (*r*).

In this case also, the *user can delete* the *file* "*newDoc1*" *from inside* the *directory* "*subNestTestDir2*".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u=r,g=r,o=r newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-r--r--r-- 1 oindrila oindrila 1417 Jun 13 00:38 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ rm newDoc1
rm: remove write-protected regular file 'newDoc1'? y
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 0
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=rwx,g=rwx,o=rwx subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drwxrwxrwx 1 oindrila oindrila 4096 Jun 12 23:37 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *only execute* (*x*). *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *only execute* (*x*). *Permission of* the *other users of* the *file* "*newDoc1*" is *also only execute* (*x*).

In this case also, the *user can delete* the *file* "*newDoc1*" *from inside* the *directory* "*subNestTestDir2*".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u=x,g=x,o=x newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
---x--x--x 1 oindrila oindrila 1417 Jun 13 00:42 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ rm newDoc1
rm: remove write-protected regular file 'newDoc1'? y
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 0
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *all*, i.e., *read* (*r*), *write* (*w*) and *execute* (*x*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=rwx,g=rwx,o=rwx subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drwxrwxrwx 1 oindrila oindrila 4096 Jun 12 23:37 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *other users of* the *file* "*newDoc1*" is *also none*.

In this case also, the *user can delete* the *file* "*newDoc1*" *from inside* the *directory* "*subNestTestDir2*".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u=,g=,o= newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
---------- 1 oindrila oindrila 1417 Jun 13 00:46 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ rm newDoc1
rm: remove write-protected regular file 'newDoc1'? y
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 0
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *read* (*r*), and, *execute* (*x*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *read* (*r*), and, *execute* (*x*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *read* (*r*), and, *execute* (*x*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=rx,g=rx,o=rx subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
dr-xr-xr-x 1 oindrila oindrila 4096 Jun 13 00:46 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *other users of* the *file* "*newDoc1*" is *also none*.

In this case, the *user cannot delete* the *file* "*newDoc1*" *from inside* the *directory* "*subNestTestDir2*".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u=,g=,o= newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
---------- 1 oindrila oindrila 1417 Jun 13 00:58 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ rm newDoc1
rm: remove write-protected regular file 'newDoc1'? y
rm: cannot remove 'newDoc1': Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *only read* (*r*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *only read* (*r*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *only read* (*r*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=r,g=r,o=r subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
dr--r--r-- 1 oindrila oindrila 4096 Jun 13 00:58 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *other users of* the *file* "*newDoc1*" is *also none*.

In this case, the *user cannot open* the *directory* "*subNestTestDir2*". Hence, *deletion of* the *file* "*newDoc1*" *inside it is not possible*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cd subNestTestDir2
-bash: cd: subNestTestDir2: Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *only execute* (*x*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *only execute* (*x*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *only execute* (*x*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=x,g=x,o=x subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
d--x--x--x 1 oindrila oindrila 4096 Jun 13 00:58 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *other users of* the *file* "*newDoc1*" is *also none*.

In this case, the *user cannot delete* the *file* "*newDoc1*" *from inside* the *directory* "*subNestTestDir2*".

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u=,g=,o= newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
ls: cannot open directory '.': Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ rm newDoc1
rm: remove write-protected regular file 'newDoc1'? y
rm: cannot remove 'newDoc1': Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *only write* (*w*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *only write* (*w*). Also, *permission of* the *other users of* the *directory* "*subNestTestDir2*" is *only write* (*w*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=w,g=w,o=w subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
d-w--w--w- 1 oindrila oindrila 4096 Jun 13 00:58 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *other users of* the *file* "*newDoc1*" is *also none*.

In this case, the *user cannot open* the *directory* "*subNestTestDir2*". Hence, *deletion of* the *file* "*newDoc1*" *inside it is not possible*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cd subNestTestDir2
-bash: cd: subNestTestDir2: Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *write* (*w*), and, *execute* (*x*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *write* (*w*), and, *execute* (*x*). *Permission of* the *other users of* the *directory* "*subNestTestDir2*" is *write* (*w*), and, *execute* (*x*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=wx,g=wx,o=wx subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
d-wx-wx-wx 1 oindrila oindrila 4096 Jun 13 00:58 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *other users of* the *file* "*newDoc1*" is *none*.

In this case, the *user can delete* the *file* "*newDoc1*" *from inside* the *directory* "*subNestTestDir2*. *But* the *user cannot list* the *contents of* the *directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod u=,g=,o= newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
ls: cannot open directory '.': Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ rm newDoc1
rm: remove write-protected regular file 'newDoc1'? y
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
ls: cannot open directory '.': Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- Now, *permission of* the *owner of* the *directory* "*subNestTestDir2*" is *read* (*r*), and, *write* (*w*). *Permission of* the *group to which* the *owner of* the *directory* "*subNestTestDir2*" is *read* (*r*), and, *write* (*w*). *Permission of* the *other users of* the *directory* "*subNestTestDir2*" is *read* (*r*), and, *write* (*w*).

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ chmod u=rw,g=rw,o=rw subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rw-rw-rw- 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rw-rw-rw- 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rw-rw-rw- 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rw-rw-rw- 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rw-rw-rw- 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rw-rw-rw- 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rw-rw-rw- 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rw-rw-rw- 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rw-rw-rw- 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drw-rw-rw- 1 oindrila oindrila 4096 Jun 13 01:27 subNestTestDir2
-rw-rw-rw- 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Inside this *directory* "*subNestTestDir2*", there is a *file* "*newDoc1*". Now, *permission of* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *group to which* the *owner of* the *file* "*newDoc1*" is *none*. *Permission of* the *other users of* the *file* "*newDoc1*" is *none*.

In this case, the *user cannot open* the *directory* "*subNestTestDir2*". Hence, *deletion of* the *file* "*newDoc1*" *inside it is not possible*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ cd subNestTestDir2
-bash: cd: subNestTestDir2: Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- *Numeric Method* – *When using* the *Numeric Method*, *permissions for all* the *three User Classes* (*owner*, *group*, and, *other users*) *can be set at* the *same time*. The *syntax* of this command *using Numeric Method* is – "*chmod [options] [number] filename1 fileName2 fileName3 ...*". The "*[number]*" *can be a 3-digits*, or, *4-digits number*.
  When 3-digits number is used, the *first digit represents* the *permission assigned to* the *owner of* the *file*, the *second digit represents* the *permission assigned to* the *group to which* the *owner of* the *file belongs to*, and, the *third digit represents* the *permission assigned to* the *users*, *who are neither* the *owner of* the *file*, *nor* the *members of* the *group to which* the *owner of* the *file belongs to*.
  "*Read*", "*Write*", and, "*Execute*" *permissions have* the *following number value* –
  - *Read* (*r*) = *4*
  - *Write* (*w*) = *2*
  - *Execute* (*x*) = *1*

- *No Permissions = 0*

- The *Permissions Number of a specific User Class is represented by* the *sum of* the *values of* the *permissions for that specific User Class*.
  - *For a file* "*newDoc1*", the *owner's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *group's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *other users' permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *corresponding* "*chmod*" command *would be* the *following* –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod 777 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-rwxrwxrwx 1 oindrila oindrila 1417 Jun 13 02:16 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

  - *For a file* "*newDoc1*", the *owner's permissions* would be – *read* (*r*), and, *execute* (*x*). The *group's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *other users' permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *corresponding* "*chmod*" command *would be* the *following* –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod 577 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-r-xrwxrwx 1 oindrila oindrila 1417 Jun 13 02:16 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

  - *For a file* "*newDoc1*", the *owner's permissions* would be – *read* (*r*), and, *write* (w). The *group's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *other users' permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *corresponding* "*chmod*" command *would be* the *following* –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod 677 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-rw-rwxrwx 1 oindrila oindrila 1417 Jun 13 02:16 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

  - *For a file* "*newDoc1*", the *owner's permissions* would be –*write* (*w*), and, *execute* (*x*). The *group's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *other users' permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *corresponding* "*chmod*" command *would be* the *following* –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod 377 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
--wxrwxrwx 1 oindrila oindrila 1417 Jun 13 02:16 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- *For a file* "*newDoc1*", the *owner's permissions* would be – *read* (*r*). The *group's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *other users' permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *corresponding* "*chmod*" command *would be* the *following* –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod 477 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
-r--rwxrwx 1 oindrila oindrila 1417 Jun 13 02:16 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- *For a file* "*newDoc1*", the *owner's permissions* would be –*write* (*w*). The *group's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *other users' permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *corresponding* "*chmod*" command *would be* the *following* –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod 277 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
--w-rwxrwx 1 oindrila oindrila 1417 Jun 13 02:16 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- *For a file* "*newDoc1*", the *owner's permissions* would be –*execute* (*x*). The *group's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *other users' permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *corresponding* "*chmod*" command *would be* the *following* –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod 177 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
---xrwxrwx 1 oindrila oindrila 1417 Jun 13 02:16 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

- *For a file* "*newDoc1*", the *owner's permissions* would be – *no permissions*. The *group's permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *other users' permissions* would be – *read* (*r*), *write* (*w*), and, *execute* (*x*). The *corresponding* "*chmod*" command *would be* the *following* –

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ chmod 077 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ ls -l
total 4
----rwxrwx 1 oindrila oindrila 1417 Jun 13 02:16 newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

find

- The "*find*" command *is a command line utility for traversing a file hierarchy*. It can be *used to find files* and *directories*, *based on* the *specified conditions that match* the

arguments. A *varieties of conditions can be used to find files* and *directories*, like – *permissions*, *users*, *groups*, *file type*, *date*, *size* etc.

- *Find Files, or, Directories by Names* –
  - The command "*find [directoryPath] –name fileOrDirectoryName*" is *used to find a file*, *or*, *directory by* the *specified name* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -name newDoc1
./newDoc1
./subNestTestDir2/newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, "*.*" *refers to* the *current directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~ -name newDoc1
/home/oindrila/testDir2/nestTestDir2/newDoc1
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2/newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, "*~*" *refers to* the *home directory*.

```
oindrila@DESKTOP-TKR9FDM:~$ find testDir2 -name newDoc1
testDir2/nestTestDir2/newDoc1
testDir2/nestTestDir2/subNestTestDir2/newDoc1
oindrila@DESKTOP-TKR9FDM:~$
```

Here, "*testDir2*" *refers to* a *particular directory*.

- The command "*find [directoryPath] –iname fileOrDirectoryName*" is *used to find a file*, *or*, *directory by* the *specified name case insensitively* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -iname "NEWDOC1"
./newDoc1
./subNestTestDir2/newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, "*.*" *refers to* the *current directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~ -iname "NEWDOC1"
/home/oindrila/testDir2/nestTestDir2/newDoc1
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2/newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, "*~*" *refers to* the *home directory*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~/testDir2 -iname "NEWDOC1"
/home/oindrila/testDir2/nestTestDir2/newDoc1
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2/newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, "*~/testDir2*" *refers to* a *directory*, *located under home directory*.

- *Find Contents based on Content Type (File, or, Directory)* –
  - The command "*find [directoryPath] –type f*" is *used to find all* the *files present* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -type f
./doc1
./doc2
./doc3
./doc4
./doc5
./doc6
./file1.pdf
./file2.doc
./file3.docx
./firstTextFile.txt
./newDoc1
./newOutputTextFile.txt
./outputTextFile.txt
./secondTextFile.txt
./statNestTestDir2
./subNestTestDir2/newDoc1
./subNestTestDir2/newDoc2
./thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

    Here, *all* the *files present in* the *current directory*, *and*, *in any of its sub-directories are displayed*.
  - The command "*find [directoryPath] –type f -name fileName*" is *used to find all* the *files*, *by* the *specified name*, *present* in *any directory*, *and*, *in any of its subdirectories*.

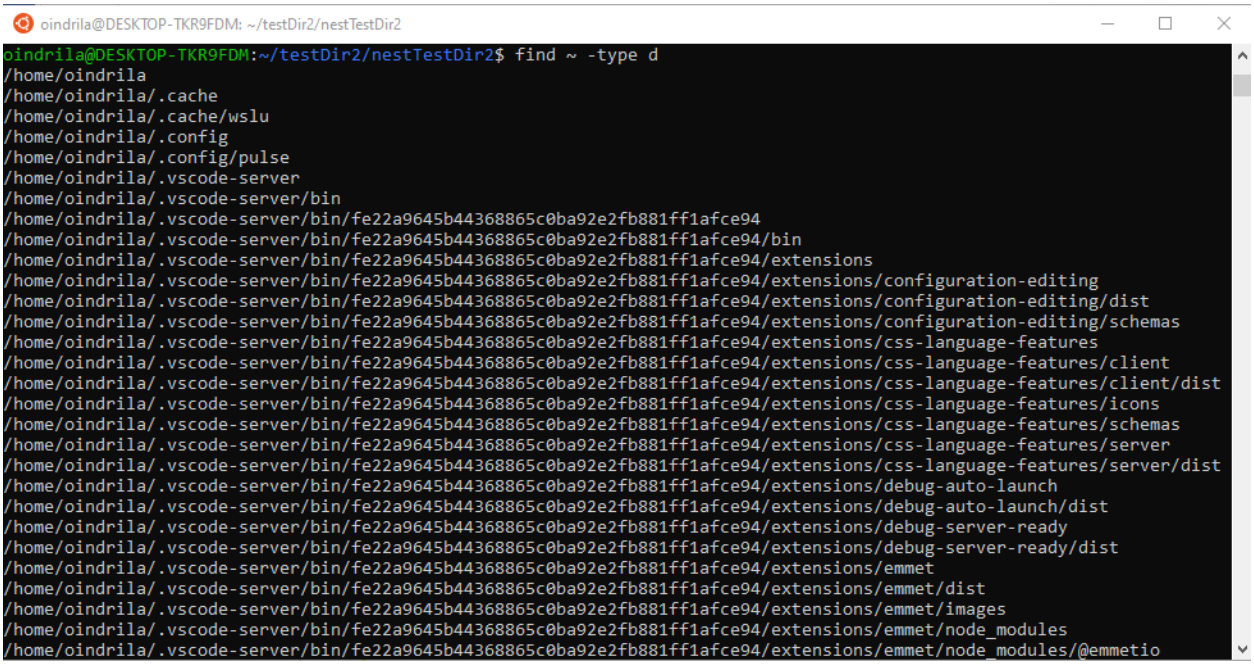
```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~/testDir2 -type f -name "newDoc1"
/home/oindrila/testDir2/nestTestDir2/newDoc1
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2/newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

    Here, the *list of files matching* the *specified name*, *present in* the *directory* "*testDir2*" under *home directory*, *and*, *in any of its sub-directories are displayed*.
  - The command "*find [directoryPath] –type f -iname fileName*" is *used to find all* the *files*, *by* the *specified name case insensitively*, *present* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~ -type f -iname "newoutputtextfile.txt"
/home/oindrila/testDir2/nestTestDir2/newOutputTextFile.txt
/home/oindrila/testDir2/newOutputTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, the ***list of files matching*** the ***specified name case insensitively***, ***present in*** the ***home directory***, ***and***, ***in any of its sub-directories are displayed***.

- The command "***find [directoryPath] –type d***" is ***used to find all*** the ***directories present*** in ***any directory***, ***and***, ***in any of its subdirectories***.



Here, ***all*** the ***directories present in*** the ***home directory***, ***and***, ***in any of its sub-directories are displayed***.

- The command "***find [directoryPath] –type d -name directoryName***" is ***used to find all*** the ***files***, ***by*** the ***specified name***, ***present*** in ***any directory***, ***and***, ***in any of its subdirectories***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~/testDir2 -type d -name "subNestTestDir2"
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

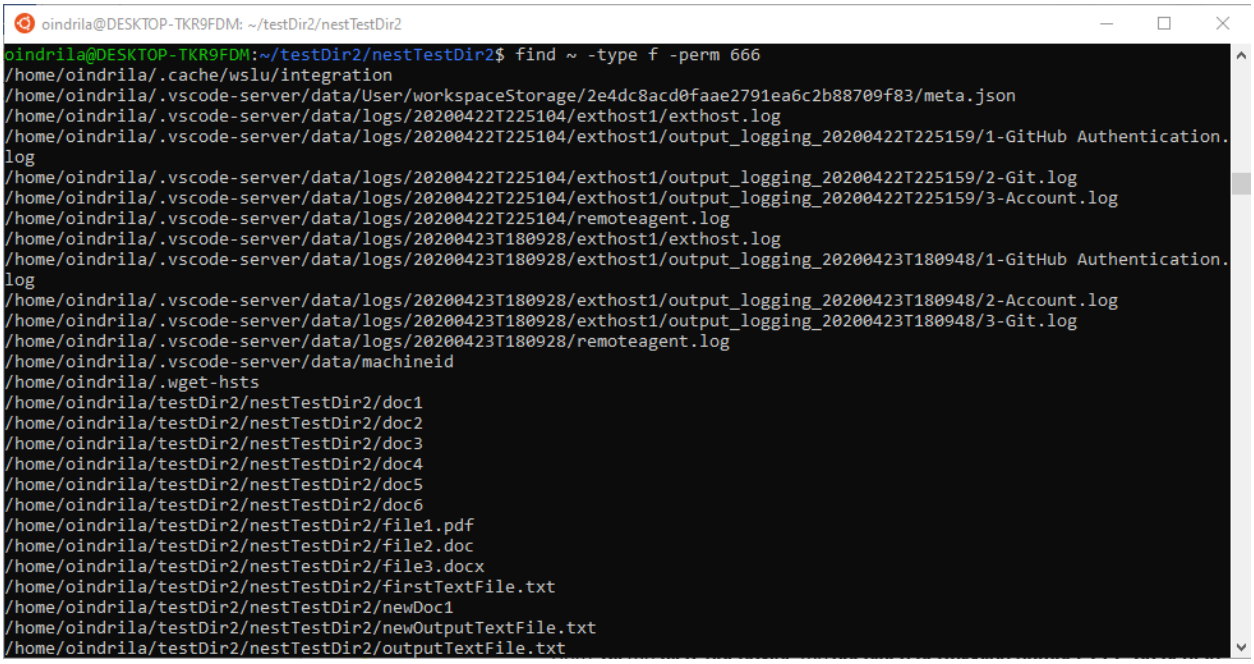
Here, the ***list of directories matching*** the ***specified name***, ***present in*** the ***directory*** "***testDir2***" under ***home directory***, ***and***, ***in any of its sub-directories are displayed***.

- The command "***find [directoryPath] –type d -iname fileName***" is ***used to find all*** the ***files***, ***by*** the ***specified name case insensitively***, ***present*** in ***any directory***, ***and***, ***in any of its subdirectories***.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~ -type d -iname "subnesttestdir2"
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, the *list of directories matching* the *specified name case insensitively*, *present in* the *home directory*, *and*, *in any of its sub-directories are displayed*.

- *Find Files based on Permissions* –
  - The command "*find [directoryPath] –type f –perm number*" is *used to find all* the *files present* in *any directory*, *and*, *in any of its subdirectories having* the *specified permission number*.



Here, *all* the *files*, *having* the *specified permission number 666*, *present in* the *home directory*, *and*, *in any of its sub-directories are displayed*.

- The command "*find [directoryPath] –type f ! –perm number*" is *used to find all* the *files present* in *any directory*, *and*, *in any of its subdirectories not having* the *specified permission number*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~/testDir2 -type f ! -perm 666
/home/oindrila/testDir2/nestTestDir2/newDoc1
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2/newDoc1
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *files*, *not having* the *specified permission number 666*, *present* in the *directory* "*testDir2*" under *home directory*, *and*, *in any of its sub-directories are displayed*.

- The command "*find [directoryPath] –type d –perm number*" is *used to find all* the *directories present* in *any directory*, *and*, *in any of its subdirectories having* the *specified permission number*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~/testDir2 -type d -perm 777
/home/oindrila/testDir2
/home/oindrila/testDir2/nestTestDir2
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *directories*, *having* the *specified permission number 777*, *present* in the *directory* "*testDir2*" under *home directory*, *and*, *in any of its sub-directories are displayed*.

- The command "*find [directoryPath] –type d –perm number*" is *used to find all* the *directories present* in *any directory*, *and*, *in any of its subdirectories not having* the *specified permission number*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$ find ~/testDir2 -type d ! -perm 777
/home/oindrila/testDir2/nestTestDir2/subNestTestDir2/subSubNestTestDir2
find: ‘/home/oindrila/testDir2/nestTestDir2/subNestTestDir2/subSubNestTestDir2’: Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2/subNestTestDir2$
```

Here, *all* the *directories*, *not having* the *specified permission number 777*, *present in* the *directory* "*testDir2*" under *home directory*, *and*, *in any of its sub-directories are displayed*.

- The command "*find [directoryPath] –type f –perm oldNumber –exec chmod newNumber {} \;*" is *used to find all* the *files present* in *any directory*, *and*, *in any of its subdirectories having* the *specified permission oldNumber*, and, *change* the *permission of those files using* the *specified permission newNumber*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~/testDir2 -type f -perm 666 -exec chmod 777 {} \;
find: ‘/home/oindrila/testDir2/nestTestDir2/subNestTestDir2/subSubNestTestDir2’: Permission denied
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rwxrwxrwx 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rwxrwxrwx 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rwxrwxrwx 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rwxrwxrwx 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rwxrwxrwx 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
---x--x--x 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rwxrwxrwx 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rwxrwxrwx 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rwxrwxrwx 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rwxrwxrwx 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drwxrwxrwx 1 oindrila oindrila 4096 Jun 13 12:36 subNestTestDir2
-rwxrwxrwx 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *files*, *having* the *specified permission number 666*, *present* in the *directory* "*testDir2*" under *home directory*, *and*, *in any of its sub-directories are*

searched, and, the *permission of those files are changed using* the *specified permission 777*.

- The command "*find [directoryPath] –type d –perm oldNumber –exec chmod newNumber {} \;*" is *used to find all* the *directories present* in *any directory*, *and*, *in any of its subdirectories having* the *specified permission oldNumber*, and, *change* the *permission of those directories using* the *specified permission newNumber*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find /home/oindrila/testDir2 -type d -perm 777 -exec chmod 755 {} \;
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 12
-rwxrwxrwx 1 oindrila oindrila   46 Jun 12 02:26 doc1
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rwxrwxrwx 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rwxrwxrwx 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rwxrwxrwx 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rwxrwxrwx 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
---x--x--x 1 oindrila oindrila 1417 Jun 12 15:02 newDoc1
-rwxrwxrwx 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rwxrwxrwx 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rwxrwxrwx 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rwxrwxrwx 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drwxr-xr-x 1 oindrila oindrila 4096 Jun 13 12:36 subNestTestDir2
-rwxrwxrwx 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *directories*, *having* the *specified permission number 777*, *present* in the *directory "/home/oindrila/testDir2"*, *and*, *in any of its sub-directories are searched*, and, the *permission of those directories are changed using* the *specified permission 755*.

- The command "*find [directoryPath] –type f –name "fileNamePattern" –exec rm -f {} \;*" is *used to find all* the *files present* in *any directory*, *and*, *in any of its subdirectories having* the *file names matching with* the *specified pattern*, and, *remove* the *files*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~ -type f -name "*1" -exec rm -f {} \;
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ ls -l
total 8
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 01:53 doc2
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 01:53 doc3
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 02:30 doc4
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 03:00 doc5
-rwxrwxrwx 1 oindrila oindrila    0 Jun 12 03:00 doc6
-rwxrwxrwx 1 oindrila oindrila   58 Jun 11 23:53 file1.pdf
-rwxrwxrwx 1 oindrila oindrila  182 Jun 11 23:54 file2.doc
-rwxrwxrwx 1 oindrila oindrila   62 Jun 11 23:49 file3.docx
-rwxrwxrwx 1 oindrila oindrila  151 Jun 11 05:20 firstTextFile.txt
-rwxrwxrwx 1 oindrila oindrila  598 Jun 11 14:44 newOutputTextFile.txt
-rwxrwxrwx 1 oindrila oindrila  299 Jun 11 05:21 outputTextFile.txt
-rwxrwxrwx 1 oindrila oindrila   55 Jun 11 04:33 secondTextFile.txt
-rwxrwxrwx 1 oindrila oindrila 1040 Jun 12 21:30 statNestTestDir2
drwxrwxrwx 1 oindrila oindrila 4096 Jun 15 01:13 subNestTestDir2
-rwxrwxrwx 1 oindrila oindrila   93 Jun 11 04:35 thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *files*, *having* the *file name ending with "1"*, *present* in the *directory home directory*, *and*, *in any of its sub-directories are searched*, and, then *deleted*.

- The command "*find [directoryPath] –type f –empty*" is *used to find all* the *empty files present* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find /home/oindrila/testDir2 -type f -empty
/home/oindrila/testDir2/nestTestDir2/doc2
/home/oindrila/testDir2/nestTestDir2/doc3
/home/oindrila/testDir2/nestTestDir2/doc4
/home/oindrila/testDir2/nestTestDir2/doc5
/home/oindrila/testDir2/nestTestDir2/doc6
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The command "*find [directoryPath] –type d –empty*" is *used to find all* the *empty directories present* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -type d -empty
./subNestTestDir2/subSubNestTestDir2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- The command "*find [directoryPath] –type f –name ".*"*" is *used to find all* the *hidden files present* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find ~ -type f -name ".*"
/home/oindrila/.bash_history
/home/oindrila/.bash_logout
/home/oindrila/.bashrc
/home/oindrila/.profile
/home/oindrila/.vscode-server/bin/fe22a9645b44368865c0ba92e2fb881ff1afce94/extensions/emmet/node_modules/jsonc-parser/.n
pmignore
/home/oindrila/.vscode-server/bin/fe22a9645b44368865c0ba92e2fb881ff1afce94/extensions/emmet/node_modules/jsonc-parser/.t
ravis.yml
/home/oindrila/.vscode-server/bin/fe22a9645b44368865c0ba92e2fb881ff1afce94/extensions/github-authentication/.gitignore
/home/oindrila/.vscode-server/bin/ff915844119ce9485abfe8aa9076ec76b5300ddd/extensions/emmet/node_modules/jsonc-parser/.n
pmignore
/home/oindrila/.vscode-server/bin/ff915844119ce9485abfe8aa9076ec76b5300ddd/extensions/emmet/node_modules/jsonc-parser/.t
ravis.yml
/home/oindrila/.vscode-server/bin/ff915844119ce9485abfe8aa9076ec76b5300ddd/extensions/github-authentication/.gitignore
/home/oindrila/.wget-hsts
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

- *Find Files based on Date and Time* –

  - The command "*find [directoryPath] –type f –mtime -numberOfDays*" is *used to find all* the *files having modified time within* the *specified number of days* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -type f -mtime -3
./doc2
./doc3
./doc4
./doc5
./doc6
./statNestTestDir2
./subNestTestDir2/newDoc2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *files*, *having* the *modified time within 2 days*, *present* in the *current directory*, *and*, *in any of its sub-directories are searched*.

- The command "*find [directoryPath] –type f –mtime numberOfDays*" is *used to find all* the *files having modified time more than*, or, *equal to* the *specified number of days* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -type f -mtime 3
./file1.pdf
./file2.doc
./file3.docx
./firstTextFile.txt
./newOutputTextFile.txt
./outputTextFile.txt
./secondTextFile.txt
./thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *files*, *having* the *modified time more than*, or, *equal to 3 days*, *present* in the *current directory*, *and*, *in any of its sub-directories are searched*.

- The command "*find [directoryPath] –type f –mmin -numberOfMinutes*" is *used to find all* the *files having modified time within* the *specified number of minutes* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -type f -mmin -60
./doc2
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *files*, *having* the *modified time within 60 minutes*, *present* in the *current directory*, *and*, *in any of its sub-directories are searched*.

- The command "*find [directoryPath] –type f –mmin numberOfMinutes*" is *used to find all* the *files having modified time more than*, or, *equal to* the *specified number of minutes* in *any directory*, *and*, *in any of its subdirectories*.

- *For*, "*access time*", *instead of* "*mtime*", "*atime*" is *used*, and, *instead of* "*mmin*", "*amin*" is *used*.
- Similarly, *for*, "*change time*", *instead of* "*mtime*", "*ctime*" is *used*, and, *instead of* "*mmin*", "*cmin*" is used.

- *Find Files based on Size* –
  - The command "*find [directoryPath] –type f –size -sizeWithSign*" is *used to find all* the *files having size within* the *specified size* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -type f -size -1000b
./doc2
./doc3
./doc4
./doc5
./doc6
./file1.pdf
./file2.doc
./file3.docx
./firstTextFile.txt
./newOutputTextFile.txt
./outputTextFile.txt
./secondTextFile.txt
./statNestTestDir2
./subNestTestDir2/newDoc2
./thirdTextFile.txt
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *files*, *having* the *having file size within*, or, *1000 byte*, *present* in the *current directory*, *and*, *in any of its sub-directories are searched*.

- The command "*find [directoryPath] –type f –size sizeWithSign*" is *used to find all* the *files having size more than* the *specified size* in *any directory*, *and*, *in any of its subdirectories*.

```
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$ find . -type f -size 0b
./doc2
./doc3
./doc4
./doc5
./doc6
oindrila@DESKTOP-TKR9FDM:~/testDir2/nestTestDir2$
```

Here, *all* the *files*, *having* the *having file size greater than*, or, *equal to 0 byte*, *present* in the *current directory*, *and*, *in any of its sub-directories are searched*.