Lab # 4

Introduction to vi editor, File links

A. Introduction to vi Editor:

A text editor is a program used to edit files that are composed of text: a letter, C program, or a system configuration file. While there are many such editors available for Linux, the only editor that you are guaranteed to find on any UNIX or Linux system is vi-- the "visual editor". Vi is not the easiest editor to use, nor is it very self-explanatory. However, because vi is so common in the UNIX/Linux world, and sometimes necessary, it deserves discussion here.

i) Opening file vi Editor
ii) Vi Commands
iii) Moving within file (Navigation)
iv) Control Commands (Scrolling)
v) Inserting and replacing text
vi) Deleting Characters lines
vii) Copy and Paste
viii) Save and Exit
ix) Search and Replace
x) Block commands (Copy, Moving and Deleting)
xi) vimtutor

i) Opening file vi Editor

```
$ vi <filename>
Example: $ vi text.txt
```

ii) vi Commands

vi Command Mode

vi interprets any characters we type as commands and thus does not display them in the window.

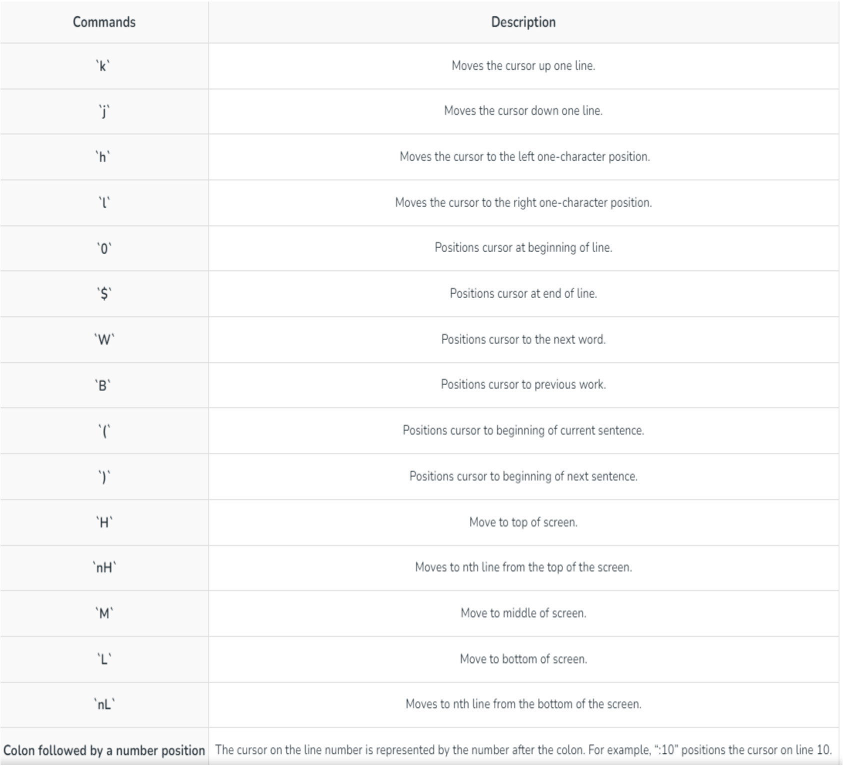
vi Insert Mode

This mode enables to insert text into the file by pressing i

vi Last Line Mode

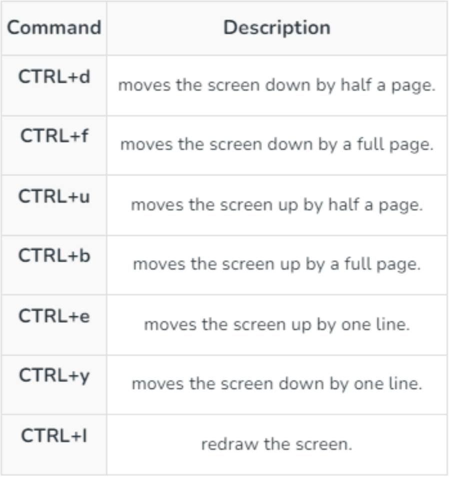
Line Mode is invoked by typing a colon [:], while vi is in Command Mode. The cursor will jump to the last line of the screen and vi will wait for a command. This mode enables you to perform tasks such as saving files and executing commands

iii) Moving within file (Navigation)



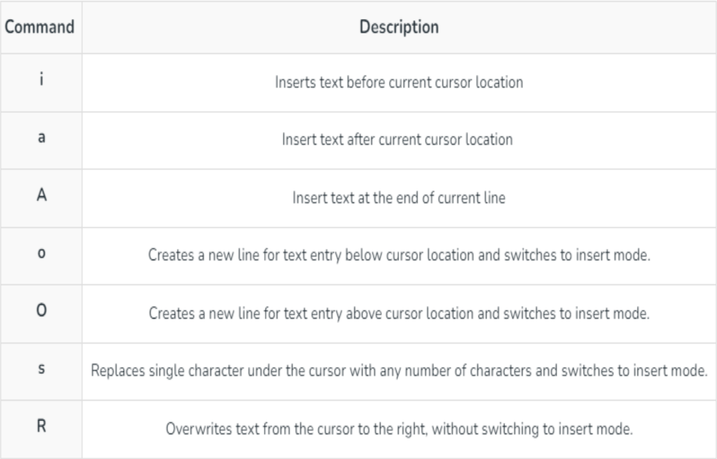
Commands	Description
`k`	Moves the cursor up one line.
`j`	Moves the cursor down one line.
`h`	Moves the cursor to the left one-character position.
`l`	Moves the cursor to the right one-character position.
`0`	Positions cursor at beginning of line.
`$`	Positions cursor at end of line.
`W`	Positions cursor to the next word.
`B`	Positions cursor to previous work.
`(`	Positions cursor to beginning of current sentence.
`)`	Positions cursor to beginning of next sentence.
`H`	Move to top of screen.
`nH`	Moves to nth line from the top of the screen.
`M`	Move to middle of screen.
`L`	Move to bottom of screen.
`nL`	Moves to nth line from the bottom of the screen.
Colon followed by a number position	The cursor on the line number is represented by the number after the colon. For example, ":10" positions the cursor on line 10.

iv) Control Commands (Scrolling)



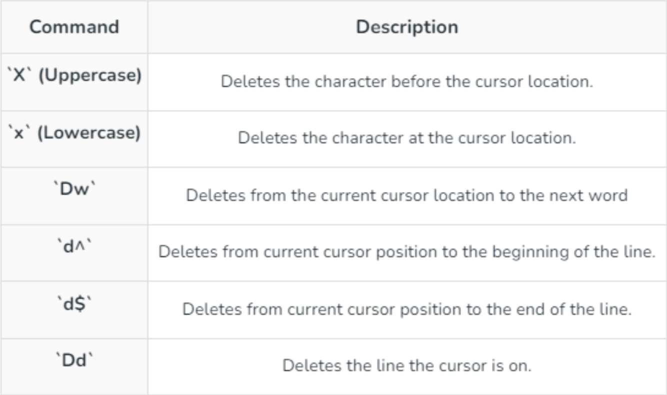
Command	Description
CTRL+d	moves the screen down by half a page.
CTRL+f	moves the screen down by a full page.
CTRL+u	moves the screen up by half a page.
CTRL+b	moves the screen up by a full page.
CTRL+e	moves the screen up by one line.
CTRL+y	moves the screen down by one line.
CTRL+l	redraw the screen.

v) Inserting and replacing text



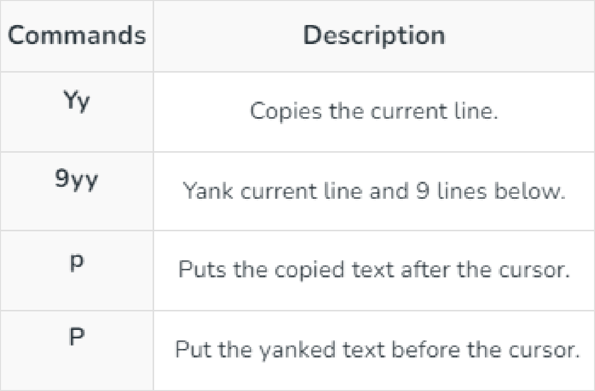
Command	Description
i	Inserts text before current cursor location
a	Insert text after current cursor location
A	Insert text at the end of current line
o	Creates a new line for text entry below cursor location and switches to insert mode.
O	Creates a new line for text entry above cursor location and switches to insert mode.
s	Replaces single character under the cursor with any number of characters and switches to insert mode.
R	Overwrites text from the cursor to the right, without switching to insert mode.

vi) Deleting Characters lines



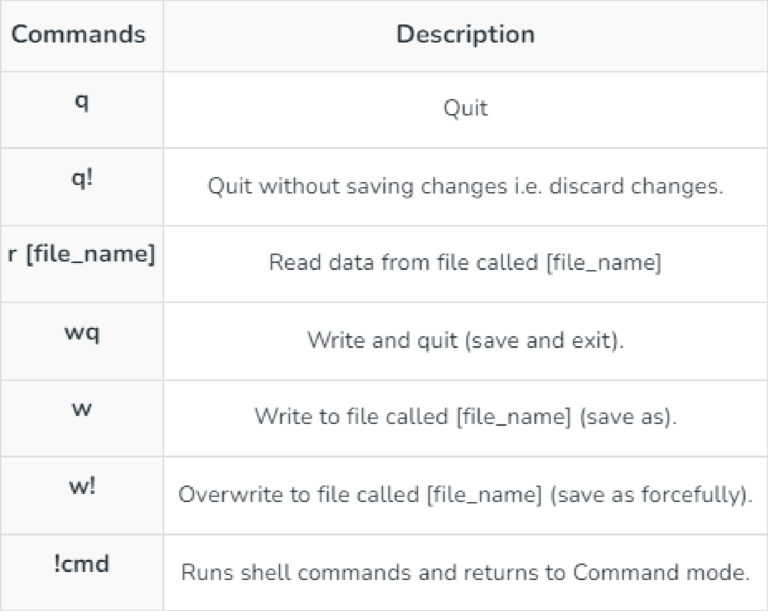
Command	Description
`X` (Uppercase)	Deletes the character before the cursor location.
`x` (Lowercase)	Deletes the character at the cursor location.
`Dw`	Deletes from the current cursor location to the next word
`d^`	Deletes from current cursor position to the beginning of the line.
`d$`	Deletes from current cursor position to the end of the line.
`Dd`	Deletes the line the cursor is on.

vii) Copy and Paste



Commands	Description
Yy	Copies the current line.
9yy	Yank current line and 9 lines below.
p	Puts the copied text after the cursor.
P	Put the yanked text before the cursor.

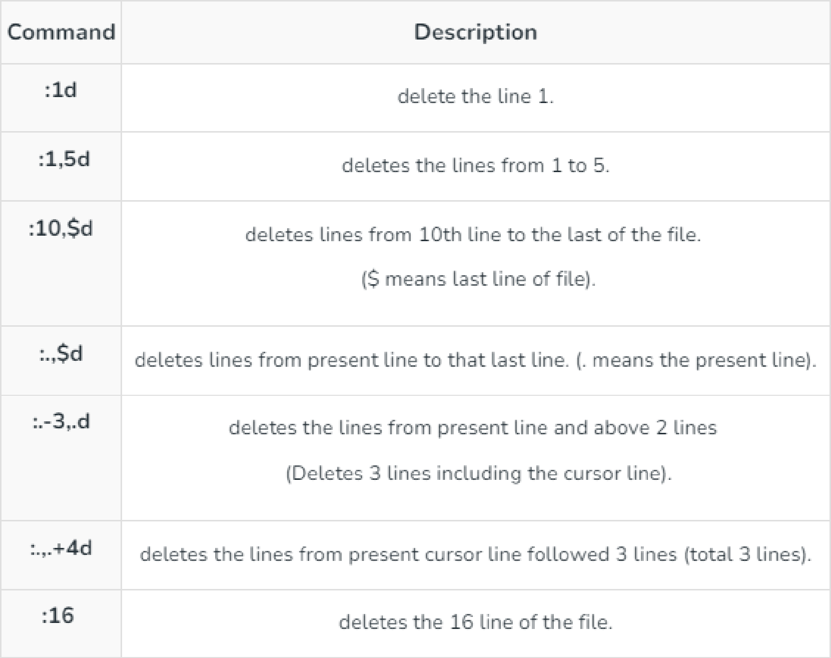
viii) Save and Exit



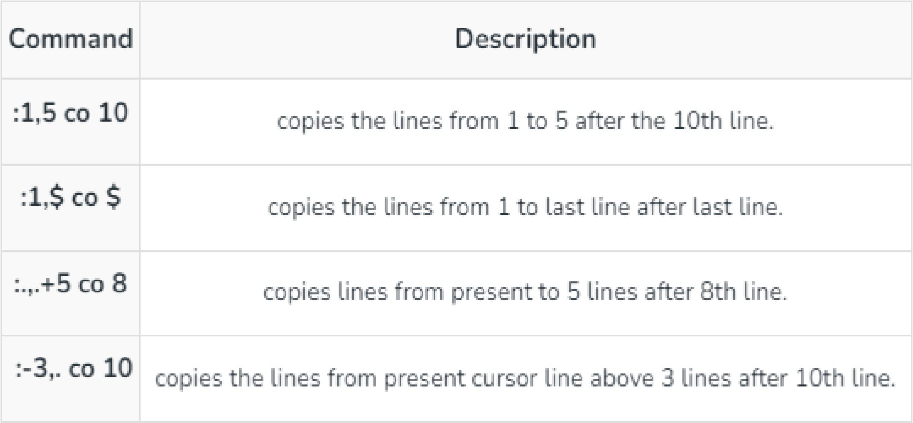
Commands	Description
q	Quit
q!	Quit without saving changes i.e. discard changes.
r [file_name]	Read data from file called [file_name]
wq	Write and quit (save and exit).
w	Write to file called [file_name] (save as).
w!	Overwrite to file called [file_name] (save as forcefully).
!cmd	Runs shell commands and returns to Command mode.

ix) Search and Replace
Search :s/<search>
Search and replace :s/<search>/<replace>/
Search and replace all :%s/<pattern>/<replace>/

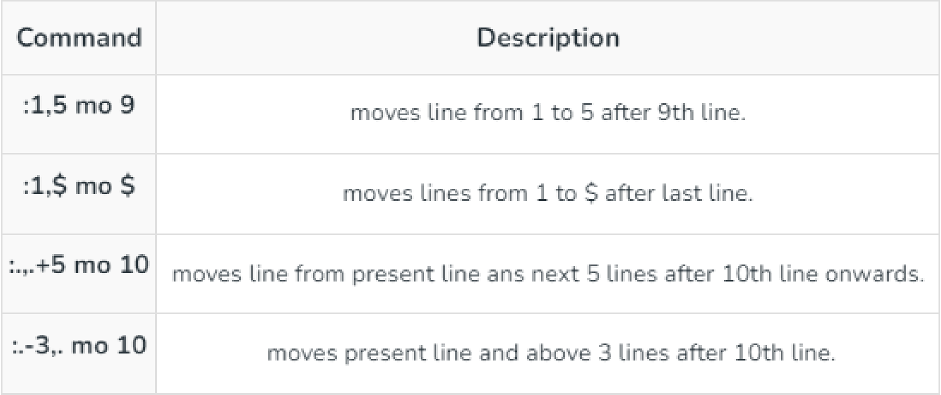
x) Block commands (Copy, Moving and Deleting)



Command	Description
:1d	delete the line 1.
:1,5d	deletes the lines from 1 to 5.
:10,$d	deletes lines from 10th line to the last of the file. ($ means last line of file).
:.,$d	deletes lines from present line to that last line. (. means the present line).
:.-3,.d	deletes the lines from present line and above 2 lines (Deletes 3 lines including the cursor line).
:.,.+4d	deletes the lines from present cursor line followed 3 lines (total 3 lines).
:16	deletes the 16 line of the file.



Command	Description
:1,5 co 10	copies the lines from 1 to 5 after the 10th line.
:1,$ co $	copies the lines from 1 to last line after last line.
:.,.+5 co 8	copies lines from present to 5 lines after 8th line.
:-3,. co 10	copies the lines from present cursor line above 3 lines after 10th line.



Command	Description
:1,5 mo 9	moves line from 1 to 5 after 9th line.
:1,$ mo $	moves lines from 1 to $ after last line.
:.,.+5 mo 10	moves line from present line ans next 5 lines after 10th line onwards.
:.-3,. mo 10	moves present line and above 3 lines after 10th line.

xi) vimtutor

```
$ vimtutor
```

B. File links:

File links are used to link file to a file

i) File to file links

$ ln <-f|-n><-s> <sourcefile> <destinationfile>

-f: replace file if it already exist

-n: does not replace file if already exist

-s: to create shortcut/softlink (if it’s not used then it will be hard link)

Example: $ ln –f testfile.txt testfile1.txt

```
$ ls lhtr
$ ln –s testfile.txt sfile1.txt
$ ls lhtr
```

ii) Directory to directory links

$ ln <-f|-n><-s> <sourcedirectory> <destinationdirectory>

-f: replace file if it already exist

-n: does not replace file if already exist
-s: to create shortcut (if it’s not used then it will be hard link)

```
Example: $ ln –f testdir testdir1
         $ ls lhtr
         $ ln –s testdir sdir
         $ ls lhtr
```

Lab Tasks

1. Create a file OSLab4.txt via vi edition. Write the following text in it
   a) vi is a screen-oriented text editor originally created for the Unix operating system.
   b) The portable subset of the behavior of vi and programs based on it, and the ex editor language supported within these programs, is described by (and thus standardized by) the Single Unix Specification and POSIX.
   c) The original code for vi was written by Bill Joy in 1976, as the visual mode for a line editor called ex that Joy had written with Chuck Haley
   d) The name "vi" is derived from the shortest unambiguous abbreviation for the ex command visual, which switchesthe ex line editor to its full-screen mode.
   e) vi is a modal editor: it operates in ei ther insert mode (where typed text becomes part of the document) or command mode (where keystrokes are interpreted as commands that control the edit session).

2. Replce the words ‘insert’ with ‘Insert’ and command with ‘Command’ in OSLab4.txt text.

3. Move second point in above text to the end of the file.

4. Explain any 5 commands via vimtutor.

5. Create a file OSLabFile4 and directory OSLabDir4 and creates its softlink sOSLabFile4 and sOSLabDir4. Give comparsions of originals with softlink

6. Create a hard link of file hOSLabFile4 and directory hOSLabDir4. Give size comparsions of originals with hardlink