

## Lab2. Text editing (vi editor)

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### Objectives :



After completing this lab, the student should be able to:

- Become familiar with the **visual (vi) editor modes**
- Use the vi editor to manipulate simple files
- Write and use **simple vi macros**



# Linux Editors

There are several text editors on Linux but one of the most commonly used is the **vi** (*others like nano*) (visual) editor which was recently upgraded to **vim** ( vi modified).

Using the **vi** editor

may seem strange at the beginning, but once you get used to it you will rarely use any of the other editors.

This editor is a default on most (if not all) Linux and UNIX based systems.

It provides the user with very powerful editing capabilities using very simple tools ( a keyboard and a simple terminal )



## Vi Modes

To get started with **vi**, you need to understand that when using this editor you are usually in **one of two modes**:

- 1- **Insert (input) mode**: which is used to type characters in a file.
- 2- **Command mode**: which is used to run commands (edit) file content

*When you first start a vi editing session*, you are in the command mode by default. To switch to insert mode you use one of the following letters:



# Vi Modes

- |    |  |
|----|--|
| i- | Insert <b>before</b> current character         |
| I- | Insert at the <b>beginning</b> of current line |
| a- | Append <b>after current</b> character          |
| A- | Append at the <b>end of current line</b>       |
| o- | Open <b>new line below current line</b>        |
| O- | Open <b>new line above current line</b>        |



To switch back to the command mode you can use the [ESC](#) ([Escape](#)) key.

## Editing A Simple File

Let us go ahead and start editing a simple file.

**Type the command:**

***vi myfirst***

Now press the letter **i** to change to insert mode and type the following (on three separate lines):

***Your full name***  
***Your student id number***  
***Your major***



## Continue commands:



To finish your vi session, you need to switch back to **command mode** (**Press ESC**).  
**Type a colon (:)**. This will move your cursor to the bottom left side of your page. This is called the **ex mode** (which is an **extension to the command mode**). To quit your file type

one of the following:

**q!** - to quit without saving recent changes

**w** - to save recent changes and not quit

**wq** - to save recent changes and quit session

try : **x** **what is the result?**

Save and quit the file and then open it again using the command: **vi myfirst**



To move around in a vi session you can use the following letters (in command mode):

**h** - move left      **j** - move down      **k** - move up      **l** - move right

Try: in command mode , used **3h, 5l, 2k, 4j**? Also try **1G, 3G\$ ,G, G\$ ??**



0 (zero)	move cursor to start of current line (the one with the cursor)
\$	move cursor to end of current line
w	move cursor to beginning of next word
b	move cursor back to beginning of preceding word
:0<Return> or 1G	move cursor to first line in file
:n<Return> or nG	move cursor to line n
:\$<Return> or G	move cursor to last line in file

# Continue

## Characters:

To delete any mistakes you make in a file use one of the following (**in command mode**):

**x** - delete current character

**#x** - delete # of characters ( e.g. 4x - deletes 4 characters starting with current)



**try 4X ??**



# Continue

## Word:

**dw** - delete current word

**#dw** - delete # of words ( e.g. 3dw - deletes 3 words starting with current word)



## Line:

**d\$ (or dd)** - what is the difference between d\$ and dd?   \*  

• **What About D? \*\***

**#dd** - delete # of lines ( e.g. 5dd - deletes 5 lines starting with current line)



*Try deleting your last name, the last number of your student id and your major line from the file myfirst.*

*\*dd: delete current line with enter line character ,but d\$ will did it  
D - delete (cut) all line from the current position till to end of line*

## Continue

The content deleted in the above commands is actually saved in the vi buffer

( like the cut command ). To be able to restore that content back you may use the commands:

**p** - paste **left or below**

**P** - paste **right or above**

If you want to copy/paste instead of cut/paste then use a y (yank) instead of a

**d(delete)** as follows:

**yw** - yank word

**#yw** - yank # words

**y\$ (or yy)** - yank line

**# yy** - yank # lines, Try 3GyGG\$p? What does this do?

- **yy** or **Y** - yank the current line, including the newline character at the end of the line
- **y\$** - yank to the end of the current line (but don't yank the newline character)



## Continue..

**To modify your file content use one of the following (in command mode):**

**r** - replace current character ( e.g. **re** changes the current character to **e**),

Try **R**, what is the difference?

**cw** - change word ( e.g. **cwnew** changes current word to **new**)

**#cw** - used to change # words with new words.

**c\$** - change line but don't change the newline character

(Note : **cc** in command mode, change all current line)

**C**: change from current position all the content of that line

**#c\$** - change # of lines with new lines.

If you decide to undo any of the changes you made to your file, use one of the following

**u** - undo last change

**U** - undo all changes in current line

**:e!** - undo all changes since last save



**Note:** Using (editing commands ) in command mode automatically switch to insert mode



## Continue



To search a file forward for a certain pattern, you use the / (slash) followed by the pattern.

For example to search for the word hello in a file you type: **/hello**. To get the next position of the pattern type **n** (next). Try **N**  
To search a file backwards use a **?** instead of a **/**.

## Vi Macros



You can create and use macros in **vi**.

To create a macro in command mode use the map command in the ex mode as follows:

**:map A 1GddGp:wq**

**:map! B ^[Gyy1GP:wq!^M**

which will create a command mode macro called **S** which when pressed will go to the first line (**1G**) cut the line (**dd**) move to the end of file (**G**) and paste the line after (**p**) and then will save file (**:w**) and quit (**q**).

To create a macro in input mode you use the **map!** command rather than map. To include control characters such as **ESC** or **ENTER** in your macro, you do the following:

**Press the ctrl key then v key then the char you want (ctrl+v, ESC char or Enter).** i.e. to include

the ESC key in my macro I press Ctrl then v then ESC and it will be saved as the control char **^]**. To undo a macro, you use the **unmap** command followed by the macro's name (e.g. **:unmap S**).

# Vi Macros



Macros will **disappear** after you exit your vi session. To make your macros **permanent**, you need to include them in a file called **.exrc** or **.vimrc** under your home directory.

Create the following macros and **put them in file .exrc under your home directory**:

**Macro 1:** called H which is an **input mode** macro that copies the last three lines of the file to the beginning of the file.

**Macro 2:** called S which is a **command mode** macro that replaces the current word with the word new.

Save the **.exrc** file and then do the following:

Create a new file called **testmacros** and fill it up with any five lines.  
open the file **testmacros** and apply your macros ( H and S) to it.

**Did they work?** \_\_\_\_\_



## More vi Practice

In the brackets, write the command(s) that you would use to do each of the following:

1. Type vi Linux
2. Change to input mode ( \_\_\_\_\_ )
3. Type the following text

Linux was first created by Linus Torvalds from Finland.  
He based it on the UNIX OS which was first created by Ken Thompson.  
Linux is open source.  
There are different Linux distributions, such as Red Hat and Ubuntu.  
Linux is a very stable and popular Operating System.  
Using Linux is fun.

- Go back to command mode ( \_\_\_\_\_ ).





- 4. Go to the beginning of the first line in the file Linux ( \_\_\_\_ )
- 5. Go to the beginning of the last line ( \_\_\_\_ ).
- 6. Go to the ninth line ( \_\_\_\_ )
- 7. Use the letters h, j, k, l, and w to move the cursor to the beginning of the word "Red" and then delete three chars. ( \_\_\_\_ )
- 8. Insert the word "Black" ( \_\_\_\_ )
- 9. Search for word open and move there ( \_\_\_\_ ).
- 10. Delete the word "open" by using a single command ( \_\_\_\_ )
- 11 Undo this last deletion ( \_\_\_\_ )
- 12 Using the search facility move your cursor to the sentence "Linux is a very stable ...". ( \_\_\_\_ ).
- 13. Using one command, change the word "is" to "was" ( \_\_\_\_ )
- 14. Move back to the first line of the file ( \_\_\_\_ )
- 15. Copy four lines into the buffer ( \_\_\_\_ )
- 16. Move to the end of the file ( \_\_\_\_ ) and put the copied lines there ( \_\_\_\_ )
- 17. Write a command mode macro called B that will save the file and quit. ( \_\_\_\_ )
- 18. Write (save) the file and quit using the macro in 17.

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- Go back to command mode ( \_\_\_\_ ).

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- 7. Use the letters h, j, k, l, and w to move the cursor to the beginning of the word "Red" and then delete three chars. ( \_\_\_\_ )
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- 11 Undo this last deletion ( \_\_\_\_ )
- 12 Using the search facility move your cursor to the sentence "Linux is a very stable ...".  
( \_\_\_\_/Linux \_\_press n\_\_\_\_ ).
- 13. Using one command, change the word "is" to "was" (move cursor to is, cw write "was" \_\_\_\_ )
- 14. Move back to the first line of the file ( \_\_\_\_ )
- 15. Copy four lines into the buffer ( \_\_\_\_ )
- 16. Move to the end of the file ( \_\_\_\_ ) and put the copied lines there ( p\_\_\_\_ )
- 17. Write a **command mode** macro called B that will save the file and quit.  
( \_\_\_\_ )
- 18. Write (save) the file and quit using the macro in 17.

