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Lab Assignment 01

EECS 678 - Introduction to Operating Systems

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1. Copying 12 lines from a given file and pasting them into three newly created files.

vim simple.c	With this command, the “simple.c” file was opened for editing in vim from terminal.
ma	In order to start the selection of the first 12 lines, the keys “ma” were pressed. Arrow keys were used to navigate the cursor down to the end of the 12 th line.
y’a	The keys pressed to end selection and yank, were “y’a”.
:split a.c	This was the next command to split the screen in half and open a new file called “a.c”. Since a.c did not already exist, it was created in the directory.
p	The key “p” was pressed to paste the 12 lines.
:wq	This command first writes the new changes to the file (w) and then quits out of it (q).
:split b.c	Similarly, b.c was created and opened for editing.
p :wq	The key “p” was pressed to paste the 12 lines. The next command wrote the changes to the file before closing it.
:split a.c p :wq	The same process was repeated for the third file. A new file named “a.c” was created with the first command; text was pasted with the second; the changes were written and the file was closed with the third.

2. Open two files for editing simultaneously, switch between editing the files and giving commands to the terminal.

vim a.c	The previously created “a.c” was opened for editing in vim through the terminal
:split b.c	The previously created “b.c” was opened in a split window in vim. Now both “a.c” and “b.c” are visible on the screen simultaneously; and the cursor is located in “b.c”.
i esc	(i) to end the “insert” mode to start making text-edits to “b.c”. When finished, (esc) to exit the “insert” mode.

ctrl + w w	“ctrl+w” can be pressed followed by “w” to switch between open files for editing. Alternately, the directional keys (h/j/k/l) can also be used to move the cursor between the open files.
:	To issue commands to the terminal the colon (:) can be used. One can save and close out of the open files with “:wq”

3. Find definition of an unknown function through multiple files and directories.

In order to enable this functionality, first a “tags” file must be present in the directory of the source file. Hence in the command line following command was typed.

```
>> ctags -R
```

This creates a file called tags. The source file was opened again with

```
>> vim Executive.c
```

An unknown function was found at the end of the file. It was not defined in the same file. To get to the definition of the function, the cursor was placed on the call to the function and the following combination of keys was pressed.

```
ctrl + ]
```

vim opened the file where the definition of the function was located with the cursor on the name of the function. After reading the definition of the method, in order to return to the previous file and location the following combination of keys was used : **ctrl + t**

4. Remove whitespace (tabs, space, newlines) from the beginning of every line in a source file.

A new sample file was created called “white_space.c” for testing.

After opening the file with vim, the following command was executed.

```
:%s/^ *//
```

This command removed all the spaces and tabs from the beginning of the lines but failed to remove newlines. To get rid of the empty lines following command was used :

```
:v\s/d
```

5. Find and replace “Bill Self” with “basketball genius Bill Self” in all lines in a file. Reformat the file to 80 characters per line.

A sample file was created for testing with more than 80 characters per line and five separate occurrences of “Bill Self”. The search is **case sensitive** by default. To replace the string, following command was used :

```
:%s/Bill Self/basketball genius Bill Self/g
```

This command replaced all five occurrences of “Bill Self” with “basketball genius Bill Self”.
In order to format the file to only have 80 characters per line, following command was used :

:set textwidth=80

In order to apply this setting to the entire file, the following keys were pressed :

gqG