

Cheat Sheet for CSC60: Linux, vim, class work

Linux Commands

Linux Command	Description
cd «folder name»	Change directory – Move into the specified folder
cp «old file» «new file»	Copy – Make a copy of an existing file. Two files remain.
mv «old file» «new file»	Rename a file. One file remains.
cat «filename»	Display or create files
ls	<p>Lists the files in current folder. This command needs to use a lower-case L.</p> <p>Options:</p> <ul style="list-style-type: none">-a List all files, including hidden ones.-d List directory names only, not ordinary files.-l Show long listing with extended information. <p>Examples: ls ls -l ls -la</p>
gcc «c file»	GNU C Compiler
gcc «c file» -o RunName	GNU C Compiler. Ex: gcc lab1.c -o lab1 (Then use <i>lab1</i> instead <i>a.out</i>)
mkdir «folder name»	Creates a new directory with the specified name
pwd	Print name of current/working directory.
rm «filename»	Delete a file.
vim «filename»	Opens the specified file in the "vim" text editor

“vim” text editor command Reference Guide

File Commands:

- :q!** To exit VIM and abandon any changes you have made to the file.
ZZ To exit VIM saving any changes to the file and return to the shell prompt.
:wq To exit VIM, write the changes to the file, and return to the shell prompt.

Alternate ways of entering VIM:

- vim file-name** Edit named file.
vim + n file-name Edit named file starting at line n.
vim + file-name Edit named file starting at last line.
vim + /string file-name Edit named file starting at first occurrence of string.
vim -r file-name Edit named file starting at first occurrence of string.

Various VIM Modes:

Command mode - Commands that require a colon (:). In Command Mode you may use the arrow keys to move around.

Insert mode – Type **i** for insert mode. To leave Insert Mode, press **Escape**.
- Type **a** for append mode. To leave Append Mode, press **Escape**.

VIM Cursor Movement Commands:

- SpaceBar** Forward one character position.
l Right (forward) one character position.
h Left (backward) one character position.
j Down to same position in line below; moves left to last position.
k Up to same position in line above; moves left to last position.

- w** Forward to first letter of next word.
W Forward to first letter of next blank-delimited word.
b Backward to first letter of previous word.
B Backward to first letter of previous blank-delimited word.

- Return** Forward to beginning of next line.
O Back to beginning of current line. (It's a zero.)
\$ End of current line.

- (** Back to beginning of current sentence.
) Ahead to beginning of next sentence.
{ Back to beginning of current paragraph.
} Ahead to beginning of next paragraph.

- H** Home, or left end of top line on screen
M Middle, or left end of middle line on screen.

L Lower, or left end of lowest line on screen.
G Last line in work buffer.
nG Indicated relative line *n* in buffer.

Ctrl-U Up half screen.
Ctrl-D Down half screen.
Ctrl-F Forward (down) almost a full screen.
Ctrl-B Backward (up) almost a full screen.

Inserting Text:

i Insert before Cursor
I Insert before first nonblank character on line.
a Insert after character.
A Insert at end of line
o Insert on next line down (open a line).
O Insert on next line up (open a line).

Deleting Text:

x Character at cursor.
X Character following cursor .
dw To end of word.
dW To end of blank-delimited word.
db To beginning of word.
dB To beginning of blank-delimited word.
d then Return Two lines; current and following.
dd Current line.
d0 To beginning of line. (Use zero)
D To end of line.
d) To end of sentence
d(To beginning of sentence.
d} To end of paragraph
d{ To beginning of paragraph.

Changing or Replacing Text:

r	replace character at cursor.	cc	Current line.
R	Replace characters until Escape is pressed.	c0	From beginning of line to cursor.
		c\$	To end of line.
		C	To end of line.
cw	To end of word.	c)	To end of sentence.
cW	To end of blank-delimited word.	c(From beginning of sentence to cursor.
cb	From beginning of word to cursor.	c}	To end of paragraph.
cB	From beginning of blank-delimited word to cursor.	c{	From beginning of paragraph to cursor.

Undoing an Edit:

- u Undoes the most recent change. Must be out of Insert Mode.
- U Restores the current line to the way it was before making changes.

vim Search Commands:

- /string followed by Return Search forward in work buffer.
- ?string followed by Return Search backward in work buffer.
- n Find next string in same direction.
- N Find next string in opposite direction.

vim Search string special characters:

- ^ Beginning of line.
- \$ End of line.
- . Matches any character
- \> Match the end of a word.
- \< Match beginning of word.
- [] Match any character within brackets.

vim Yank Commands:

<u>Command</u>	<u>Text "yanked"</u>
yw	To end of word.
yW	To end of blank-delimited word.
yb	To beginning of word.
yB	To beginning of blank-delimited word.
y followed by Return	Two lines, current and following.
yy	Current line.
y0	To beginning of line. (Use zero)
Y	To end of line.
y)	To end of sentence
y(To beginning of sentence
y}	To end of paragraph.
y{	To beginning of paragraph.

vim Put/Paste Commands:

- Paste** is used after delete or yank to recover lines.
- p** Paste below cursor – lower case
 - P** Paste above cursor – upper case
 - "2p** Paste from buffer 2 (there are 9)

Copy & Paste = Yank & Put
Cut & Paste = Delete & Put

Logging on to *Linux*

Use one on the Plan documents to help you log in.

Plan A Putty and File Transfer. Windows.docx

Plan B Mac Alternatives.docx

Plan C Mobaxterm. Windows.docx

The Plans **also** contain information on moving your assignment files from the Linux computer to your own computer so you can upload those files to Canvas for a grade.

The Flow of Operations in creating a program

To copy a file from the instructor – **Non Mac Users:**

Type: **cd csc60** to put you in the directory/folder where you will do your work.

If it is your first time to work on this assignment, create a directory/folder for this work.

Type: **mkdir labX** (where X is the assignment number)

Type: **cd labX** (to move to the new directory/folder)

Type (to copy the instructor's files):

cp /home/college/bielr/files_csc60/TheFileName .
^space space & then ^ dot

To copy a file from the instructor – **Mac Users:**

I will include copies of the files on the Canvas assignment page that you may copy directly to your Mac. This avoids logging into a Coding computer just to get files.

To start writing a program:

Type: **vim TheFileName.c**

To exit vim:

:wq To exit VIM, write the changes to the file, and return to the shell prompt.

:q! To exit VIM and abandon any changes you have made to the file.

To compile the program:

Type: `gcc TheFileName.c`

Type: `gcc -lm TheFileName.c` [NOTE: “-lm” is only needed when you use `math.h`]

[You only need -lm when you are using algebraic commands.]

To run the program: Type: `a.out` If you do not change the prompt, type: `./a.out`

Find your file to upload it to Canvas:

Again refer to your chosen Plan for directions to move a file from Linux to your computer so it can be uploaded to Canvas.