CWP Workshop

6 January 2020

Golden, Colorado

Today's workshop – Start-up items

- Login to *mio.mines.edu* using your (new) login
  - **ssh -Y username@mio.mines.edu**

- If you have not setup you *~/.bash_profile* or it's your first time logging into Mio then you need to:
  - **cp /gpfs/lb/sets/geop/bash_profile_generic ~/.bash_profile**

- Copy over the workshop materials to your local directory
  - **mkdir -p ~/M8R/Workshop2020/**
  - **cp -r /gpfs/lb/sets/geop/M8R/Workshop2020/* ~/M8R/Workshop2020/**

- Note: There is a shared GEOP folder where you can share codes, files, etc with your peers
  - **/gpfs/lb/sets/geop/**

- Text editors: **vi** / **vim** (suggested) or **gedit** (GUI-like)

Using the command line

- Navigating:
  - **cd /your/directory** takes you to that location
  - Using **~/folder** is the same as **/home/username/folder**
  - **pwd** shows your current location
  - **cd ..** goes back one folder and **cd ../..** goes back two
  - **cd –** is like a ‘back’ button on a browser
  - **pushd /new/folder** goes to the new location AND:
    - **pushd** again goes to the folder before using **pushd**
    - **popd** does is a second **pushd** but removes previous location

- Exploring:
  - **ls** lists all files in the folder
    - **ls -l** lists the long form of file information (creation date, size, owner, permissions)
    - **ls -t** lists the files by time last touched, not alphabetic
    - All can be combined (e.g., **ls -ltr** lists long form organised by reverse time touched)

Using the command line

- More exploring:
  - **ls SCo*** lists all files starting with SCo
    - Try using other search characters like **??**, **[abcde]**, etc
  - **cat file.txt** shows the file contents
    - Try using **more**, **less**, etc
  - Commands can be 'piped' using **|**
    - **ls | wc** is a word count and shows number of files
  - **find ~/file *.sh** will find all files with .sh extension in all sub-directories of ~/file
  - **grep -n Result SConstruct** shows all instances of Result in file named SConstruct

- Creating:
  - **mkdir folder1** creates a folder in your current directory
  - **touch file2** creates an empty file in your current directory
  - **vim file3** creates the file and immediately allows editing

Using vim

- vim is a text editor!
- Open a file from command line: vim filename

- Arrow keys navigate the file
- Information is always at the bottom of the window:

Current role

cursor is at line 9 character 1,
which is 66% to the end of the file

- Inputting text:
  - i to start inserting text at the cursor location
  - r to start replacing text
  - a to start inserting text after the cursor
  - A to start inserting text at the end of the current line
- Commands
  - A colon defines the beginning of a command
  - Write/save the file is :w, quit vim is :q
  - Can be combined like this → :wq

Using vim

- Finding a string
  - /text will find all instances and highlight them
  - n will bring you to the next instance
- Replacing a string
  - :%s/old/new/g

- dd cuts the current line
  - 2dd cuts the current line and the next line (2 lines)
- yy yanks the current line (like copy)
  - 2yy yanks two lines
- p places the last cut or yanked line at the cursor
  - P places that line below the current line

- vim is very robust and has many commands and lots of online help (e.g., https://vim.rtorr.com/)

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