MADAGASCAR

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:

```
# the end

-- INSERT --                                        9,1            66%
```

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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