

# *Applications in Scientific Computing*

## Assignment 1: Navigating Linux and Vim

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Due: Wednesday 6 January 2016

This assignment is designed to guide you through some practice with navigating the Linux file system and the Vim text editor. You may find the following image helpful: <http://www.viemu.com/vi-vim-cheat-sheet.gif>

1. Remotely connect to `merlin.me.jhu.edu` and record the required steps.
2. What is your working directory upon login? What command prints the working directory?
3. Create a new directory called `assignments`. Inside this directory, create another directory called `assignment-1` and navigate into it. Record the four required steps. What is your working directory?
4. Using Vim, create a new file in `~/assignments/assignment-1` called `vim-practice`, write your name on the first line, and save without exiting. Record the required steps. Bonus: What does the tilde (`'~'`) represent in this directory path?
5. After a blank Line 2, type on Line 3 the following phrase 100 times: “Typing this phrase 100 times is the worst.” Record the required steps.
6. Replace every instance of the phrase “the worst” with “easy using Vim.” Record the required steps.
7. Explore the function of the `'h'`, `'j'`, `'k'`, and `'l'` keys. What do they do? Why is this useful?
8. Explore the function of the `'w'` and `'b'` keys. What do they do?
9. Copy and paste Line 1 into Line 5 (after a blank Line 4). Record the required steps.
10. Delete Line 5 by pressing one key two times. What key did you press?
11. Undo what you deleted. How did you do this?
12. Redo what you just undid. How did you (un-)undo this?
13. When in Normal Mode, what are the functions of `'i'`, `'a'`, `'s'`, `'o'`, and `'r'`? What happens if you hold shift while pressing these keys?
14. Save the file and quit Vim. Record the required steps.
15. Navigate to your home directory. Record the required steps. Bonus: Can you do it using the tilde?
16. From your home directory, use `less` to view the `vim-practice` file. How is `less` different from Vim? There are two different ways to access this file: one by changing your working directory, and one by using the relative directory location. Record both commands.
17. Draw the file structure as it currently sits in your home directory.