Introduction to the shell

Based on the very detailed material at http://software-carpentry.org/v5/novice/shell/index.html.

Objectives

- Introduce concept of command-line interface
- Understand the advantages of text files over other file types
- Explain how to navigate your computer's directory structures and understand paths
- Bash commands: using flags, finding documentation
- Move, copy and delete files
- Using tab completion for efficiency
- Use of wildcards for pattern matching

Commands and hints

Navigating, creating and moving things

Printing working directory:

```
$ pwd
```

List contents of a directory:

```
$ ls
```

Change directories:

```
$ cd
$ cd ..
```

Create and remove directories:

```
$ mkdir
$ rmdir
```

Copy, move, delete:

```
$ cp
$ mv
$ rm
```

Hint: tab completion makes you more efficient and less error-prone

Create and edit a file:

```
$ touch readme.txt
$ nano readme.txt
```

Working with file contents

Seeing the contents of a file:

```
$ cat
$ less
$ head
$ tail
```

How big is this file?

```
$ ls -lh
$ wc
```

Redirecting output to a file:

```
$ wc -l *.csv > number_lines.csv
```

Sorting the contents of a file:

```
$ sort number_lines.csv
```

Pipe commands together:

```
$ wc -l *.csv | sort
```

Getting subset of rows:

```
$head
$tail
```

Getting subset of columns (in this case, 3rd column of a file called inputfile.csv):

```
$ cut -f 3 -d , inputfile.csv
```

Finding things

In files and in directories:

```
$find
$grep
```

Finding help (manual, or 'man' pages):

```
$man <command>
```

What did I do?

```
$history
```