Short Read Day 2: Working in the Unix Environment

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Part 1: Copy a bedGraph file to our home directory and inspect it.

The goal of this exercise is to help you familiarize yourself with the unix computing environment by performing some basic tasks and troubleshooting things on your own.

Things you need to do:

1. Log onto the Short Read Workshop server using SSH
2. Move to your user directory on **/scratch/Users/<username>**
3. Make a folder called **`workshop-day2`** and a folder inside of that called **`bedfiles`**
4. Make folders inside **`workshop-day2`** called **`results`**, **`scripts`**, **`bin`**, and **`data`**
5. Copy the folder in **`/scratch/Shares/public/sread2022/data_files/day2/bedfiles/chr1_bedfiles.tar.gz`** to your **`bedfiles`** directory
6. Decompress and extract the **`chr1_bedfiles.tar.gz`** folder in your **`bedfiles`** directory
7. Look at the formatting of the extracted files. What kind of information do these files give you?

If you don't know how to do something, don't be discouraged! Look at the documentation we've provided below or search the internet for how to do what you're trying to accomplish.

Some useful commands and tools:

- Basic Utilities:
    - **man** (manual) followed by the name of a command will tell you how to use a command
    - **ssh** lets you log into a remote server like the one we're using during the short read workshop
    - **whoami** will print your current active user
    - **uname -n** will print the name of the system you are currently on. This is useful to make sure you're actually on the short read server and not your local machine.
- Navigating Around
    - **pwd** (print working directory) will tell you which directory you're in
    - **cd** (change directory) lets you move to a different directory. For example,
        - You can move folders using *absolute* or *relative* paths. For example, if you're starting in **/scratch/** and you want to be in the **Workshop** directory inside of it, typing **cd /scratch/Workshop** will move you using the *absolute path* and typing **cd Workshop** will move you using the *relative path*
        - Relative paths have some shortcuts. **..** (two dots) means "the directory immediately above the one that I'm in", and **.** (one dot) means "the directory above the one that I'm in"

    - **ls** (list) prints out information about the directory that you're in
- Working with Files:
    - **mv** (move) moves a file from a source path to a destination path
    - **cp** (copy) copies a file from a source path to a destination path
    - **rm** (remove) removes a file or directory. **WARNING:** there is no recycle bin on a unix system. If you remove a file it is gone forever, with no chance of recovery. **DOUBLE CHECK YOUR COMMANDS**.
    - **zip / unzip** allows you to create and extract .zip archive files
    - **tar** (tape archive) allows you to create and extract archive files that have the extension of .tar, .tar.xz, .tar.gz, and more.
    - **less** allows you to view files on the command line without editing them
    - **cat** (concatenate) prints out the contents of a file directly to your terminal
    - **head / tail** show you the first and last 10 lines of a file, respectively. These are useful for quickly making sure a file is in the right format
    - **vim** is an advanced text editor that allows you to edit files for writing scripts
    - **nano** is a simpler text editor for writing scripts on the command line