

This is the worksheet for Lecture Two at:

<http://www.doc.ic.ac.uk/~wjk/UnixIntro/>

1. Try the following command sequence:
  - `cd`
  - `pwd`
  - `ls -al`
  - `cd .`
  - `pwd` (where did that get you?)
  - `cd ..`
  - `pwd`
  - `ls -al`
  - `cd ..`
  - `pwd`
  - `ls -al`
  - `cd ..`
  - `pwd` (what happens now)
  - `cd /etc`
  - `ls -al | more`
  - `cat passwd`
  - `cd -`
  - `pwd`
2. Continue to explore the filesystem tree using `cd`, `ls`, `pwd` and `cat`. Look in `/bin`, `/usr/bin`, `/sbin`, `/tmp` and `/boot`. What do you see?
3. Explore `/dev`. Can you identify what devices are available? Which are character-oriented and which are block-oriented? Can you identify your tty (terminal) device (typing `who am i` might help); who is the owner of your tty (use `ls -l`)?
4. Explore `/proc`. Display the contents of the files `interrupts`, `devices`, `cpuinfo`, `meminfo` and `uptime` using `cat`. Can you see why we say `/proc` is a pseudo-filesystem which allows access to kernel data structures?
5. Change to the home directory of another user directly, using `cd ~username`.
6. Change back into your home directory.
7. Make subdirectories called `work` and `play`.
8. Delete the subdirectory called `work`.
9. Copy the file `/etc/passwd` into your home directory.
10. Move it into the subdirectory `play`.

11. Change into subdirectory `play` and create a symbolic link called `terminal` that points to your tty device. What happens if you try to make a hard link to the tty device?
12. What is the difference between listing the contents of directory `play` with `ls -l` and `ls -L`?
13. Create a file called `hello.txt` that contains the words "hello world". Can you use "cp" using "terminal" as the source file to achieve the same effect?
14. Copy `hello.txt` to `terminal`. What happens?
15. Imagine you were working on a system and someone accidentally deleted the `ls` command (`/bin/ls`). How could you get a list of the files in the current directory? Try it.
16. How would you create and then delete a file called "\$SHELL"? Try it.
17. How would you create and then delete a file that begins with the symbol #? Try it.
18. How would you create and then delete a file that begins with the symbol -? Try it.
19. What is the output of the command:  
`echo {con,pre}{sent,fer}{s,ed}`? Now, from your home directory, copy `/etc/passwd` and `/etc/group` into your home directory in one command given that you can only type `/etc` once.
20. Still in your home directory, copy the entire directory `play` to a directory called `work`, preserving the symbolic link.
21. Delete the `work` directory and its contents with one command. Accept no complaints or queries.
22. Change into a directory that does not belong to you and try to delete all the files (avoid `/proc` or `/dev`, just in case!)
23. Experiment with the options on the `ls` command. What do the `d`, `i`, `R` and `F` options do?