Unix Bootcamp

Mike Gildersleeve – amgilder@cs.unh.edu

Unix/Linux – kernel, shell, programs – processes, files
Command-line interface (CLI)
Use a local terminal to run ssh (`ssh username@machinename.cs.unh.edu`) – prompt
Clear the screen → `clear`
Where am I? → `pwd`
    Files, directories, file system, tree, root, parent, child, branch, current directory
    Filename, path, pathname – absolute vs. relative
How much space do I have available to me? → `quota -vs`
What's here? → `ls`
    Command vs. command line – fine-tune using options/flags/arguments
    Tell me more → `ls -l`
    Show me what's hiding → `ls -a`
Take me somewhere → `cd somewhere`
    Take me home → `cd`
    Take me to xyz123's home → `cd ~xyz123`
    Special names – `~` (home), `..` (parent), `.` (current), `/` (root)
The shell maintains a history of command lines – use up and down arrows to step through it, then press enter to reissue a command line
Make a directory named stuff → `mkdir stuff`
Move the file work.txt into the stuff directory → `mv work.txt stuff`
    Move the file work.txt into the stuff directory renaming it morework.txt → `mv work.txt stuff/morework.txt`
Rename the file work.txt to morework.txt without moving it → `mv work.txt morework.txt`
Copy morework.txt to a file named completedwork.txt → `cp morework.txt completedwork.txt`
    Copy morework.txt to a file named todo.txt inside the stuff directory → `cp morework.txt stuff/todo.txt`
    Within stuff, copy todo.txt to a file with the same name in your home directory → `cp todo.txt ~`
    Do the same thing, without first changing into the stuff directory → `cp stuff/todo.txt .`
    Do the same thing from anywhere → `cp ~/stuff/todo.txt ~`
Delete the file named todo.txt → `rm todo.txt`
    Delete the file named todo.txt from inside stuff while staying home → `rm stuff/todo.txt`
    Delete the file named todo.txt from inside stuff from anywhere → `rm ~/stuff/todo.txt`
Delete an empty directory → `rmdir stuff`
See the contents of the bootcamp.txt file → `cat bootcamp.txt`
See the contents of the bootcamp.txt file without the top scrolling off the screen → `less bootcamp.txt`
    Use spacebar to page forward, /*searchterm* to search for *searchterm*, n to go to next instance of *searchterm*, q to quit
Redirect the output of a command to store them in a file named output.txt → `ls -l > output.txt`
    Redirect the output of a command to append them to the end of the file named output.txt → `ls -l ~/stuff >> output.txt`
    Pipe the output of one command directly into another as its input → `ls -l | less`
Pattern matching in filenames – `*` matches 0 or more characters, `?` matches one and only one character
    Show me only names of things in the current directory that start with g → `ls g*`
    Show me only names of things in the current directory that end with .txt → `ls *.txt`
    Show me only names of things in the current directory that end with consist of two characters followed by .txt → `ls ??.txt`
File and directory names are generally safest when they use only letters, digits, periods, and underscores (best to avoid spaces and other chars)
    Case sensitive
Man (manual) pages act as a system-wide reference manual
    Tell me everything there is to know about the ls command → `man ls`
    Briefly remind me what the ls command does → `whatis ls`
    What is that command that I use to list things, again? → `apropos list`
Permissions control who can do what with each file and directory
    Show me the permissions for the file named bootcamp.txt → `ls -l bootcamp.txt`
        `-rw-rw-r-- 1 mikeg mikeg 4190 Oct  7 17:33 bootcamp.txt`
    Show me the permissions for everything in my current directory → `ls -l`
    Show me the permissions for everything inside the directory named stuff → `ls -l stuff`
    Show me the permissions for the directory named stuff → `ls -ld stuff`
        `drwxrwxr-x 2 mikeg mikeg 4096 Oct  8 08:39 stuff`
    `d` or `-` indicates directory or file, `r` (read), `w` (write), `x` (execute), three sets – user, group, other
        For a directory, read access allows listing its contents
        For a directory, write access allows deleting files and directories that it contains
        For a directory, execute access allows files within it to be accessed (if the user also has access permissions for those files)
    Change the permissions on bootcamp.txt to give everyone read access → `chmod ugo+r bootcamp.txt`
    Change the permissions on bootcamp.txt to deny the group and other write and execute access → `chmod go-wx bootcamp.txt`