More Unix Commands

- grep
- which
- apropos
- alias
- file
- top
- ps
- find
- kill
- &   (in background…also C-z)

- | (pipes)
- echo
- ln
- whoami
- printenv
- tail
- tar
- chmod chown
- ssh scp
- df

Unix redirection (standard input/output/error)

Handle	Name	Description
0	stdin	Standard input
1	stdout	Standard output
2	stderr	Standard error

- command > blah.txt
  - "Standard output" of command goes to new file blah.txt
  - If file blah.txt already exists, it's overwritten
    - except that it does not seem to happen since Prof Lipman must have done something to protect it
- command >> blah.txt
  - "Standard output" of command is appended to existing file blah.txt
  - If file blah.txt does not exist, it's made
- command 2> blah.txt
  - "Standard error " of command goes to blah.txt
- command &> blah.txt
  - "Standard errror" and "Standard output" to blah.txt
- command < blah.txt
  - "Standard input" from blah.txt

File permissions and ownership

```
-rw-r--r--  1 pi   pi    9285584 Dec 22 20:59 file.tar
drwxr-xr-x  9 pi   pi       4096 Dec 22 23:05 iminuit/
drwxr-xr-x 11 pi   pi       4096 Dec 12 23:41 p129/
drwxr-xr-x 11 pi   pi       4096 Dec 12 21:38 physrpi/
drwxr-xr-x  2 pi   pi       4096 Dec 22 21:26 tmp/
```

- Each user belongs to one or more "groups"
  - Type groups to see what groups the user pi belongs to
  - Every user belongs to the "world"
- Each file belongs to a user
- What can be done to a given file depends on
  - file permissions
  - which user is trying to do something
- ls –la   (to see what's going on)

d = it's a directory
r = can read it
w = can write it (ie modify or delete)
x = can execute (ie it's a program)

http://mason.gmu.edu/~montecin/UNIXpermiss.htm