



## Exercise 5.1: Working with Groups

1. Create two new user accounts (`rocky` and `bullwinkle` in the below) and make sure they have home directories.
2. Create two new groups, `friends` and `bosses` (with a GID of 490). Look at `/etc/group`. See what GID was given to each new group.
3. Add `rocky` to both new groups.  
Add `bullwinkle` to group `friends`.  
Look in `/etc/group` to see how it changed.
4. Login as `rocky`. Create a directory called `somedir` and set the group ownership to `bosses`. (Using `chgrp` which will be discussed in the next session.)  
(You will probably need to add execute privileges for all on `rocky`'s home directory.)
5. Login as `bullwinkle` and try to create a file in `/home/rocky/somedir` called `somefile` using the `touch` command.  
Can you do this? No, because of the group ownership and the `chmod a+x` on the directory.
6. Add `bullwinkle` to the `bosses` group and try again. Note you will have to log out and log back in again for the new group membership to be effective. Do the following:

## ✓ Solution 5.1

```
1. $ sudo useradd -m rocky
$ sudo useradd -m bullwinkle
$ sudo passwd rocky
```

```
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
```

```
$ sudo passwd bullwinkle
```

```
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
```

```
$ ls -l /home
```

```
total 12
drwxr-xr-x  2 bullwinkle bullwinkle 4096 Oct 30 09:39 bullwinkle
drwxr-xr-x  2 rocky      rocky      4096 Oct 30 09:39 rocky
drwxr-xr-x 20 student    student    4096 Oct 30 09:18 student
```

```
2. $ sudo groupadd friends
$ sudo groupadd -g 490 bosses
$ grep -e friends -e bosses /etc/group
```

```
friends:x:1003:
bosses:x:490:
```

```
3. $ sudo usermod -G friends,bosses rocky
$ sudo usermod -G friends bullwinkle

$ grep -e rocky -e bullwinkle /etc/group
```

```
rocky:x:1001:
bullwinkle:x:1002:
friends:x:1003:rocky,bullwinkle
bosses:x:490:rocky
```

```
$ groups rocky bullwinkle
```

```
rocky : rocky friends bosses
bullwinkle : bullwinkle friends
```

```
4. $ ssh rocky@localhost
$ cd ~
$ mkdir somedir
$ chgrp bosses somedir
$ ls -l
```

```
total 16
-rw-r--r-- 1 rocky rocky 8980 Oct  4 2013 examples.desktop
```

```
drwxrwxr-x 2 rocky bosses 4096 Oct 30 09:53 somedir
```

```
$ chmod a+x .
```

5. 

```
$ ssh bullwinkle@localhost
```

```
$ touch /home/rocky/somedir/somefile
```

```
touch: cannot touch /home/rocky/somedir/somefile: Permission denied
```

```
$ exit
```

6. 

```
$ sudo usermod -a -G bosses bullwinkle
```

```
$ ssh bullwinkle@localhost
```

```
$ touch /home/rocky/somedir/somefile
```

```
$ ls -al /home/rocky/somedir
```

(note ownership of files)