# System Administrator DeCal
# Week 4 Homework

### Due by next class (2/27)

### February 23, 2007

## 1 Users

1. In what file is user account information stored?

2. Can multiple users on the system have the same account name? UID?

3. The command to create a new user is `useradd`. How would you add the user `john` with a home directory at `/export/home/john` and with the shell `/usr/local/bin/zsh` ? (hint: read the man page)

4. Why are some user accounts (like www-data) called system user accounts?

## 2 Groups

1. In what file is group information stored?

2. The command to create a new user is `groupadd`. How would you create a group `admin` ?

3. Every user can be a member of multiple groups, but there is one group that is the greatest among equals. This is called the user's **Principal Group**.Why makes this group special?

4. The command to administer group membership is `gpasswd`. How would you add the user `john` to the group `admin`? How would you remove him?

## 3 Passwords

1. In what file is password information stored?

2. Why aren't password hashes stored in the same file as other user information?

3. The command to change a password is `passwd`. How would you change your password?

4. Which user has the ability to change any user's password?

## 4 Permissions

- How do you use `ls` to display file permissions, file ownership and group association?

- Permissions are set for three types of users. What are those types and what users do each set of permissions apply to?

- There are three types of permissions: read, write, and execute. What do each of these mean for regular files? for directories?

- The command to change file ownership is `chown`. In most modern systems, only the system administrator can change file ownership. How would you (as an administrator) change the owner of the file `data` to `john`.

- The command to change the group of a file is `chgrp`. You will only be able to change a file's group if you are the files owner and you will only be able to change it to groups that you are a member of. How would you change the group of the file `index.html` to `www` (assuming you own the file and are in the group)?

- The command to change permissions on a file is `chmod`. You can only change file permissions if you are the owner of the file. How would you set permissions on the file `coursework.odt` to "owner read and write" and "group read", no permissions for "other"? (hint, it is to your benefit to learn the numeric mode (octal notation))

# 5  ACLs

1. Explain how ACLs can make sharing a file with a specific user easier.

2. (Optional) The commands to get and set file access controls are `getfacl` and `setfacl`. How would you grant read and write permission to the user `jameson` on the file `user_info`?

# 6  Sudo

1. How is `sudo` different from file ACLs?

2. The command for sudo is `sudo` (duh!). How would you (as your normal self) use `sudo` to add the user `john` to the system? (DO NOT RUN SUDO COMMANDS ON SYSTEMS OTHER THAN YOUR OWN. YOU WILL GENERATE SECURITY ALERTS THAT GO TO STAFF MEMBERS. THAT MEANS DON'T TRY THIS ON INST OR OCF)

3. The file for sudo information is (usually) `/etc/sudoers`. What entry would you add to give yourself (username john) full sudo (permission to run anything)? (hint: man sudoers)