Intro to Unix And Linux

Final Exam Review

Important directories

```
/home
/root
/bin
/usr
/sbin
/etc
/mnt
/tmp
/lib
/boot
/var
/proc
~
.
..
```

Important directories

/home	User home directories
/root	The superuser home directory
/bin	Operating system programs
/usr	Programs for users
/sbin	Programs for System Administrators
/etc	Configuration files
/mnt	External devices (such as flash drives)
/tmp	Temporary files
/lib	Shared libraries
/boot	Files to boot up the system
/var	Files that change in size (such as logs, or email files)
/proc	Running processes, not real files
~	The current user's home directory
.	The current working directory
..	The parent directory of the current working directory

File Commands

```
pwd     Print working directory
cd      Change directory
ls      list contents of directory
ls -l   Long listing (includes permissions and file sizes)
ls -al  Long listing including hidden files
mkdir   Create a directory
rmdir   Remove an empty directory
rm -r   Remove a non-empty directory and its contents
cp source destination  Copy file source to file destination
mv source destination  Move file source to file destination
                       (can be used to rename files)
rm filename    Remove a file
chmod   Change file permissions
```

More file commands

```
cat    Display contents of a file
more   Display file, pause after screen
less   Like more, but can scroll backwards
sort   Display file in sorted order
head   Display the beginning of a file
tail   Display the end of a file
wc     Word Count
find dirname –name filename       Searches a directory
cmp    compares files
diff   shows differences between files
history      Shows a list of your bash commands
```

Compression and Archive commands

```
gzip    Compress a file and adds the ".gz" extension
gunzip  Uncompress a file and removes the ".gz" extension
tar     tape archive command
```

The vi Editor

vi *filename* Open a file in the vi editor

- vi supports three modes
  - **Insert mode**
    - Accessed by typing “i”
  - **Command mode**
    - Accessed by typing Esc
  - Extended (**ex**) command set mode
    - Accessed by typing “:” in command mode

Deleting Text in vi

- Deletion commands available (command mode)
  - Use `x` to delete a character
  - Use `dd` to delete a line

Table 3-2 vi editor's delete commands

Command	Purpose
x	Delete the character at the cursor.
dd	Delete the current line (putting it in a buffer so it can also be pasted back into the file).
dw	Delete the word starting at the cursor. If the cursor is in the middle of the word, delete from the cursor to the end of the word.
d$	Delete from the cursor to the end of the line.
d0	Delete from the cursor to the start of the line.

Exiting vi

First press Esc to go to command mode then

- To save file without exiting, use `:w`
- To save and exit, use `:wq` *or* `ZZ`
- To exit without saving, use `:q!`

Shell scripts

```
COLOR="Red"     Assign a value to a variable (no spaces!)
echo $COLOR     Display the value of a variable
if      Conditional
case    Conditional
while   Loop
for     Loop
read    Get input from keyboard
grep regex filename    Search the file for patterns that match
```

Installing from source code

Download the source code tarball

```
wget URL
```

Uncompress the tarball

```
gunzip name.tar.gz
```

Extract files from the archive

```
tar –xvf name.tar
```

Change to the source code directory

```
cd name
```

Create the Makefile

```
./configure
```

Build the application

```
make
```

Install the application

```
make install
```

Git

Clone a repository

```
git clone URL
```

Add a file to the staging area

```
git add filename
```

Commit changes to the local repository

```
git commit –m “Comment”
```

Push the changes to github

```
git push –u origin master
```

Download the latest version from github

```
git pull
```