UNIVERSITY OF ARKANSAS

Linux Tutorial #3

cp (copy)

cp file1 file2 is the Linux command which makes a copy of file1 in the current working directory and calls it file2.

Before we can experiment with cp, we need to download a file from the Internet using the wget command. First, cd to your Linuxstuff directory

```
% cd ~/Linuxstuff
```

Then at the Linux prompt, type

```
% wget -q  http://www.csce.uark.edu/~jgauch/2004/linux/science.txt
```

This will download a file called science.txt into your Linuxstuff directory.

Now we can use cp to create a backup of your science.txt file by copying it to a file called science.bak. At the Linux prompt, type

```
% cp science.txt science.bak
```

Now you should have two copies of the same file in your Linuxstuff directory.

mv (move)

To move a file from one place to another, use the mv command. This has the effect of moving rather than copying the file, so you end up with only one file rather than two. The syntax for this command is

```
% mv file1 file2
```

The mv command can also be used to rename a file, by moving the file to the same directory, but giving it a different name.

We are now going to move the file science.bak to your backup directory. First, change directories to your Linuxstuff directory. Inside the Linuxstuff directory, type

```
% mv science.bak backups/science.bak
```

To save typing, we can simply specify the directory we want the file to be moved into. For example, the following commands will also move the file into backups.

```
% mv science.bak backups/.
% mv science.bak backups
```

After you have moved the file, type ls and ls backups to see if it has worked.

rm (remove)

To delete (remove) a file, use the rm command. As an example, we are going to create a copy of the science.txt file then delete it.

Inside your Linuxstuff directory, type

```
% cp science.txt tempfile.txt
% ls
% rm tempfile.txt
% ls
```

You should see that we created a file called tempfile.txt and then after the rm command the file tempfile.txt has been removed from the Linuxstuff directory.

rmdir (remove directory)

You can use the rmdir command to remove a directory. Inside your Linuxstuff directory, type

```
% mkdir tempdir
% ls
% rmdir tempdir
% ls
```

You should see that we created a directory called tempdir and then after the rmdir command the directory tempdir has been removed from the Linuxstuff directory.

What happens if the directory has files in it when we call rmdir? Inside your Linuxstuff directory, type

```
% rmdir backups
```

You should see a Linux error message saying that you can not remove a non-empty directory. This is a safety feature that prevents us from deleting a whole directory of files by accident.

clear (clear screen)

Before you start the next section, you may like to clear the terminal window of the previous commands so the output of the following commands can be clearly understood.

At the prompt, type

```
% clear
```

This will clear all text and leave you with the % prompt at the top of the window.

cat (concatenate)

The command cat can be used to display the contents of a file on the screen. Inside your Linuxstuff directory, type

```
% cat science.txt
```

As you can see, the file is longer than the size of the window, so it scrolls past making it unreadable.

head

The head command writes the first ten lines of a file to the screen.

First clear the screen then type

```
% head science.txt
```

Then type

```
% head -5 science.txt
```

What difference did the -5 do to the head command?

tail

The tail command writes the last ten lines of a file to the screen.

Clear the screen and type

```
% tail science.txt
```

Can you guess how to view the last 15 lines of the file?

more

The command more writes the contents of a file onto the screen a page at a time. Type

```
% more science.txt
```

Press the [return] key to see the file one line at a time. Press the [space-bar] if you want to see another page. As you can see, more is better than cat for long files.

less

The command less is an enhanced version of more with a number of commands that let you scroll up and down a file. Type

```
% less science.txt
```

Press the [return] key to see the file one line at a time. Press the [space-bar] if you want to see another page. You can also use the [up] and [down] arrow keys to view the file. Type [q] if you want to quit reading.

Using less, you can search though a text file for a keyword (pattern). For example, to search through science.txt for the word 'science', type

```
% less science.txt
```

then, still in less, type a forward slash [/] followed by the word to search

```
/science
```

As you can see, less finds and highlights the keyword. Type [n] to search for the next occurrence of the word.

grep

grep is one of many standard Linux utilities. It searches files for specified words or patterns. First clear the screen, then type

```
% grep science science.txt
```

As you can see, grep has printed out each line containing the word science. Or has it? Try typing

```
% grep Science science.txt
```

The grep command is case sensitive; it distinguishes between Science and science. To ignore upper/lower case distinctions, use the -i option, i.e. type

```
% grep -i science science.txt
```

To search for a phrase or pattern, you must enclose it in single quotes (the apostrophe symbol). For example to search for spinning top, type

```
% grep -i 'spinning top' science.txt
```

Some of the other options of grep are:

-v display those lines that do NOT match
-n precede each matching line with the line number
-c print only the total count of matched lines

Try some of them and see the different results. Don't forget, you can use more than one option at a time. For example, the number of lines without the words science or Science is

```
% grep -ivc science science.txt
```

wc (word count)

A handy little utility is the wc command, short for word count. To find out how many words there are in the file science.txt, type

```
% wc -w science.txt
```

To find out how many lines the file has, type

```
% wc -l science.txt
```

To find out how many lines, words, and characters are in a file, type

```
% wc science.txt
```

Summary

Command	Meaning
cp file1 file2	copy file1 and call it file2
mv file1 file2	move or rename file1 to file2
rm file	remove a file
rmdir directory	remove a directory
clear	clear the screen
cat file	display a file
head file	display the first few lines of a file
tail file	display the last few lines of a file
more file	display a file a page at a time
less file	display and scroll through a file
grep 'keyword' file	search a file for keywords
wc file	count number of lines/words/characters in file

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