Introduction to UNIX (part 2)

EECS 2031

11 November 2017

Command Terminators

- Command terminator: new line or ;
- % date; who
- Another command terminator: &
- % jedit lab9.c&
 - O Tells the shell not to wait for the command to complete.
 - Used for a long-running command "in the background" while you continue to use the xterm for other commands.

Command Terminators (cont.)

Use parentheses to group commands

The precedence of | is higher than that of;

```
% date; who | wc -1
% (date; who) | wc -1
```

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tee command

- tee copies its input to a file as well as to standard output (or to a pipe).
- tee will overwrite an existing file.



Metacharacters

- Most commonly used: *
- Search the current directory for file names in which any strings occurs in the position of *

```
% echo * # same effect as
% ls *
```

 To protect metacharacters from being interpreted: enclose them in single quotes.

```
% echo '***'
```

.

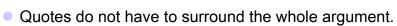
Metacharacters (cont.)

Or to put a backslash \ in front of each character:

```
% echo \*\*\*
```

- Double quotes can also be used to protect metacharacters, but ...
- The shell will interpret \$, \ and `...` inside the double quotes.
- So don't use double quotes unless you intend some processing of the quoted string (see slide 10).

Quotes



- % echo x'*'y # same as echo x*y'x*y
- What's the difference between these two commands?
- % ls x*y
 % ls 'x*y'

Program Output as Arguments

- To use the output of a command X as the argument of another command Y, enclose X in back quotes: `X`
- % echo `date`

Tue Nov 9 13:11:03 EST 2010

% date # same effect as above

Tue Nov 9 13:11:15 EST 2010

% echo date

date

% wc `ls *`

% wc * # same as above

Program Output as Arguments (2)

Single quotes vs. double quotes:

```
% echo The time now is `date`
The time now is Tue Nov 9 13:11:03 EST 2010
% echo "The time now is `date`"
The time now is Tue Nov 9 13:11:15 EST 2010
% echo 'The time now is `date`'
The time now is `date`
```

Program Output as Arguments (3)

```
% pwd
/cs/home
% ls | wc -w
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% echo You have `ls | wc -w` files in the `pwd` directory
You have 26 files in the /cs/home directory
```

File/Directory Permissions

Letter	Meaning
u	The user who owns the file (this means "you.")
g	The group the file belongs to.
0	The other users
a	all of the above (an abbreviation for ugo)

r	Permission to read the file.
W	Permission to write the file.
X	Permission to execute the file, or, in the case of a directory, search it.

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Example

chmod Command



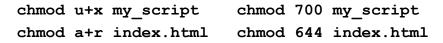
chmod who+permissions filename # or dirname chmod who-permissions filename # or dirname

Examples:

```
chmod u+x my script # make file executable
chmod a+r index.html
                         # for web pages
chmod a+rx Notes
                         # for web pages
chmod o-rx Notes
chmod o-r index.html
```

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chmod with Binary Numbers



chmod a+rx Notes chmod 755 Notes chmod 700 Notes chmod go-rx Notes chmod o-rx Notes chmod 750 Notes chmod go-r index.html chmod 600 index.html chmod o-r index.html

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chmod 640 index.html

chgrp Command



chgrp grp_name filename # or dirname

Examples:

chgrp submit asg1
chgrp labtest lab5

•To display the group(s) a user belongs to, use id command:

% id cse12345
uid=12695(cse12345) gid=10000(ugrad) groups=10000(ugrad)

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Next lecture



- Writing shell scripts
- Reading for this lecture:
 - **chmod** tutorial:

http://catcode.com/teachmod/