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CS 35L

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Assignment 1

Lab 1.5

1. man which tells you about the which command, which shows the full path of shell commands. which mv shows that the mv command’s path is /usr/local/cs/bin/mv and which sh shows that the sh command’s path is /usr/bin/sh
2. cd /usr/bin goes to the correct directory and ls -l ?r shows the commands that are 2 characters long and end in r. the 3 commands that fulfill these requirements are

-rwxr-xr-x 1 root root 63552 Aug 21 2020 ar

-rwxr-xr-x 1 root root 84248 Apr 14 2020 pr

-rwxr-xr-x 1 root root 50936 Apr 14 2020 tr

the command find -executable -name “?r” shows that the 3 commands are

./ar

ar - create, modify, and extract from archives

./pr

pr - convert text files for printing

./tr

tr - translate or delete characters

1. cd /usr/bin/ goes into the correct directory and ls -l emacs finds the symbolic link which prints

lrwxrwxrwx 1 root root 23 Aug 12 2020 emacs -> /etc/alternatives/emacs

then, cd /etc/alternatives/emacs goes into the new directory and ls -l emacs finds the new symbolic link, which then prints

lrwxrwxrwx 1 root root 19 Aug 12 2020 emacs -> /usr/bin/emacs-26.1

repeating the previous steps, cd/usr/bin/ and then ls -l emacs-26.1 prints

-rwxr-xr-x 1 root root 40085088 Sep 10 2018 emacs-26.1

because this statement does not have a symbolic link, running pwd emacs-26.1 prints the working directory, which is /usr/bin, so the file that is actually executed is /usr/bin/emacs-26.1

1. /usr/bin/gcc -v gives the version number of the /usr/bin/gcc program, which is

gcc version 8.3.1 20191121 (Red Hat 8.3.1-5) (GCC)

gcc -v gives the version number of the gcc program, which is

gcc version 10.2.0 (GCC)

they are different programs because which gcc shows that gcc is located in /usr/local/cs/bin/gcc while which /usr/bin/gcc shows that the /usr/bin/gcc is located in /usr/bin/gcc

1. man chmod reveals that s will set user or group ID on execution, x gives execution permission to the user, and w allows the user to write. therefore, u + sx will allow the user that owns the file to set the user or group ID and execute the program, while o – w will remove writing permissions from those who are not users that own the file nor other users who are members of the file’s group
2. an examination of man find revealed that find /usr/local/cs -type d -mtime -28 would show the directories modified in the last 28 hours, or the last 7 days. the first 5 entries were

/usr/local/cs

/usr/local/cs/.del

/usr/local/cs/.del/git-2.29.2

/usr/local/cs/.del/ocaml-4.11.1

/usr/local/cs/git-2.30.2

find /usr/local/cs -type d -mtime -28 | wc -l produces the total number of lines for the command, which was 435, so there are 435 entries in the directory that were modified in the last week

1. which find shows that find is in the directory /usr/bin/find, and find /usr/bin/ -type l lists the symbolic links in the same directory as find. the first 5 are

/usr/bin/osage

/usr/bin/lastb

/usr/bin/mailq.postfix

/usr/bin/nmtui-hostname

/usr/bin/pydoc3

find /usr/bin/ -type l | wc -l shows the total number of symbolic links in the directory, which is 316

1. man ls shows that -a includes entries starting with . and -t sorts the entries by time. therefore cd /usr/lib64 ls -l -a -t lists the directories starting with “.” in order from newest to youngest. the last entry is

-rwxr-xr-x. 1 root root 142712 Aug 12 2018 libcrypt.so.1.1.0

so therefore the oldest file is libcrypt.so.1.1.0

1. man locale states that the command gets its data from the environment variables that control the locale
2. opening emacs and running C-h a downcase shows all the commands that have downcase in their name. the buffer displays

**downcase-dwim** M-x ... RET

Downcase words in the region, if active; if not, downcase word at point.

**downcase-region** C-x C-l

Convert the region to lower case. In programs, wants two

arguments.

**downcase-word** M-l

Convert to lower case from point to end of word, moving over.

1. running C-h b in emacs gets help for commands, and running C-x o switches between different windows in emacs. using C-s to search through the list, the commands C-M-r through C-M-v do the following:

C-M-r isearch-backward-regexp

Do incremental search backward for regular expression. With a prefix argument, do a regular string search instead. Like ordinary incremental search except that your input is treated as a regexp.

C-M-s isearch-forward-regexp

Do incremental search forward for regular expression. With a prefix argument, do a regular string search instead. Like ordinary incremental search except that your input is treated as a regexp.

C-M-t transpose-sexps

Like C-t (‘transpose-chars’), but applies to sexps. Unlike ‘transpose-words’, point must be between the two sexps and not in the middle of a sexp to be transposed.

C-M-u backward-up-list

Move backward out of one level of parentheses.

C-M-v scroll-other-window

Scroll next window upward *ARG* lines; or near full screen if no *ARG*. A near full screen is ‘next-screen-context-lines’ less than a full screen. Negative *ARG* means scroll downward. If *ARG* is the atom ‘-’, scroll downward by nearly full screen.

1. C-h b shows the commands and their names. C-s allows you to search for a specific command. combining these 2 instructions, we can see that C-g is a keyboard-quit that signals a ‘quit’ condition and causes a direct quit
2. using the same method as #11 and #12, running C-h b to pull up commands and then C-s to search through them for the yank command reveals that yank, or C-y will reinsert or “paste” the last stretch of killed text
3. dired is an autoloaded interactive Lisp function in ‘dired.el’ that is bound to C-x d. after executing cd /usr/binexecuting C-x d in emacs produces 352416 results. on the other hand, ls -l produces 352340 results, suggesting that the emacs C-x d is more specific and shows more directories than the ls -l commands