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Homework #1

Using what you’ve learned so far in the course, specifically during week 2, answer the following questions.

Question 1.

Type the three following commands, hitting enter after each entry. Now recall and change those commands as described. Submit your updated command and results to parts a, b, and c.

$cat /etc/group

$ls $HOME

$date

1. Using command-line recall (up and down keyboard arrows), recall cat and change /etc/group to /etc/passwd.

-bash-4.2$ cat /etc/passwd

root:x:0:0:root:/root:/bin/bash

bin:x:1:1:bin:/bin:/sbin/nologin

daemon:x:2:2:daemon:/sbin:/sbin/nologin

adm:x:3:4:adm:/var/adm:/sbin/nologin

lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin

sync:x:5:0:sync:/sbin:/bin/sync

shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown

halt:x:7:0:halt:/sbin:/sbin/halt

mail:x:8:12:mail:/var/spool/mail:/sbin/nologin

operator:x:11:0:operator:/root:/sbin/nologin

games:x:12:100:games:/usr/games:/sbin/nologin

ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin

nobody:x:99:99:Nobody:/:/sbin/nologin

systemd-bus-proxy:x:999:997:systemd Bus Proxy:/:/sbin/nologin

systemd-network:x:192:192:systemd Network Management:/:/sbin/nologin

dbus:x:81:81:System message bus:/:/sbin/nologin

polkitd:x:998:996:User for polkitd:/:/sbin/nologin

tss:x:59:59:Account used by the trousers package to sandbox the tcsd daemon:/dev/null:/sbin/nologin

postfix:x:89:89::/var/spool/postfix:/sbin/nologin

sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin

ntp:x:38:38::/etc/ntp:/sbin/nologin

setroubleshoot:x:269:269::/var/lib/setroubleshoot:/sbin/nologin

zabbix:x:268:268:Zabbix Monitoring System:/var/lib/zabbix:/sbin/nologin

apache:x:48:48:Apache:/usr/share/httpd:/sbin/nologin

sssd:x:267:267:User for sssd:/:/sbin/nologin

splunk:x:1000:1000:Splunk Server:/opt/splunkforwarder:/bin/bash

b Recall the ls command, determine how to list files by time.

-bash-4.2$ ls -lt

total 1664

-rw-r--r--. 1 jmetcalf domain users 590 Oct 24 16:19 data1.txt

-rw-r--r--. 1 jmetcalf domain users 28 Oct 24 14:51 myfile.txt

-rw-r--r--. 1 jmetcalf domain users 56 Oct 24 14:47 data.txt

-rwxr-xr-x. 1 jmetcalf domain users 8520 Oct 23 18:54 5helloprog

-rw-r--r--. 1 jmetcalf domain users 157 Oct 23 18:54 mymakefile4

-rw-r--r--. 1 jmetcalf domain users 1552 Oct 23 18:53 hellofunc.o

-rw-r--r--. 1 jmetcalf domain users 1376 Oct 23 18:53 hellomake.o

-rw-r--r--. 1 jmetcalf domain users 1503664 Oct 23 18:48 hellomake.h.gch

-rw-r--r--. 1 jmetcalf domain users 144 Oct 23 18:47 hellofunc.c

-rw-r--r--. 1 jmetcalf domain users 74 Oct 23 18:45 hellomake.c

-rw-r--r--. 1 jmetcalf domain users 144 Oct 23 18:37 mymakefile3

-rw-r--r--. 1 jmetcalf domain users 180 Oct 23 18:36 mymakefile2

-rw-r--r--. 1 jmetcalf domain users 53 Oct 23 18:30 mymakefile1

-rw-r--r--. 1 jmetcalf domain users 29 Oct 23 18:26 hellomake.h

drwxr-xr-x. 2 jmetcalf domain users 4096 Oct 23 18:11 tutorial

c. Add format indicators to the date command to display the time only.

-bash-4.2$ date +%T

17:24:42

Question 2.

In a long listing of a file, what indicates that the file is a regular file?

a. The word “file” displayed at the end of the file’s long listing.

b. The character “d” displayed at the beginning of the file’s long listing.

c. The character “f” displayed at the end of the file’s long listing.

**d. The hyphen (-) displayed at the beginning of the file’s long listing.**

e. The hyphen (-) displayed at the end of the file’s long listing.

Question 3.

Assuming all the following files are present in the current working directory, the command **ls e\*** would find which files (Choose all that apply.):

a. botnet

**b. emacs**

c. ENIAC

d. cat

e. Botnet

Question 4.

Use the human readable df utility to answer the following questions.

[jalcorn@blanca /]$ df -h

df: `/root/.gvfs': Permission denied

Filesystem Size Used Avail Use% Mounted on

/dev/mapper/vg\_blanca-lv\_root

35G 9.0G 25G 27% /

tmpfs 5.9G 71M 5.8G 2% /dev/shm

/dev/sda1 477M 130M 322M 29% /boot

sun7000:/export/users/home

2.0T 236G 1.8T 12% /home

a. How many filesystems are on your Linux system?

1. /dev/mapper/vg\_0-lv\_root 5.8G 1.7G 3.9G 30% /
2. devtmpfs 1.9G 0 1.9G 0% /dev
3. tmpfs 1.9G 0 1.9G 0% /dev/shm
4. tmpfs 1.9G 35M 1.9G 2% /run
5. tmpfs 1.9G 0 1.9G 0% /sys/fs/cgroup
6. /dev/sda1 976M 231M 679M 26% /boot
7. /dev/mapper/vg\_0-lv\_opt 488M 187M 266M 42% /opt
8. /dev/mapper/vg\_0-lv\_usr\_local 976M 2.7M 907M 1% /usr/local
9. /dev/mapper/vg\_0-lv\_home 20G 121M 19G 1% /home
10. /dev/mapper/vg\_0-lv\_tmp 976M 2.8M 906M 1% /tmp
11. /dev/mapper/vg\_0-lv\_var 2.9G 376M 2.4G 14% /var
12. /dev/mapper/vg\_0-lv\_var\_log 976M 65M 845M 8% /var/log
13. tmpfs 380M 0 380M 0% /run/user/1217220084
14. tmpfs 380M 0 380M 0% /run/user/1217300642
15. tmpfs 380M 0 380M 0% /run/user/1217322663
16. tmpfs 380M 0 380M 0% /run/user/1217323201
17. tmpfs 380M 0 380M 0% /run/user/1217292013
18. tmpfs 380M 0 380M 0% /run/user/1217303170
19. tmpfs 380M 0 380M 0% /run/user/1217294575
20. tmpfs 380M 0 380M 0% /run/user/1217324387
21. tmpfs 380M 0 380M 0% /run/user/1217321423
22. tmpfs 380M 0 380M 0% /run/user/1217257266
23. tmpfs 380M 0 380M 0% /run/user/1217296446
24. tmpfs 380M 0 380M 0% /run/user/1217274080
25. tmpfs 380M 0 380M 0% /run/user/1217312579
26. tmpfs 380M 0 380M 0% /run/user/1217288430
27. tmpfs 380M 0 380M 0% /run/user/1217223287
28. tmpfs 380M 0 380M 0% /run/user/1217281826
29. tmpfs 380M 0 380M 0% /run/user/1217178198
30. tmpfs 380M 0 380M 0% /run/user/1217304916
31. tmpfs 380M 0 380M 0% /run/user/1217280920
32. tmpfs 380M 0 380M 0% /run/user/1217306905
33. tmpfs 380M 0 380M 0% /run/user/1217291082
34. tmpfs 380M 0 380M 0% /run/user/1217268980

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1. Which filesystem stores your home directory?

/dev/mapper/vg\_0-lv\_home 20G 122M 19G 1% /home

1. Assuming that your answer to exercise 4a is two or greater, attempt to create a hard link to a file on another filesystem. What error message do you get? What happens when you attempt to create a symbolic link to the file instead? **Invalid cross-device link. I do not receive an error when using a symbolic link**

Question 5.

Answer which of the following either an absolute pathname, a relative pathname, or a simple filename?

a. **myfiles\_co simple**

b. **business/myfiles relative**

c. **/home/josh absolute**

d. **/home/josh/classes/cs2080 absolute**

e. **.. simple**

f. **letters.123 simple**

Question 6.

Assume the working directory is **/home/josh** with a subdirectory named **classes**, give three sets of commands you can use to create a subdirectory named **cs2080** under **classes**. Now provide two sets of commands you can use to remove the **cs2080** directory and its contents.

Mkdir /home/josh/classes/cs2080

Mkdir ~josh/classes/cs2080

Mkdir ~/classes/cs2080

Rmdir /home/josh/classes/

Rmdir ~josh/classes/cs2080

Rm -r /home/josh/classes/cs2080

Question 7.

When manipulating running processes within Linux via the command line, knowing the process ID is essential. Can you list two ways to identify the PID number of the shell?

ps

echo $$

Question 8.

What types of files does gzip typically compresses by more than 80 percent? What types of files by typically less than 10 percent?

a.Files that don’t compress such as text files

b. Media files just as JPEG, because they are already compressed file formats