

Linux Administration Day 4 Lab

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1 Assignment Questions

1.1 Question 1

Create a folder called `/tmp/myteam` and set permissions:

- Read only for owner
- No permissions for group and others

```
~ > mkdir /tmp/myteam
~ > chmod 400 /tmp/myteam
~ > ls -al /tmp | grep myteam
dr----- - emary 15 Jan 17:31 myteam
```

Figure 1: Command Output

1.2 Question 2

Try to access the folder using `cd` command

```
~ > cd /tmp/myteam
cd: permission denied: /tmp/myteam
~ > chmod +x /tmp/myteam
~ > cd /tmp/myteam
🔒 myteam >
```

Figure 2: Command Output

1.3 Question 3

Change permissions of `/tmp/mycv` file:

- Owner: read and write
- Group: write and execute
- Others: execute only
- Do this using `chmod` in 2 different ways

Question 5

Using `chmod` with octal values, and using `chmod` with symbolic values:

```
~ > touch /tmp/mycv
~ > chmod 631 /tmp/mycv
~ > ls -al /tmp | grep mycv
.rw--wx--x    0 emary 15 Jan 17:33 mycv
~ > rm /tmp/mycv
~ > touch /tmp/mycv
~ > chmod u=rw,g=wx,o=x /tmp/mycv
~ > ls -al /tmp | grep mycv
.rw--wx--x    0 emary 15 Jan 17:34 mycv
```

Figure 3: Command Output

1.4 Question 4

Create a file with permission 444 in `/tmp` directory:

```
~ > touch /tmp/myFile
~ > chmod 444 /tmp/myFile
```

Figure 4: Command Output

- Try to edit it


```
W10: Warning: Changing a readonly file
```

Figure 5: Command Output

- Try to remove it

```
~ > rm /tmp/myFile
rm: remove write-protected regular empty file '/tmp/myFile'? y
~ >
```

Figure 6: Command Output

- Document what happens:
 - When trying to edit it in Vim  and save the edits with `:wq` we get a warning that the file is readonly and we cannot save the changes.
 - When trying to remove the file using `rm` command we get a warning that the file is readonly and ask if we want to remove it.

1.5 Question 5

Explain the difference between `x` permission for:

- Files

Question 15

- For files **x** permission allows the user to execute the file as a program. For example if a file is a shell script, the user needs execute permission to run the script.
- Directories
 - For directories **x** permission allows the user to access the directory (**cd** on it) and list its contents. Without **x** permission the user cannot access the directory or list its contents.

1.6 Question 6

List minimum permissions needed for:

- Copying a file (source file and target directory)
 - Source file: **r--** (read permission)
 - Target directory: **-wx** (write and execute permissions)
- Deleting a file
 - File: **-w-** (write permission)
- Changing to a directory
 - Directory: **--x** (execute permission only)
- Listing directory contents (**ls** command)
 - Directory: **r-x** (read and execute permissions)
- Viewing file contents (**more/cat** commands)
 - File: **r--** (read permission)
- Modifying file contents
 - File: **rw-** (read and write permissions)

1.7 Question 7

List user commands from **/usr/bin** and redirect output to **/tmp/commands.list**

```
Desktop > ls -al /usr/bin > /tmp/commands.list
Desktop > tail -n 5 /tmp/commands.list
lrwxrwxrwx - root 24 Aug 2024 mkfs.vfat → mkfs.fat
lrwxrwxrwx - root 4 Mar 2024 pstree.x11 → pstree
.rwxr-xr-x 2.6k root 5 Dec 2024 fsck.xfs
.rwxr-xr-x 472k root 5 Dec 2024 mkfs.xfs
.rwxr-xr-x 20k root 24 Dec 2024 env_parallel.zsh
```

Figure 7: Command Output

1.8 Question 9

Search for username **games** on your machine

```
~ > grep "^games" /etc/passwd
~ >
```

Figure 8: Command Output

1.9 Question 15

Write two commands:

Question 18

- Search for all files named `.bash_profile` on the system

```
~ ) find / -name .bash_profile 2>/dev/null
/home/emary/.bash_profile
^C
~ ) sudo find / -name .bash_profile 2>/dev/null
/home/emary/.bash_profile
^C
```

Figure 9: Command Output

1.10 Question 16

Display number of currently logged-in users

```
~ ) who | wc -l
1
```

Figure 10: Command Output

1.11 Question 17

Display lines 7-10 of `/etc/passwd` file

```
~ ) head -n 10 /etc/passwd | tail -n 4
nobody:x:65534:65534:Kernel Overflow User:/:usr/bin/nologin
dbus:x:81:81:System Message Bus:/:usr/bin/nologin
systemd-coredump:x:980:980:systemd Core Dumper:/:usr/bin/nologin
systemd-network:x:979:979:systemd Network Management:/:usr/bin/nologin
```

Figure 11: Command Output

1.12 Question 18

Search for `.bash_profile` files using two different methods

Similar to [Question 15](#).