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Institute of Computer Technology
B. Tech Computer Science and Engineering
Subject: BOSS (2CSE204)
PRACTICAL-5

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AIM: - To learn about controlling access to files in Linux.

Commands:
umask – to controls how file permissions are set for newly created file
chown – to change the user or group ownership of file
chmod – to change user/group/others permission/values of file

Exercise:
- **Nishant wants to create directory techdocs and he wants to set permission as per his requirement for file and directory. Refer the below listed tasks and provide appropriate solution.**

1. **Create one group techdocs and three users tech1, tech2 & database1.**
SOLUTION:

```
[root@localhost ~]# groupadd techdocs
[root@localhost ~]# cat /etc/groups
cat: /etc/groups: No such file or directory
[root@localhost ~]# cat /etc/group
techdocs:x:1001:
[root@localhost ~]# useradd tech1
[root@localhost ~]# useradd tech2
[root@localhost ~]# useradd database1
[root@localhost ~]# cat /etc/passwd
tech1:x:1001:1002::/home/tech1:/bin/bash
tech2:x:1002:1003::/home/tech2:/bin/bash
database1:x:1003:1004::/home/database1:/bin/bash
[root@localhost ~]#
```

2. **Add techdocs group as supplementary group for users tech1 & tech2.**
SOLUTION:

```
[root@localhost ~]# usermod -G techdocs tech1
[root@localhost ~]# usermod -G techdocs tech2
[root@localhost ~]# cat /etc/group
techdocs:x:1001:tech1,tech2
tech1:x:1002:
tech2:x:1003:
database1:x:1004:
[root@localhost ~]#
```

3. He wants to create a directory called dtechdocs.
SOLUTION:

```
[root@localhost ~]# mkdir dtechdocs
[root@localhost ~]# ls -ld dtechdocs
drwxr-xr-x. 2 root root 6 Apr 28 07:44 dtechdocs
[root@localhost ~]# █
```

4. Now, Change the group ownership of the dtechdocs directory to the techdocs group.
SOLUTION:

```
[root@localhost ~]# chown :techdocs dtechdocs
[root@localhost ~]# ls -ld dtechdocs
drwxr-xr-x. 2 root techdocs 6 Apr 28 07:44 dtechdocs
[root@localhost ~]# █
```

5. Verify that users in the techdocs group can create and edit files in the dtechdocs directory.
SOLUTION:

```
[root@localhost home]# su - tech1
[tech1@localhost ~]$ ls
[tech1@localhost ~]$ cd ..
[tech1@localhost home]$ ls
database1  tech1  tech2  yashpra1010
[tech1@localhost home]$ cd
[tech1@localhost ~]$ exit
logout
[root@localhost home]# mkdir /home/techdocs
[root@localhost home]# cd ..
[root@localhost /]# cd home
[root@localhost home]# ls
database1  tech1  tech2  techdocs  yashpra1010
[root@localhost home]# chown :techdocs techdocs
[root@localhost home]# ls -ld techdocs
drwxr-xr-x. 2 root techdocs 6 Apr 28 08:01 techdocs
[root@localhost home]# su - tech1
[tech1@localhost ~]$ cd ..
[tech1@localhost home]$ ls
database1  tech1  tech2  techdocs  yashpra1010
[tech1@localhost home]$ cd tech
-bash: cd: tech: No such file or directory
[tech1@localhost home]$ cd techdocs/
[tech1@localhost techdocs]$ █
```

6. **Set permissions on the dtechdocs directory. On the dtechdocs directory, configure setgid (2), read/write/execute permissions (7) for the owner/user and group, and no permissions (0) for other users.**
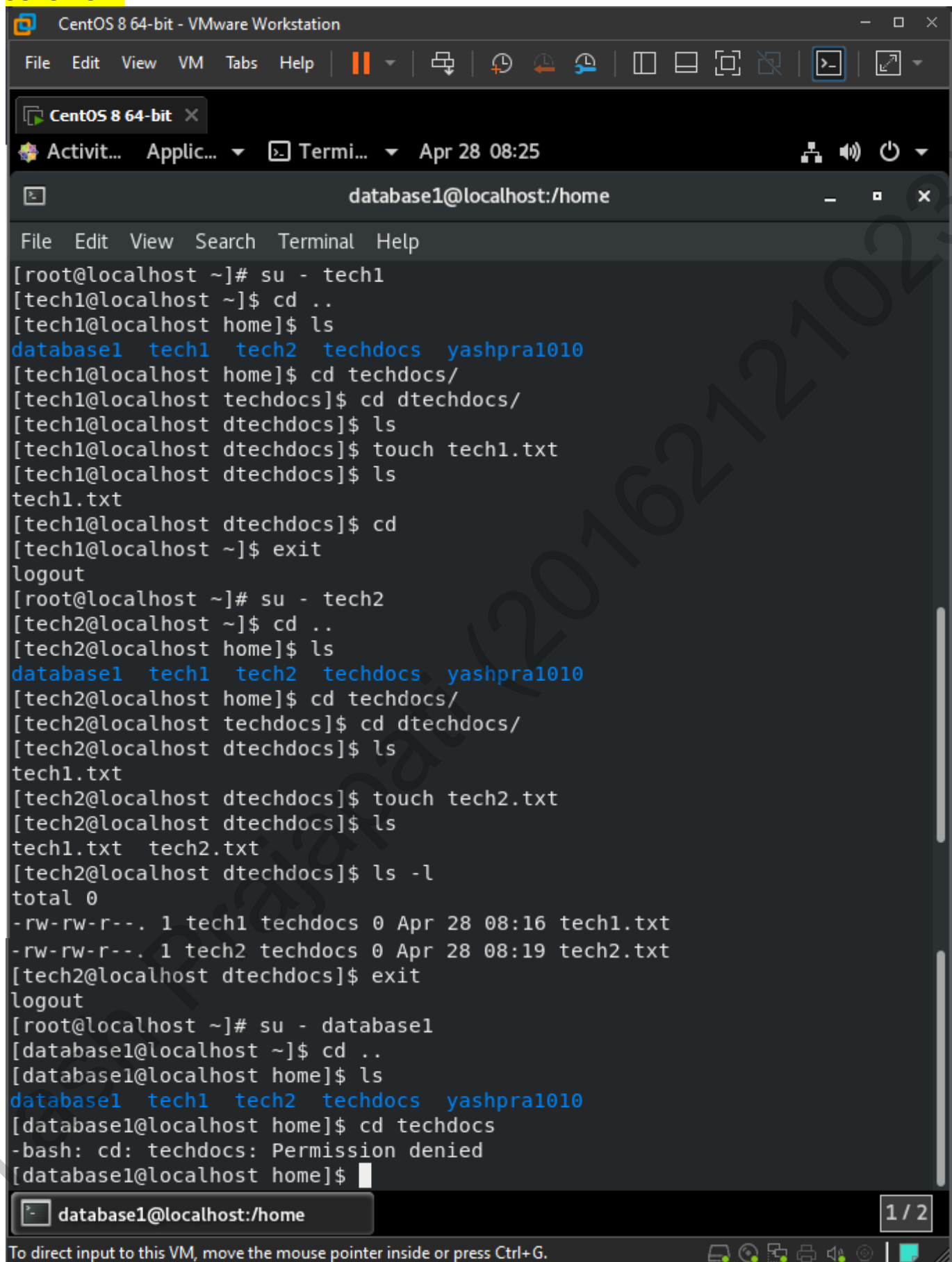
SOLUTION:

```
[root@localhost ~]# chmod 2770 /home/techdocs
[root@localhost ~]# ls -ld /home/techdocs/
drwxrws---. 2 root techdocs 6 Apr 28 08:01 /home/techdocs/
[root@localhost ~]# mkdir /home/techdocs/dtechdocs
[root@localhost ~]# ls -l /home/techdocs/
total 0
drwxr-sr-x. 2 root techdocs 6 Apr 28 08:08 dtechdocs
[root@localhost ~]# 
```

7. **Verify that the permissions are set properly.**

SOLUTION:

```
[root@localhost ~]# ls -l /home/techdocs/
total 0
drwxr-sr-x. 2 root techdocs 6 Apr 28 08:08 dtechdocs
[root@localhost ~]# chmod g+w /home/techdocs/dtechdocs/
[root@localhost ~]# ls -l /home/techdocs/
total 0
drwxrwsr-x. 2 root techdocs 6 Apr 28 08:08 dtechdocs
[root@localhost ~]# 
```

8. **Confirm that users in the techdocs group can now create and edit files in the <u>dtechdocs</u> directory. Users not in the techdocs group cannot edit or create files in the <u>dtechdocs</u> directory. Users tech1 and tech2 are in the techdocs group. User database1 is not in that group.**

SOLUTION: