Sticky Bit Use Case

Sticky bit is nothing but a permission bit which is set on a file or folder, thereby permitting only the owner or root user of the file or folder to modify, rename or delete the concerned directory or file. In other words, **Sticky bit is a permission bit which is used to control all other users. It basically restricts the delete or modify operations.**

We can **apply** Sticky bit by using 2 methods :
1) Symbolic Method → chmod o+t <file or directory path>
2) Numeric Method → chmod 1777 <file or directory path>

We can **remove** SUID by using 2 methods :
1) Symbolic Method → chmod o-t <file or directory path>
2) Numeric Method → chmod 777 <file or directory path>

Point 1: Consider there are 3 users one is root and another 2 is normal user that is bhushan and angular in may case. Log in with root user and create one directory called impdata and check the permission of it. Users have all access but groups and others have read and execute access. Give them all permission to directory impdata.

Point 2: Login with bhushan user go inside the impdata and make 3 directories using mkdir. Similarly , login with angular user go inside the impdata and make 3 files. After that, bhushan users can read and modify the angular user's file or directory and angular users can read and modify the bhushan user's file or directory.

```
angular@ubuntu:~$ cd /
angular@ubuntu:/$ cd impdata/
angular@ubuntu:/impdata$ ls
bhushan_dir1  bhushan_dir2  bhushan_dir3
angular@ubuntu:/impdata$ touch angular_file{1..4}
angular@ubuntu:/impdata$ ls
angular_file1  angular_file3  bhushan_dir1  bhushan_dir3
angular_file2  angular_file4  bhushan_dir2
angular@ubuntu:/impdata$
```

If we delete the file from bhushan user which is owned by angular user and vice versa then it is possible.

```
bhushan@ubuntu:/impdata$ ls
bhushan_dir1  bhushan_dir2  bhushan_dir3
bhushan@ubuntu:/impdata$ rm -rf angular_file3
bhushan@ubuntu:/impdata$ ls
angular_file1  angular_file2  angular_file4  bhushan_dir1  bhushan_dir2
bhushan@ubuntu:/impdata$
```

```
angular@ubuntu:/impdata$ ls
angular_file1  angular_file3  bhushan_dir1  bhushan_dir3
angular_file2  angular_file4  bhushan_dir2
angular@ubuntu:/impdata$ rm -rf bhushan_dir3
angular@ubuntu:/impdata$ ls
angular_file1  angular_file3  bhushan_dir1
angular_file2  angular_file4  bhushan_dir2
angular@ubuntu:/impdata$
```

Point 3: Any user can access any user's files or directories so to restrict delete or modify operations we use sticky bit. Now, we apply sticky bit on impdata directory with numeric mode.

```
root@ubuntu:/# ls -la | grep impdata
drwxrwxrwx  2 root root      4096 Feb  9 09:31 impdata
root@ubuntu:/# chmod 1777 impdata
root@ubuntu:/# ls -la | grep impdata
drwxrwxrwt  4 root root      4096 Feb  9 09:45 impdata
root@ubuntu:/#
```

Now try to modify or delete the file or directory from bhushan and angular user, we get an operation permitted error.

```
bhushan@ubuntu:/impdata$ ls
angular_file1  angular_file2  angular_file4  bhushan_dir1  bhushan_dir2
bhushan@ubuntu:/impdata$ rm -rf angular_file1
rm: cannot remove 'angular_file1': Operation not permitted
bhushan@ubuntu:/impdata$ rm -rf angular_file2
rm: cannot remove 'angular_file2': Operation not permitted
bhushan@ubuntu:/impdata$
```

```
angular@ubuntu:/impdata$ ls
angular_file1  angular_file3  bhushan_dir1
angular_file2  angular_file4  bhushan_dir2
angular@ubuntu:/impdata$ rm -rf bhushan_dir1
rm: cannot remove 'bhushan_dir1': Operation not permitted
angular@ubuntu:/impdata$
```

Point 4: If we want to remove the sticky bit, we use a numeric method to revoke it.

```
root@ubuntu:/# ls -la | grep impdata
drwxrwxrwt   4 root root      4096 Feb  9 09:45 impdata
root@ubuntu:/# chmod 777 impdata
root@ubuntu:/# ls -la | grep impdata
drwxrwxrwx   4 root root      4096 Feb  9 09:45 impdata
root@ubuntu:/#
```

After removing the sticky bit try to delete the file or directory we are able to delete it easily.

```
bhushan@ubuntu:/impdata$ rm -rf angular_file1
bhushan@ubuntu:/impdata$ rm -rf angular_file2
bhushan@ubuntu:/impdata$ ls
angular_file4  bhushan_dir1  bhushan_dir2
bhushan@ubuntu:/impdata$ rm -rf angular_file4
bhushan@ubuntu:/impdata$
```

```
angular@ubuntu:/impdata$ rm -rf bhushan_dir1
angular@ubuntu:/impdata$ rm -rf bhushan_dir2
angular@ubuntu:/impdata$ ls
angular@ubuntu:/impdata$
```