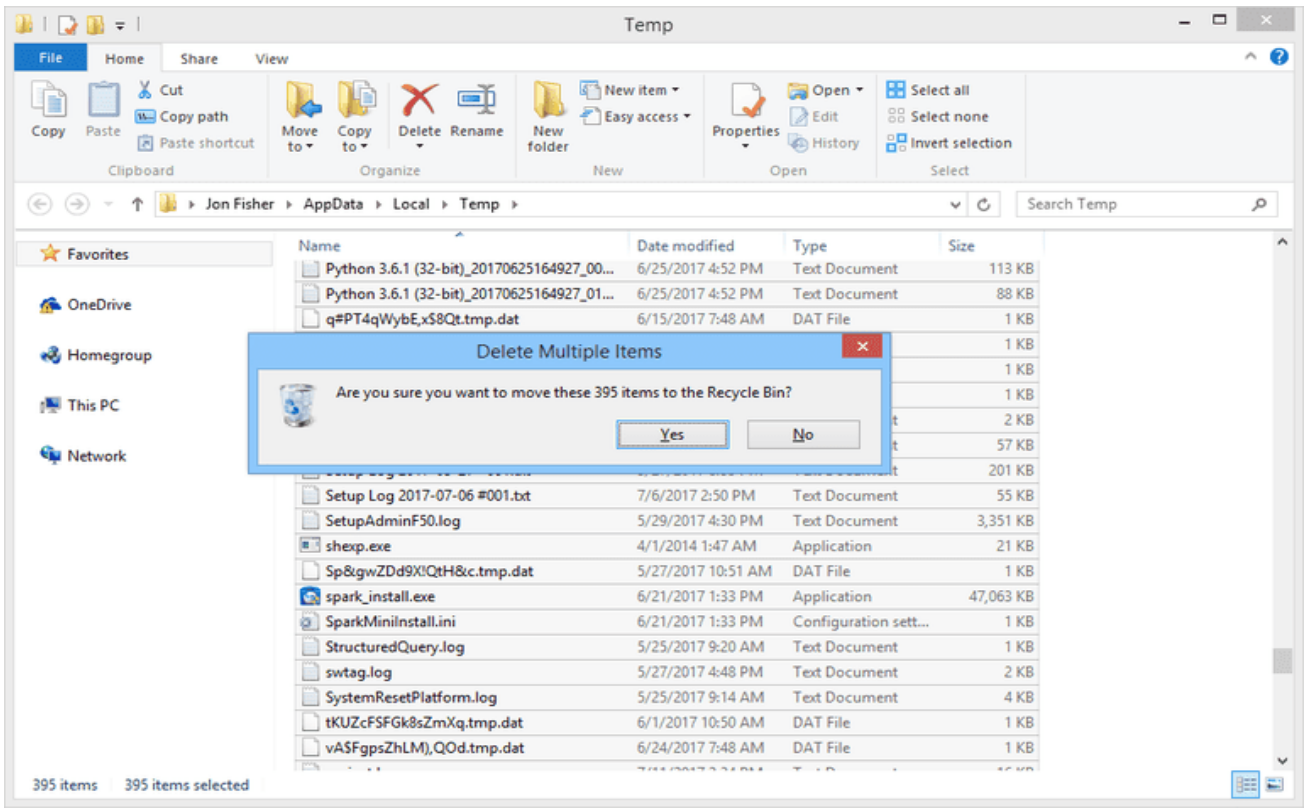
Operating System Mini-Project

File Lifetime

AIM: File Lifetimes (After the appointed end of file lifetime the file automatically disappears)

PROBLEM STATEMENT:

Temporary files (**TMP**), are files created to temporarily contain information while a new file is being made. Some programs create temporary files and then leave them behind - they do not delete them. This can happen because the program crashed or the developer of the program simply forgot to add the code needed to delete the temporary files after the program is done with them. The temporary files left behind can accumulate over time and consume a lot of disk space. One really easy way to free up some disk space is to delete temporary files. Temporary files may be deleted manually. Operating systems may have "cleaner" scripts that remove files if they have not been accessed in a certain amount of time. But all this process are time taken. Or we always need to keep a track to check temporary files, follow some steps for deletion and so on....



THEORY:

About File Lifetime:-

File lifetime is the technique in which we assign a specific time to that file at the time of creating file. That means we set lifetime to that file. When this file appointed end of life, the file automatically disappears.

Code:-

```
_files=`ls`
for file in $files
do
        if getfattr -n user.flt --only-values $file > /dev/null 2>&1
        then
                flt=`getfattr -n user.flt --only-values $file`
                num="$(echo $flt | cut -d' ' -f1)"
                unit="$(echo $flt | cut -d' ' -f2)"
                now=`date +"%c"`
                fad1=`stat -c %x $file | cut -d' ' -f 1-2`
                fad2=`date -d "$fad1" +"%c"`
                newdate=`date --date="$fad2 +$num $unit" +"%c"`
                d1=`date -d"${newdate}" +%Y%m%d%H%M%S`
                d2=`date -d"${now}" +%Y%m%d%H%M%S`
                if [ $d1 -lt $d2 ]
                then `rm $file`
                fi
        fi
done
```

Steps to call the above script automatically after user logs in to desktop:-

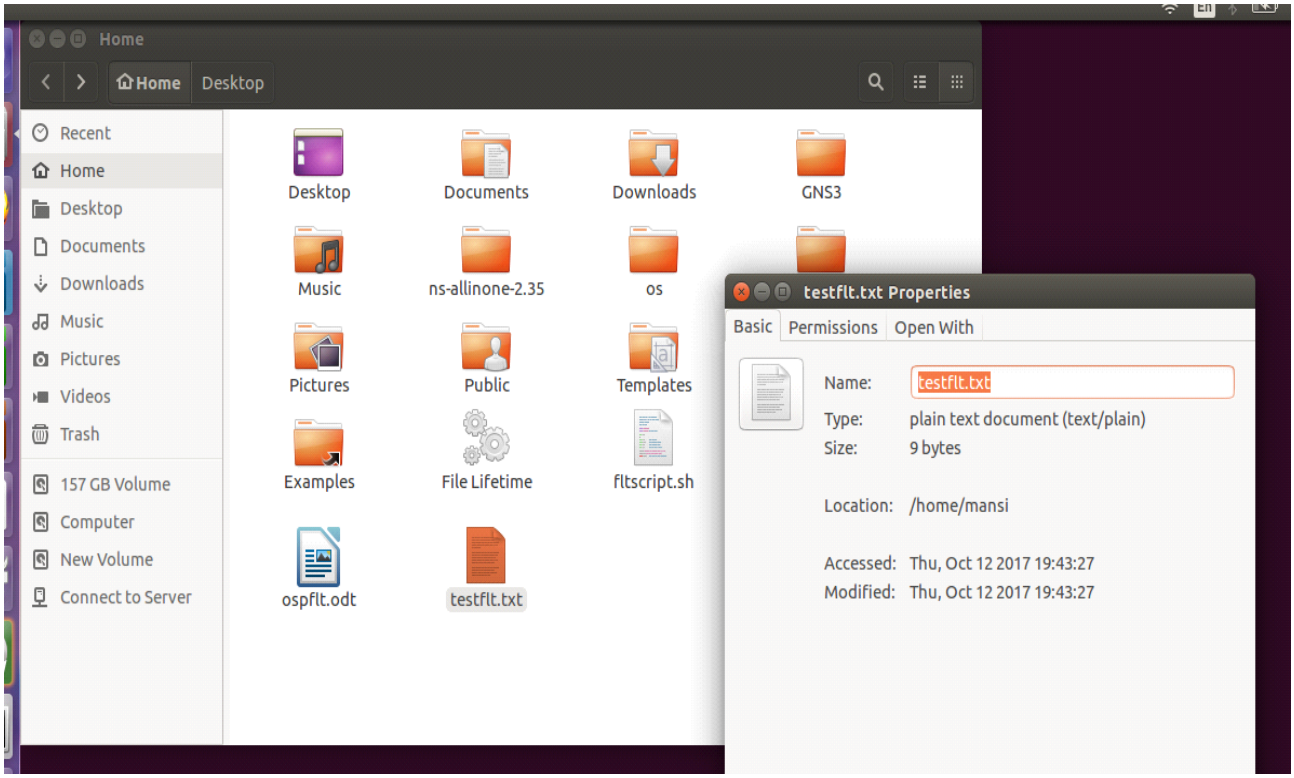
1) $ nano ~/.config/autostart/my_script.desktop

2) [Desktop Entry]
Type=Application
Name=File Lifetime
Exec=sh fltscript.sh
Icon=system-run
X-GNOME-Autostart-enabled=true

3) Properties --> Permissions --> Allow executing file as program

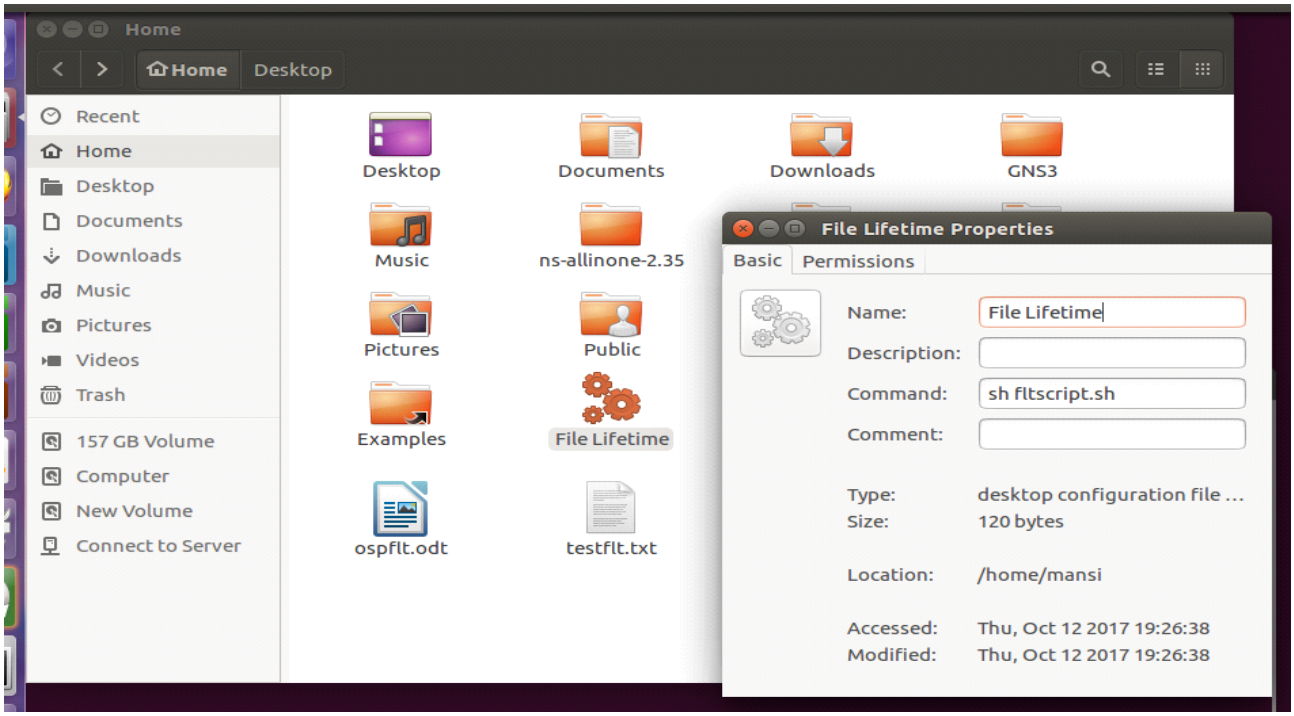
Screenshots:-

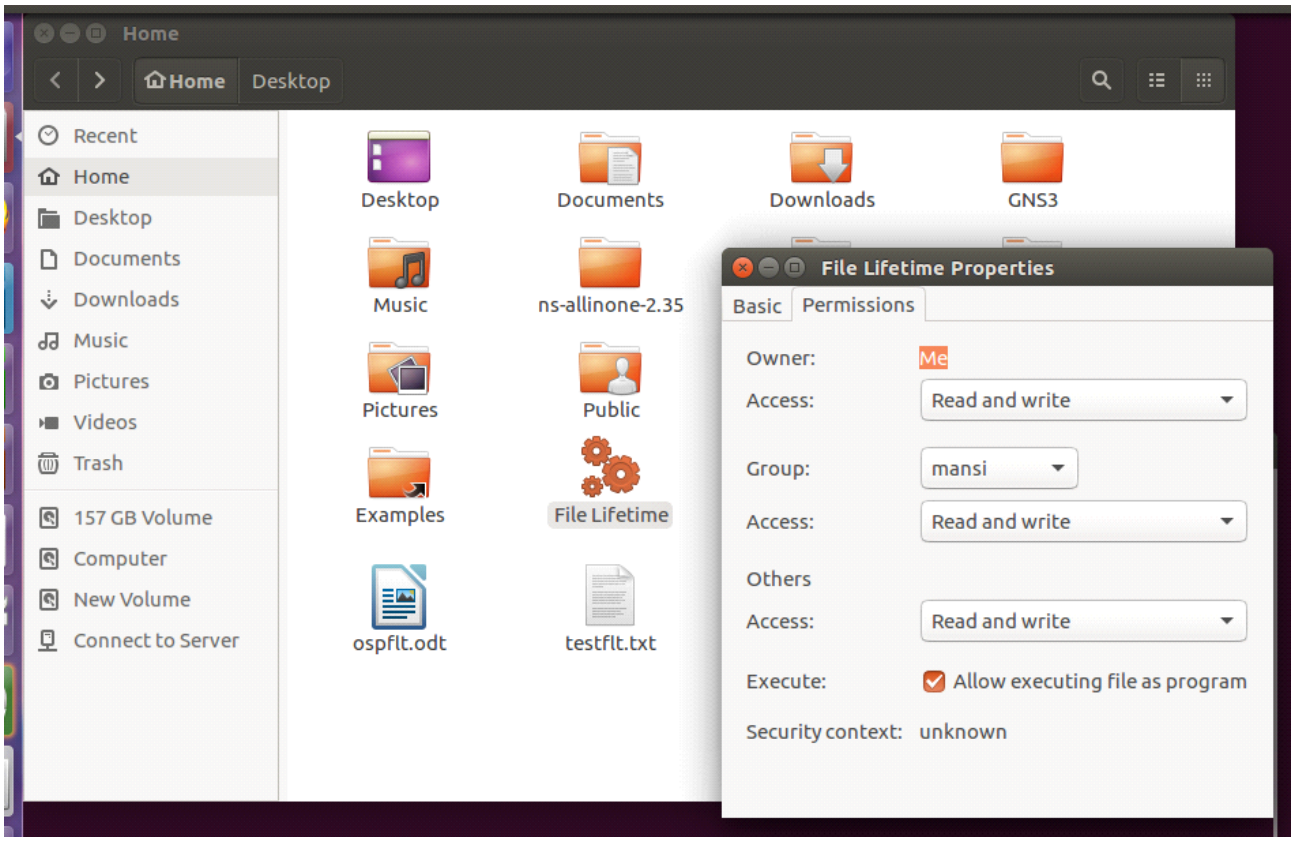
1) Create a file (testflt.txt)



2) Setting user.flt attribute to file indicating file lifetime

3) Properties of desktop configuration file





4) File (testflt.txt) deleted after user login