Computer Engineering 176:
Lab Assignment 4

Assignment

Write a pair of shell scripts, `del` and `undel`, to easily delete and undelete files. Instead of immediately deleting a file, the `del` command will move the file to another location known as the *trash can*. The `undel` command will restore a file from the trash can, if possible. Your scripts must work correctly on the HP-UX platforms used in the lab.

Safely Deleting a File

The `del` program safely deletes a file by moving the file into the trash can, which is a directory used to hold deleted files. The directory can be specified by the variable TRASH. If this variable is not set or empty, then a default directory provided by `del` (and also `undel`) is used. The file located in the trash can is called the recovery file.

Since the user may delete multiple files with the same name but within different directories, the `del` program must accommodate this situation by having different recovery files. A simple solution is to use recreate the directory structure containing the deleted file under the trash can directory. For example, if TRASH was set to `/tmp/trash`, and the file `example` was located in the directory `/home/student`, then the corresponding recovery file would be `/tmp/trash/home/student/example`.

Note: This is not as easy as it first appears. The user may try to delete `../filename` or `subdir/filename`. The first tricky part of the assignment is determining the absolute path to the directory containing the file. The second tricky part of the assignment is determining how to recreate the directory structure. A thorough look through the `mkdir` manual page will help with the latter.

Grading

Your assignment will be graded based on the following criteria:

- correctness: Do your programs work for all the different pathnames as shown in the examples?
- comments: Is there at least a header demonstrating what each script does?
- robustness: How do your programs handle unreadable or nonexistent files? What if the command syntax is incorrect? What if the trash can directory cannot be created?

When you are finished, demonstrate their use to the Teaching Assistant and provide hardcopies of each script.

Examples

```
% pwd
/home/atkinson/test
% del fred ../wilma dir/barney /tmp/betty
% undel fred ../wilma
% cd dir
% undel barney
% undel betty
betty: No such file or directory
```