

## Demonstration

Here's a demonstration of the File System we have created. Let's go through step-wise-step:

1. Here's the root directory initialization and command run: present working directory, listing, long/all listing.

**Figure 15**

*Initialize, pwd, ls*

```
PS C:\Users\DELL\Desktop\c> python -u "c:\Users\DELL\Desktop\c\main.py"
Enter the root path for the file system: C:/Users/DELL/Desktop/FILESYSTEM/root
Enter a command: pwd
Current working directory: C:/Users/DELL/Desktop/FILESYSTEM/root
Enter a command: ls
Contents of directory 'C:/Users/DELL/Desktop/FILESYSTEM/root':
Directory: Dir
```

**Figure 16**

*Ls -l*

```
Enter a command: ls -l
Detailed contents of directory 'C:/Users/DELL/Desktop/FILESYSTEM/root':
Directory: Dir
Name: Dir
Type: Directory
Timestamp: 2023-08-05 14:57:28.684026
Size: 0 B
Permissions: 777
```

**Figure 17**

*Case sensitivity in cd*

2. Here's the demonstration case sensitivity while traveling through directories.

```
Enter a command: cd dir
Directory 'dir' does not exist.
Enter a command: cd Dir
```

3. Here's the creation, writing, reading, and removal of a file.

**Figure 18**

*Ls, create, cat, echo, rm*

```
Enter a command: ls
Contents of directory 'C:/Users/DELL/Desktop/FILESYSTEM/root\Dir':
Enter a command: create file1
File 'file1' created.
Enter a command: ls
Contents of directory 'C:/Users/DELL/Desktop/FILESYSTEM/root\Dir':
File: file1
Enter a command: echo hello file1
Text written to 'file1'.
Enter a command: cat file1
hello
Enter a command: rm file1
File 'file1' removed.
Enter a command: ls
Contents of directory 'C:/Users/DELL/Desktop/FILESYSTEM/root\Dir':
Enter a command: █
```

4. Here's creation, delete, and error handling during deleting of directories.

**Figure 19**

*Cd .., mkdir, rmdir*

```
Enter a command: cd ..
Enter a command: mkdir dir2
Directory 'dir2' created.
Enter a command: ls
Contents of directory 'C:/Users/DELL/Desktop/FILESYSTEM/root':
Directory: Dir
Directory: dir2
Enter a command: rmdir dir2
Directory 'dir2' removed.
Enter a command: rmdir dir2
Directory 'dir2' does not exist.
Enter a command: mkdir Dir
Directory 'Dir' already exists.
Enter a command: █
```

**Figure 20**

*Create, rename*

```
Enter a command: create testfile
File 'testfile' created.
Enter a command: rename testfile testfile1
'testfile' renamed to 'testfile1'.
Enter a command: rename Dir dir
'Dir' renamed to 'dir'.
Enter a command: ls
Contents of directory 'C:/Users/DELL/Desktop/FILESYSTEM/root':
Directory: dir
File: testfile1
Enter a command: █
```

5. Here's the file moving and copying command and execution.

**Figure 21**

*Moving*

```
Enter a command: create file70
File 'file70' created.
Enter a command: move file70 C:\Users\DELL\Desktop\FILESYSTEM\root\nextdir
'file70' moved to 'C:\Users\DELL\Desktop\FILESYSTEM\root\nextdir'.
Enter a command: cd ..
Enter a command: pwd
Current working directory: C:\Users\DELL\Desktop\FILESYSTEM\root\nextdir
Enter a command: ls
Contents of directory 'C:\Users\DELL\Desktop\FILESYSTEM\root\nextdir':
Directory: dir
Directory: dir0
File: file70
Enter a command: █
```

**Figure 22**

### *Copying*

```
Enter a command: mkdir dir0
Directory 'dir0' created.
Enter a command: copy dir0 C:\Users\DELL\Desktop\FILESYSTEM\root\nextdir\dir
Directory 'dir0' copied to 'C:\Users\DELL\Desktop\FILESYSTEM\root\nextdir\dir'.
Enter a command: cd dir
Enter a command: ls
Contents of directory 'C:\Users\DELL\Desktop\FILESYSTEM\root\nextdir\dir':
Directory: dir0
Enter a command: █
```

6. Here's the file permission changing command.

**Figure 23**

### *Chmod file*

```
Enter a command: chmod file70 764
Permissions for 'file70' set to '764'.
File system permissions for 'file70' updated to '764'.
Enter a command: ls -l
```

7. Here's the directory permission change.

**Figure 24**

### *Chmod directory*

```
Enter a command: chmod dir0 647
Permissions for 'dir0' set to '647'.
File system permissions for 'dir0' updated to '647'.
```

8. Here's the error handling during permission changing.

**Figure 26**

### *Error handling*

```
Enter a command: chmod dir0 888
Invalid permissions value. Use octal notation (0-777).
```

9. Here's the use of nano to append the content.

**Figure 27**

### *Nano append*

```
Enter a command: nano file70
Existing content:

Do you want to (a)ppend or (o)verwrite the content?
a
Enter new content (type 'exit' on a new line to save and exit):
hi this is the appended line
exit
Content appended to file.
Enter a command: cat file70

hi this is the appended line
Enter a command: 
```

10. Here's the use of nano error handling.

**Figure 28**

*Nano error handling*

```
Enter a command: nano file70
Existing content:

hi this is the appended line
Do you want to (a)ppend or (o)verwrite the content?
1
Invalid choice. Use 'a' to append or 'o' to overwrite.
Enter a command: █
```

11. Here's the use of the exit command to exit the CLI interface of the file system.

**Figure 29**

*Exiting the interface*

```
Enter a command: exit
PS C:\Users\DELL\Desktop\c> █
```