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find command in Linux with examples

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The **find** command in UNIX is a command line utility for walking a file hierarchy. It can be used to find files and directories and perform subsequent operations on them. It supports searching by file, folder, name, creation date, modification date, owner and permissions. By using the '-exec' other UNIX commands can be executed on files or folders found.
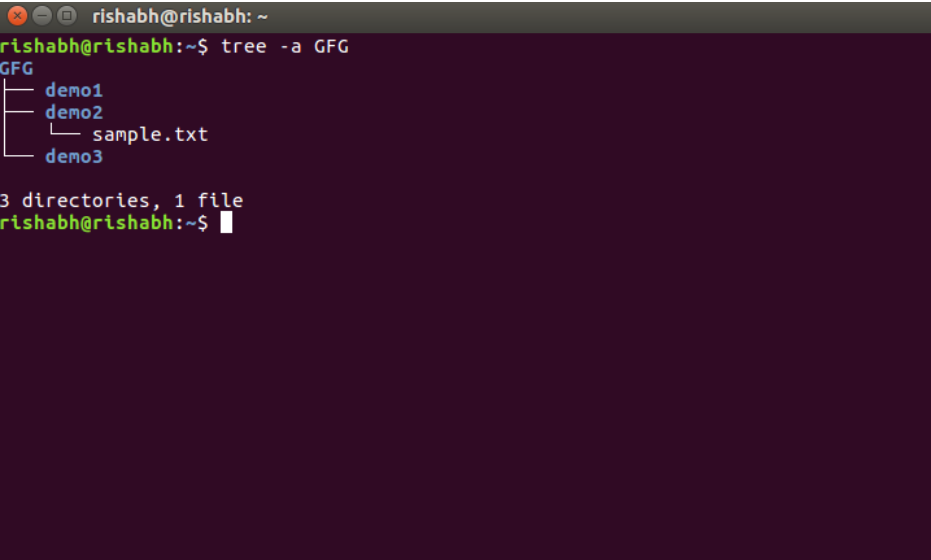
Syntax :

```
$ find [where to start searching from]
  [expression determines what to find] [-options] [what to find]
```

Options :

- **-exec CMD:** The file being searched which meets the above criteria and returns 0 for as its exit status for successful command execution.
- **-ok CMD :** It works same as -exec except the user is prompted first.
- **-inum N :** Search for files with inode number 'N'.
- **-links N :** Search for files with 'N' links.
- **-name demo :** Search for files that are specified by 'demo'.
- **-newer file :** Search for files that were modified/created after 'file'.
- **-perm octal :** Search for the file if permission is 'octal'.
- **-print :** Display the path name of the files found by using the rest of the criteria.
- **-empty :** Search for empty files and directories.
- **-size +N/-N :** Search for files of 'N' blocks; 'N' followed by 'c'can be used to measure size in characters; '+N' means size > 'N' blocks and '-N' means size < 'N' blocks.
- **-user name :** Search for files owned by user name or ID 'name'.
- **\(expr \) :** True if 'expr' is true; used for grouping criteria combined with OR or AND.
- **! expr :** True if 'expr' is false.

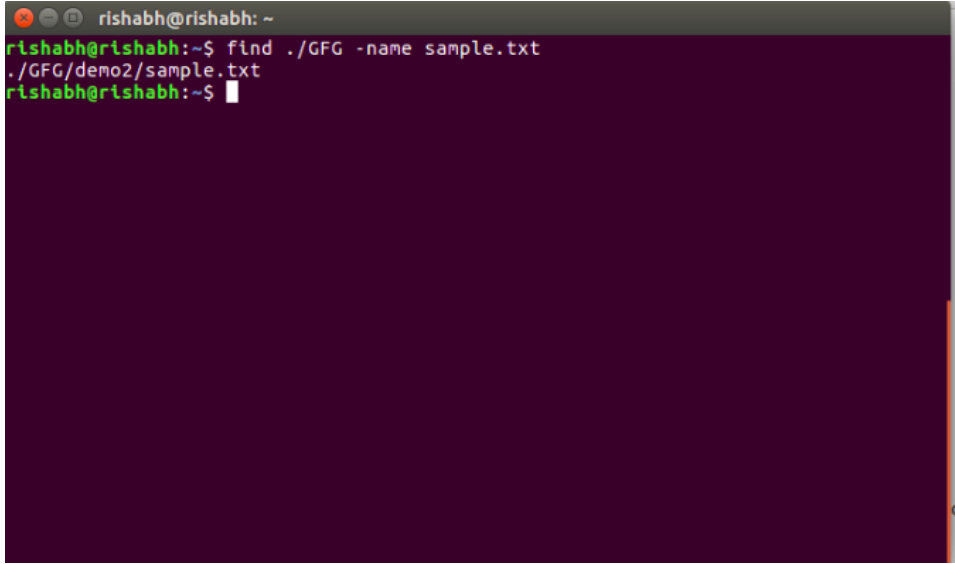**Examples :** Consider the following tree hierarchy :

```
🔴🟡🟢  rishabh@rishabh: ~
rishabh@rishabh:~$ tree -a GFG
GFG
├── demo1
├── demo2
│   └── sample.txt
└── demo3

3 directories, 1 file
rishabh@rishabh:~$ ▊
```

1. Search a file with specific name.

```
$ find ./GFG -name sample.txt
```
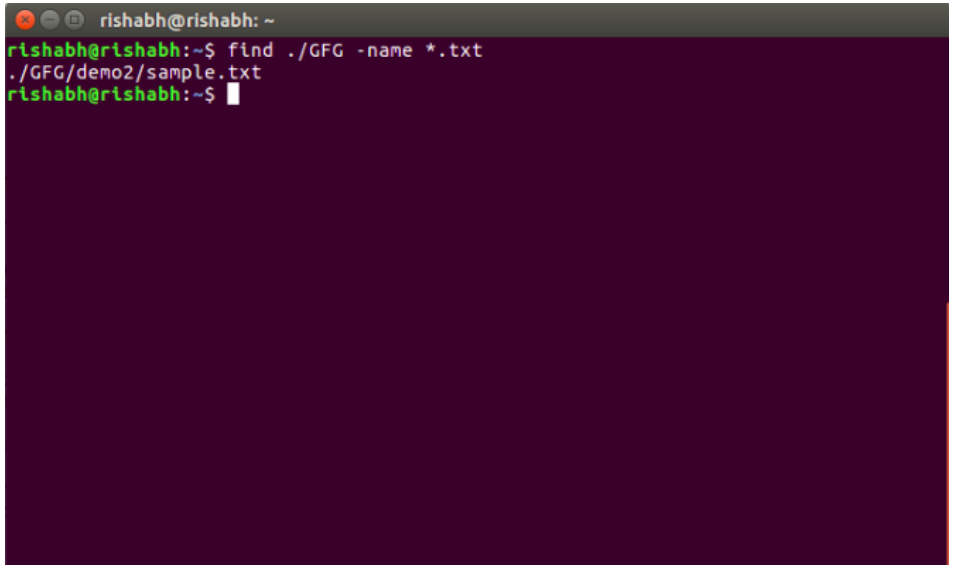
It will search for sample.txt in GFG directory.

Output :

2. Search a file with pattern.

```
$ find ./GFG -name *.txt
```

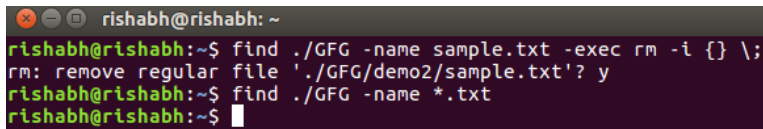It will give all files which have '.txt' at the end.

Output :

3. How to find and delete a file with confirmation.

```
$ find ./GFG -name sample.txt -exec rm -i {} \;
```

When this command is entered, a prompt will come for confirmation, if you want to delete sample.txt or not. if you enter 'Y/y' it will delete the file. **Output :**
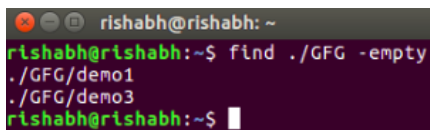
```
rishabh@rishabh:~$ find ./GFG -name sample.txt -exec rm -i {} \;
rm: remove regular file './GFG/demo2/sample.txt'? y
rishabh@rishabh:~$ find ./GFG -name *.txt
rishabh@rishabh:~$
```

4. Search for empty files and directories.

```
$ find ./GFG -empty
```

This command find all empty folders and files in the entered directory or sub-directories.

Output :

```
rishabh@rishabh:~$ find ./GFG -empty
./GFG/demo1
./GFG/demo3
rishabh@rishabh:~$
```

5. Search for file with entered permissions.

```
$ find ./GFG -perm 664
```

This command find all the files in the GFG directory or sub-directory with the given permissions.

Output :

6. Search text within multiple files.

```
$ find ./ -type f -name "*.txt" -exec grep 'Geek'  {} \;
```

This command print lines which have 'Geek' in them and '-type f' specifies the input type is a file.

Output :

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?list=PLqM7alHXFySFc4KtwEZTANgmyJm3NqS_L

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