

# Networking and System Administration Lab

## Basic Linux Commands

Submitted To:

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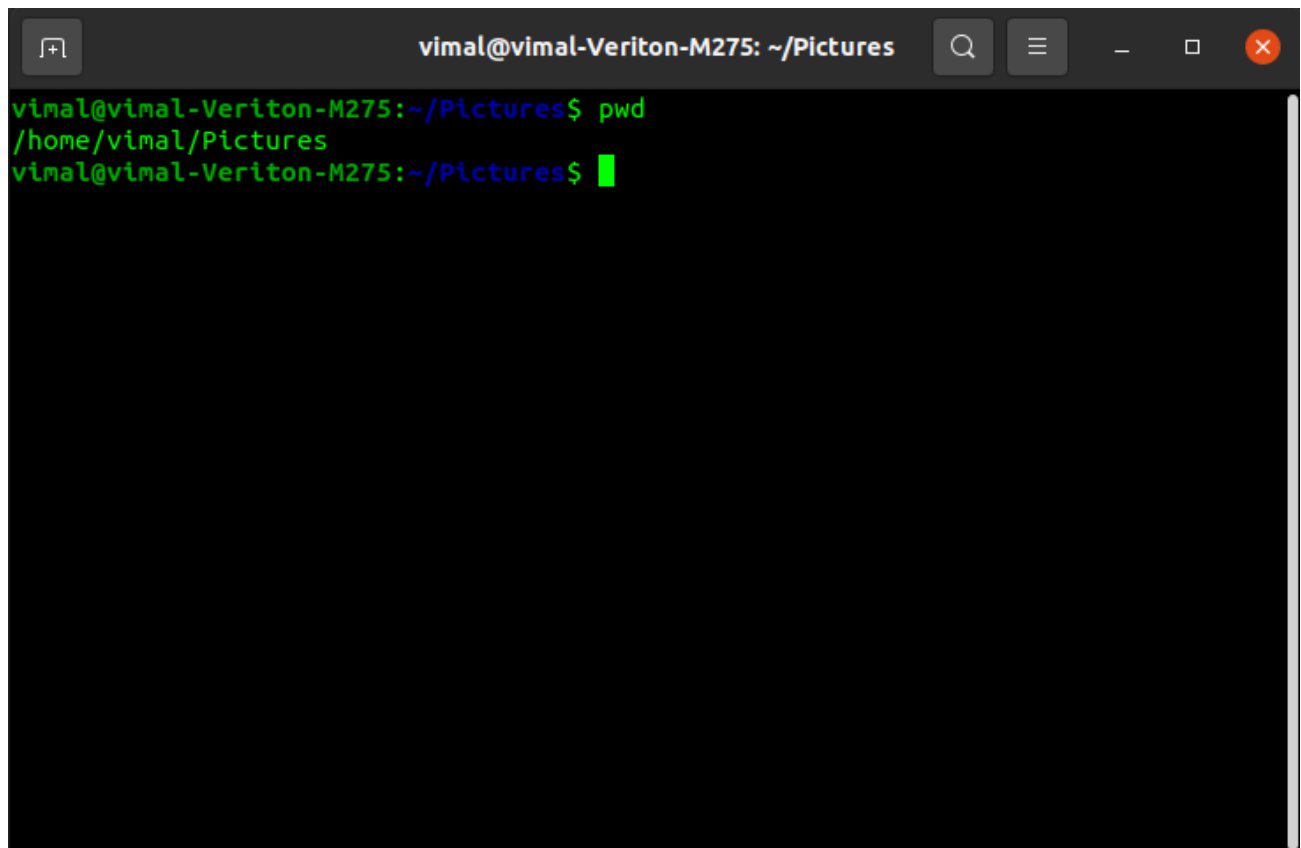
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# BASIC LINUX COMMANDS

## 1. pwd (Print Working Directory)

Use the pwd command to find out the path of the currentworking directory (folder) you're in.

A screenshot of a Linux terminal window. The title bar at the top shows the user 'vimal' on host 'vimal-Veriton-M275' in the directory '~/Pictures'. The terminal text shows the command 'pwd' being entered, followed by the output '/home/vimal/Pictures' on the next line. The prompt 'vimal@vimal-Veriton-M275:~/Pictures\$' is visible at the end of the line.

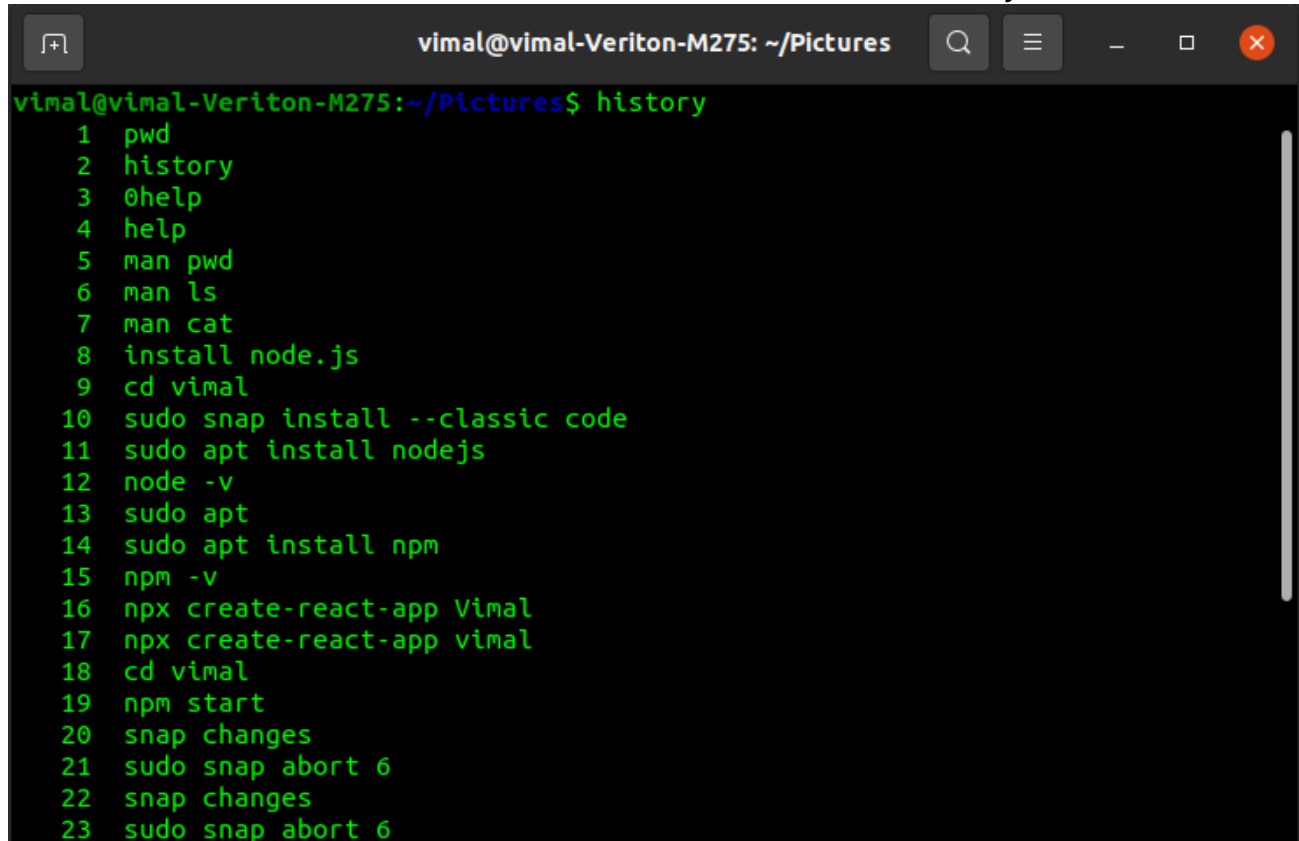
```
vimal@vimal-Veriton-M275: ~/Pictures
vimal@vimal-Veriton-M275:~/Pictures$ pwd
/home/vimal/Pictures
vimal@vimal-Veriton-M275:~/Pictures$
```

## 2. history

- When you have been using Linux for a certain period of time, you will quickly notice that you can run hundreds of commands everyday. As such, running history command is particularly useful if you want to review the commands you have entered

before.

- History
- !command number to run a command from history

A terminal window titled 'vimal@vimal-Veriton-M275: ~/Pictures' with standard window controls. The terminal shows the command 'history' being executed, which lists 23 previous commands. The commands include 'pwd', 'history', '0help', 'help', 'man pwd', 'man ls', 'man cat', 'install node.js', 'cd vimal', 'sudo snap install --classic code', 'sudo apt install nodejs', 'node -v', 'sudo apt', 'sudo apt install npm', 'npm -v', 'npx create-react-app Vimal', 'npx create-react-app vimal', 'cd vimal', 'npm start', 'snap changes', 'sudo snap abort 6', 'snap changes', and 'sudo snap abort 6'.

```
vimal@vimal-Veriton-M275: ~/Pictures$ history
1  pwd
2  history
3  0help
4  help
5  man pwd
6  man ls
7  man cat
8  install node.js
9  cd vimal
10 sudo snap install --classic code
11 sudo apt install nodejs
12 node -v
13 sudo apt
14 sudo apt install npm
15 npm -v
16 npx create-react-app Vimal
17 npx create-react-app vimal
18 cd vimal
19 npm start
20 snap changes
21 sudo snap abort 6
22 snap changes
23 sudo snap abort 6
```

### 3. man

If we are confused about the function of certain Linux commands we can easily learn how to use them right from Linux's shell by using the man command. For instance, entering **man tail** will show the manual instruction of the **tail** command.

**man ls**

```
vimal@vimal-Veriton-M275: ~/Pictures
vimal@vimal-Veriton-M275:~/Pictures$ man ls
```

```
LS(1)                                User Commands                                LS(1)

NAME
  ls - list directory contents

SYNOPSIS
  ls [OPTION]... [FILE]...

DESCRIPTION
  List information about the FILES (the current directory by default).
  Sort entries alphabetically if none of -cftuvSUX nor --sort is speci-
  fied.

  Mandatory arguments to long options are mandatory for short options
  too.

  -a, --all
      do not ignore entries starting with .

  -A, --almost-all
      do not list implied . and ..

  --author
  Manual page ls(1) line 1 (press h for help or q to quit)
```

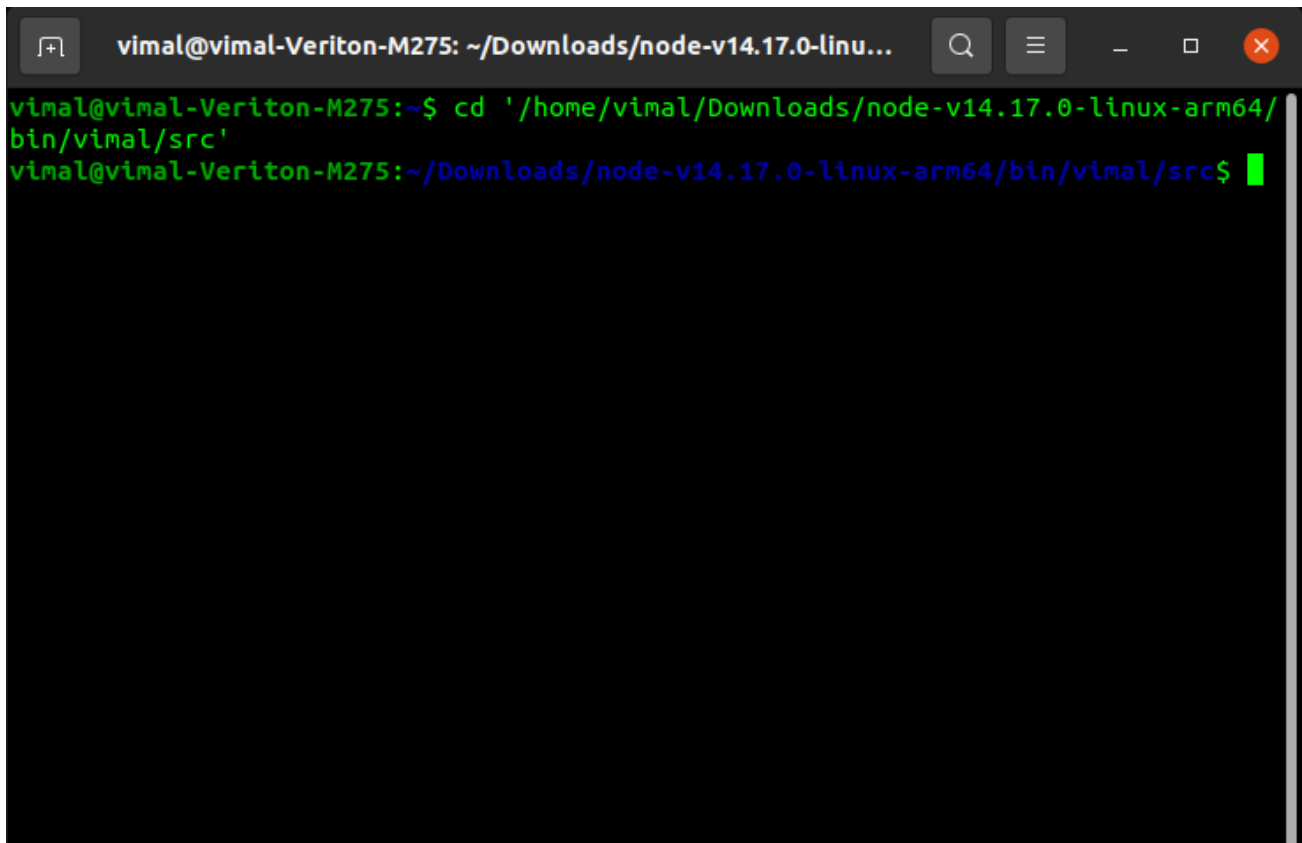
## 4. cd

To navigate through the Linux files and directories, use the `cd` .

It requires either the full path or the name of the directory, depending on the current working directory that you're in.

Shortcuts to help you navigate quickly:

- `cd ..` (with two dots) to move one directory up
- `cd` to go straight to the home folder
- `cd-` (with a hyphen) to move to your previous directory

A terminal window titled 'vimal@vimal-Veriton-M275: ~/Downloads/node-v14.17.0-linu...' is shown. The prompt is 'vimal@vimal-Veriton-M275:~\$'. The user enters the command 'cd '/home/vimal/Downloads/node-v14.17.0-linux-arm64/bin/vimal/src''. The prompt changes to 'vimal@vimal-Veriton-M275:~/Downloads/node-v14.17.0-linux-arm64/bin/vimal/src\$' and a green cursor is visible at the end of the line.

```
vimal@vimal-Veriton-M275:~/Downloads/node-v14.17.0-linu...  
vimal@vimal-Veriton-M275:~$ cd '/home/vimal/Downloads/node-v14.17.0-linux-arm64/  
bin/vimal/src'  
vimal@vimal-Veriton-M275:~/Downloads/node-v14.17.0-linux-arm64/bin/vimal/src$
```

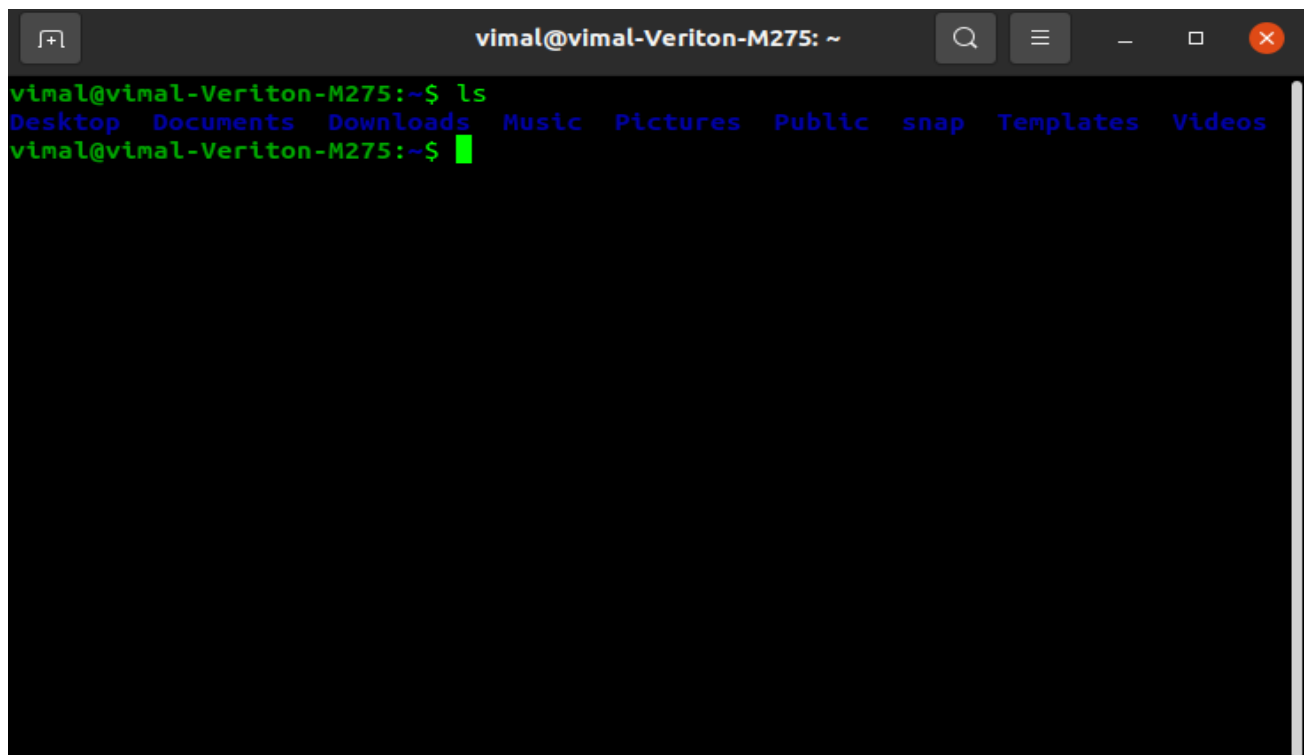
## 5. ls

The `ls` command is used to view the contents of a directory. By default, this command will display the contents of your current working directory.

There are variations you can use with the `ls` command:

- **`ls -R`** will list all the files in the sub-directories as well
- **`ls -l`** – long listing
- **`ls -a`** will show the hidden files
- **`ls -al`** will list the files and directories with detailed information like the permissions, size, owner, etc.
- **`ls -t`** lists files sorted in the order of “last modified”.
- **`ls -r`** option will reverse the natural sorting order.

Usually used in combination with other switches such as `ls -tr`. This will reverse the time-wise listing.

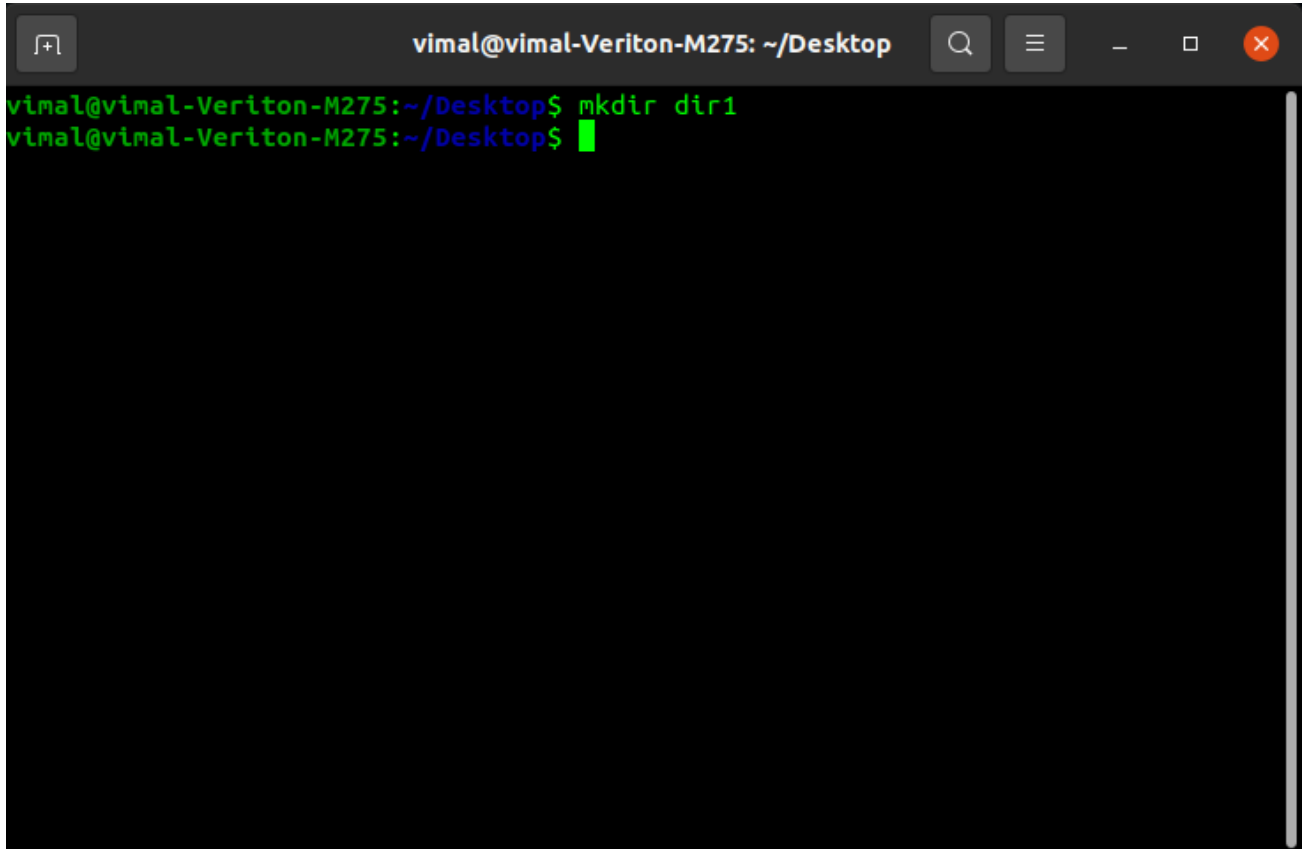
A screenshot of a terminal window titled "vimal@vimal-Veriton-M275: ~". The terminal shows the command `ls` being executed, resulting in the output: `Desktop Documents Downloads Music Pictures Public snap Templates Videos`. The prompt `vimal@vimal-Veriton-M275:~$` is visible on both lines.

```
vimal@vimal-Veriton-M275: ~  
vimal@vimal-Veriton-M275:~$ ls  
Desktop Documents Downloads Music Pictures Public snap Templates Videos  
vimal@vimal-Veriton-M275:~$
```

## 6. mkdir

Use mkdir command to make a new directory .

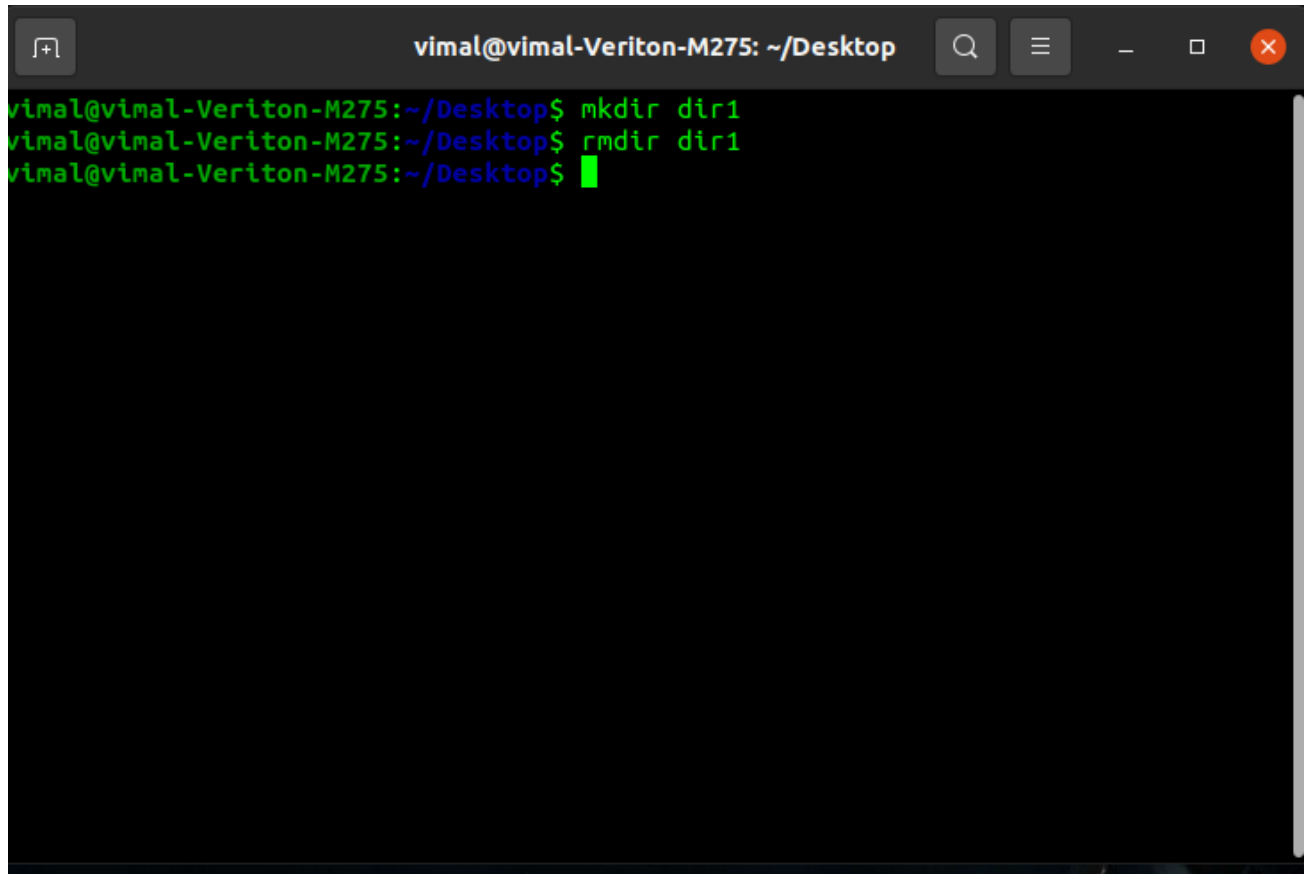
To generate a new directory inside another directory, use this Linux basic command.

A screenshot of a Linux terminal window. The window title is 'vimal@vimal-Veriton-M275: ~/Desktop'. The terminal shows two lines of text: 'vimal@vimal-Veriton-M275:~/Desktop\$ mkdir dir1' and 'vimal@vimal-Veriton-M275:~/Desktop\$' followed by a green cursor. The terminal has a dark background and a light gray scrollbar on the right side.

```
vimal@vimal-Veriton-M275: ~/Desktop
vimal@vimal-Veriton-M275:~/Desktop$ mkdir dir1
vimal@vimal-Veriton-M275:~/Desktop$
```

## 7. rmdir

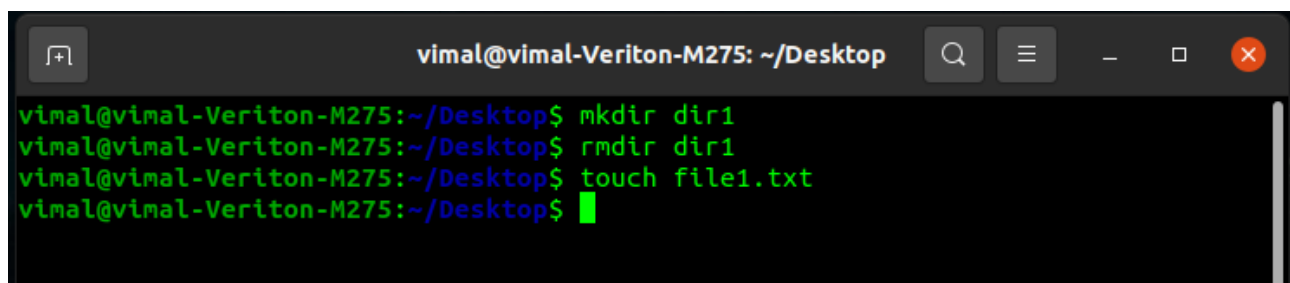
If you need to delete a directory, use the rmdir command. However, rmdir only allows you to delete empty directories.

A terminal window titled 'vimal@vimal-Veriton-M275: ~/Desktop' with a search icon, menu icon, and window control buttons. The terminal shows three lines of commands: 'mkdir dir1', 'rmdir dir1', and a blank line with a cursor.

```
vimal@vimal-Veriton-M275: ~/Desktop
vimal@vimal-Veriton-M275:~/Desktop$ mkdir dir1
vimal@vimal-Veriton-M275:~/Desktop$ rmdir dir1
vimal@vimal-Veriton-M275:~/Desktop$
```

## 8. touch

The touch command allows you to create a blank new file through the Linux command line.

A terminal window titled 'vimal@vimal-Veriton-M275: ~/Desktop' with a search icon, menu icon, and window control buttons. The terminal shows four lines of commands: 'mkdir dir1', 'rmdir dir1', 'touch file1.txt', and a blank line with a cursor.

```
vimal@vimal-Veriton-M275: ~/Desktop
vimal@vimal-Veriton-M275:~/Desktop$ mkdir dir1
vimal@vimal-Veriton-M275:~/Desktop$ rmdir dir1
vimal@vimal-Veriton-M275:~/Desktop$ touch file1.txt
vimal@vimal-Veriton-M275:~/Desktop$
```

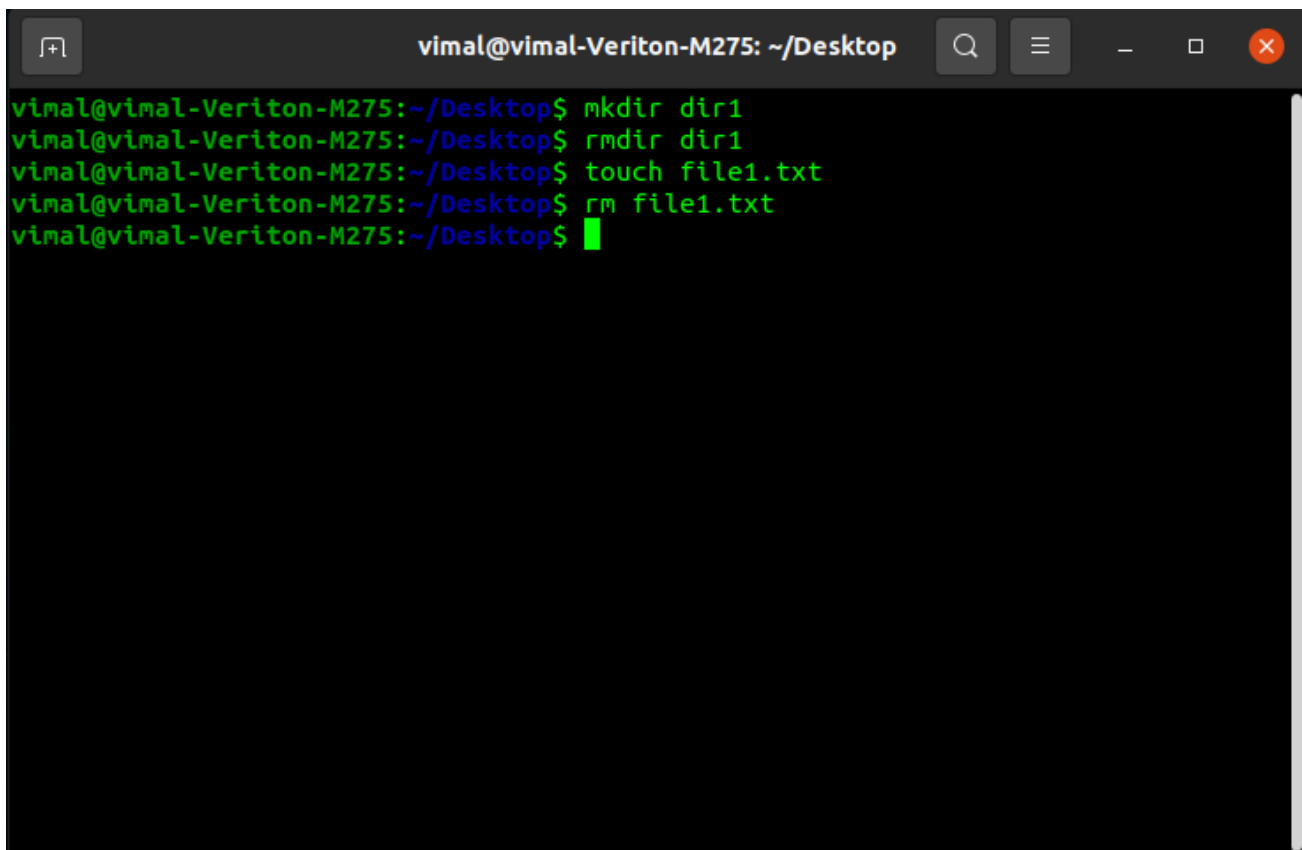


## 9. rm

The `rm` command is used to delete directories and the contents within them.

If you only want to delete the directory — as an alternative to `rmdir` — use `rm -r`.

To remove a file use **`rm filename`**

A terminal window titled 'vimal@vimal-Veriton-M275: ~/Desktop' with standard window controls. The terminal shows a sequence of commands: 'mkdir dir1', 'rmdir dir1', 'touch file1.txt', and 'rm file1.txt'. The prompt returns to '~/' after the final command.

```
vimal@vimal-Veriton-M275: ~/Desktop
vimal@vimal-Veriton-M275:~/Desktop$ mkdir dir1
vimal@vimal-Veriton-M275:~/Desktop$ rmdir dir1
vimal@vimal-Veriton-M275:~/Desktop$ touch file1.txt
vimal@vimal-Veriton-M275:~/Desktop$ rm file1.txt
vimal@vimal-Veriton-M275:~/Desktop$
```

## 10. cat

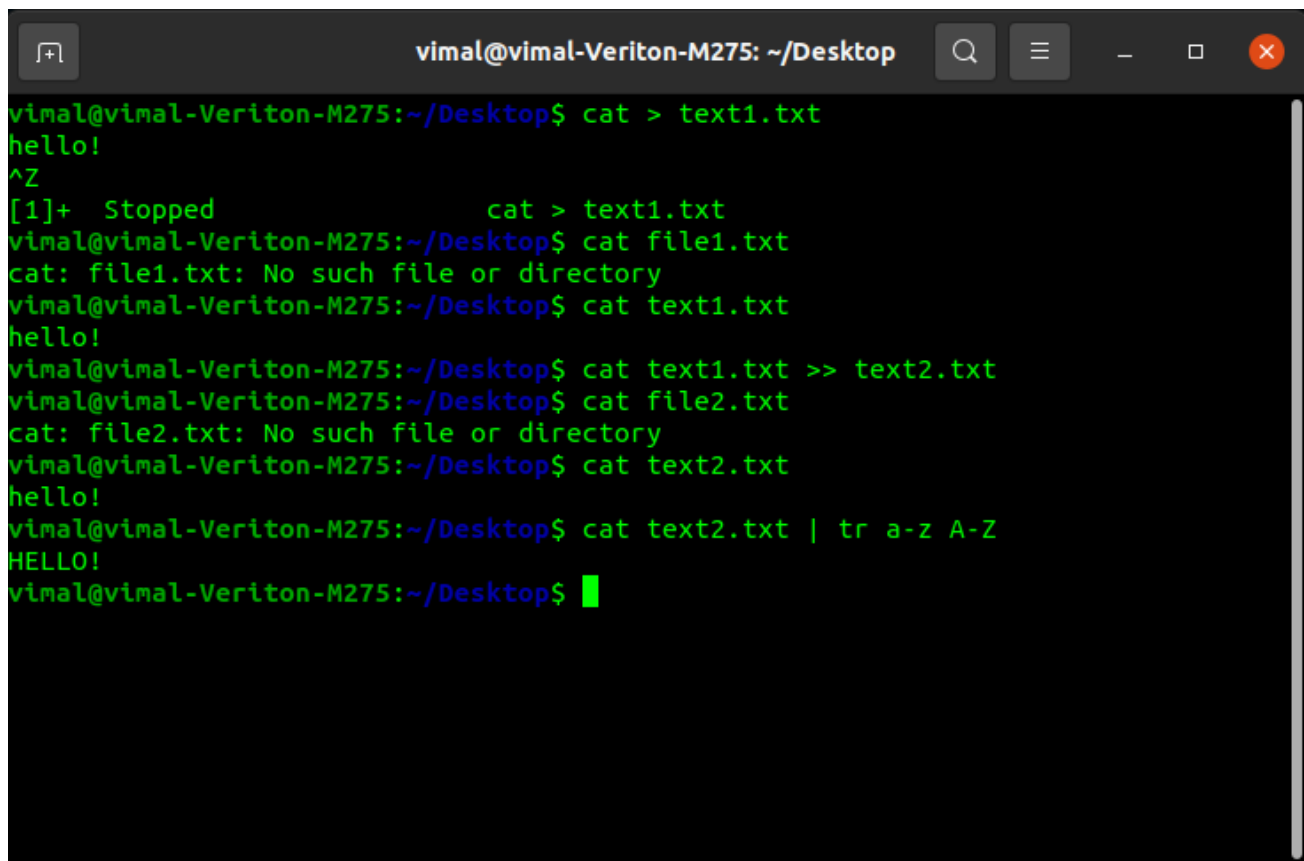
`cat` (short for concatenate) is one of the most frequently used commands in Linux. It is used to list the contents of a

file on the standard output stdout .

To run this command, type cat followed by the file's name and its extension. For instance: cat file.txt.

Here are other ways to use the cat command:

- **cat > filename** creates a new file
- **cat filename1 filename2>filename3** joins two files (1 and 2) and stores the output of them in a new file (3)
- to convert a file to upper or lower case use, **cat filename | tr a-z A-Z >output.txt**
- **cat >>myfile** insert data to a file

A terminal window titled 'vimal@vimal-Veriton-M275: ~/Desktop' with standard window controls. The terminal shows a series of commands and their outputs: 1. 'cat > text1.txt' followed by 'hello!' and '^Z', then '[1]+ Stopped cat > text1.txt'. 2. 'cat file1.txt' results in 'cat: file1.txt: No such file or directory'. 3. 'cat text1.txt' outputs 'hello!'. 4. 'cat text1.txt >> text2.txt' appends the content. 5. 'cat file2.txt' results in 'cat: file2.txt: No such file or directory'. 6. 'cat text2.txt' outputs 'hello!'. 7. 'cat text2.txt | tr a-z A-Z' outputs 'HELLO!'. The prompt is currently 'vimal@vimal-Veriton-M275:~/Desktop\$' with a green cursor.

```
vimal@vimal-Veriton-M275: ~/Desktop
vimal@vimal-Veriton-M275:~/Desktop$ cat > text1.txt
hello!
^Z
[1]+  Stopped                  cat > text1.txt
vimal@vimal-Veriton-M275:~/Desktop$ cat file1.txt
cat: file1.txt: No such file or directory
vimal@vimal-Veriton-M275:~/Desktop$ cat text1.txt
hello!
vimal@vimal-Veriton-M275:~/Desktop$ cat text1.txt >> text2.txt
vimal@vimal-Veriton-M275:~/Desktop$ cat file2.txt
cat: file2.txt: No such file or directory
vimal@vimal-Veriton-M275:~/Desktop$ cat text2.txt
hello!
vimal@vimal-Veriton-M275:~/Desktop$ cat text2.txt | tr a-z A-Z
HELLO!
vimal@vimal-Veriton-M275:~/Desktop$
```