CS110: Introduction to Linux Commands

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Commands

Shell A program which accepts commands and passes it to the operating system

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: `Alt+F2` and provide input: `gnome-terminal`

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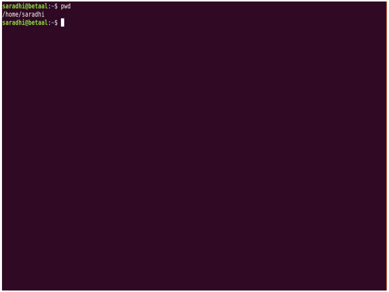
Need More Terminals? Repeat any of the above steps any number of times.

Important shell treats the contents you type as is: PWD is different from pwd

Terminal Images - 1

```
saradhi@betaal:~$
```

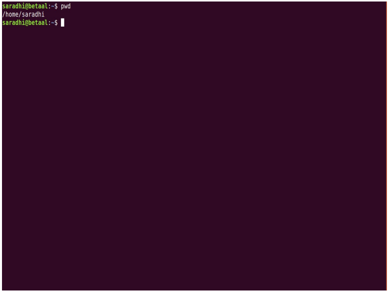
Terminal Images - 2



```
saradhi@betaal:~$ pwd
/home/saradhi
saradhi@betaal:~$ 
```

pwd - 1 Present Working Directory (i. read as folder; ii. read guest instead of saradhi)

Terminal Images - 2



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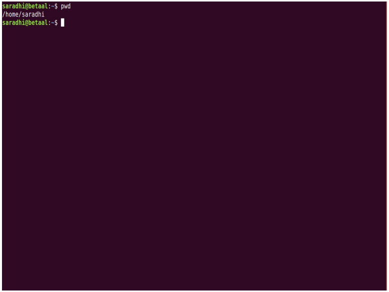

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saradhi@betaal:~$ pwd
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saradhi@betaal:~$ 
```

pwd - 1 Present Working Directory (i. read as folder; ii. read guest instead of saradhi)

pwd - 2 Present Working Folder

pwd - 3 It is important to identify where you are working; when you create files or folders it is with respect to the present working folder

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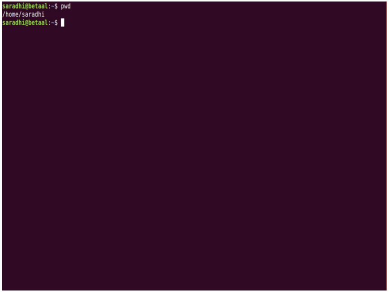

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pwd - 4 /home/saradhi is the home folder

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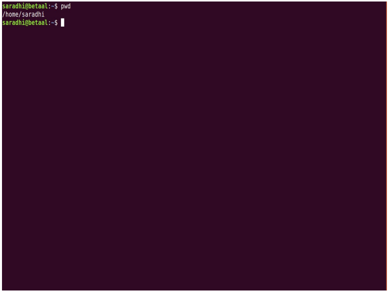

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saradhi@betaal:~$ pwd
/home/saradhi
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```

pwd - 1 Present Working Directory (i. read as folder; ii. read guest instead of saradhi)

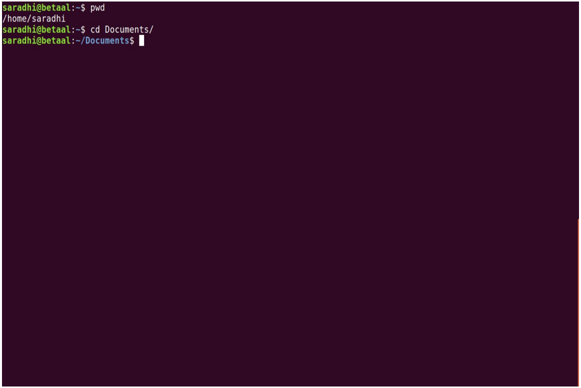
pwd - 2 Present Working Folder

pwd - 3 It is important to identify where you are working; when you create files or folders it is with respect to the present working folder

pwd - 4 /home/saradhi is the home folder

Creation Files and folders which are created reside in the HOME folder

Terminal - Where it takes you?



```
saradhi@betaal:~$ pwd
/home/saradhi
saradhi@betaal:~$ cd Documents/
saradhi@betaal:~/Documents$ 
```

Navigation - List folder contents

List folder contents that is asking what are the files and folder within
home folder.

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Command `ls`

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Command `ls`

Input to `ls`

- `-a`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`
- `-a`
- `-l`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`

- `-a`
- `-l`
- `-h`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`
- `-a`
- `-l`
- `-h`
- `-Q`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`

- `-a`
- `-l`
- `-h`
- `-Q`

Input to `ls -a`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`
- `-a`
- `-l`
- `-h`
- `-Q`

Input to `ls -a`

Input to `ls -l`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`

- `-a`
- `-l`
- `-h`
- `-Q`

Input to `ls -a`

Input to `ls -l`

Input to `ls -h`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

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- `-a`
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Input to `ls -a`

Input to `ls -l`

Input to `ls -h`

Input to `ls -Q`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`
- `-a`
- `-l`
- `-h`
- `-Q`

Input to `ls -a`

Input to `ls -l`

Input to `ls -h`

Input to `ls -Q`

Combine inputs You can construct combination of inputs mentioned above

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`
- `-a`
- `-l`
- `-h`
- `-Q`

Input to `ls -a`

Input to `ls -l`

Input to `ls -h`

Input to `ls -Q`

Combine inputs You can construct combination of inputs mentioned above `-al`; `-alh`; `-alhQ` all are valid inputs to command ls

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`

- `-a`
- `-l`
- `-h`
- `-Q`

Input to `ls -a`

Input to `ls -l`

Input to `ls -h`

Input to `ls -Q`

Combine inputs You can construct combination of inputs mentioned above `-al`; `-alh`; `-alhQ` all are valid inputs to command ls

Input to `ls -alhQ`

Navigation - List folder contents

List folder contents that is asking what are the files and folder within home folder.

Command `ls`

Input to `ls`
- `-a`
- `-l`
- `-h`
- `-Q`

Input to `ls -a`

Input to `ls -l`

Input to `ls -h`

Input to `ls -Q`

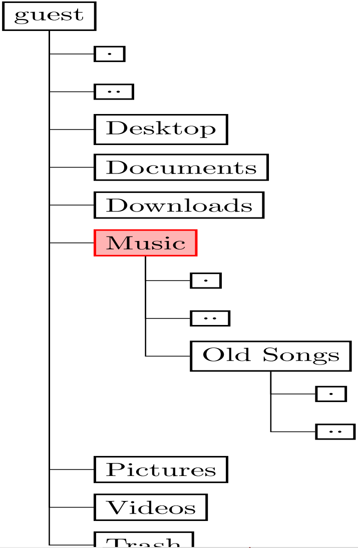
Combine inputs You can construct combination of inputs mentioned above `-al`; `-alh`; `-alhQ` all are valid inputs to command ls

Input to `ls -alhQ`

Contents of another folder `ls Downloads`

Navigation - Change to another folder - 1

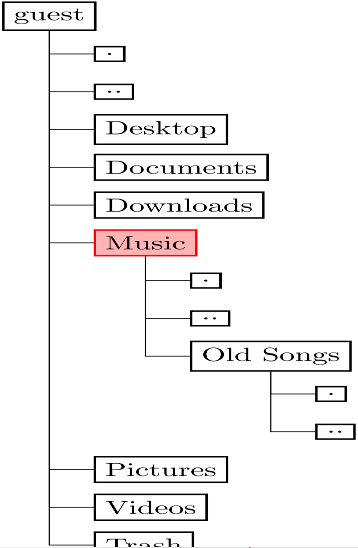
cd Change directory (change folder)



Navigation - Change to another folder - 1

cd Change directory (change folder)

cd What is the notation?

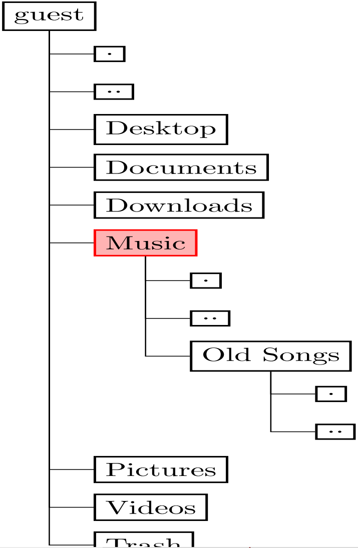


Navigation - Change to another folder - 1

cd Change directory (change folder)

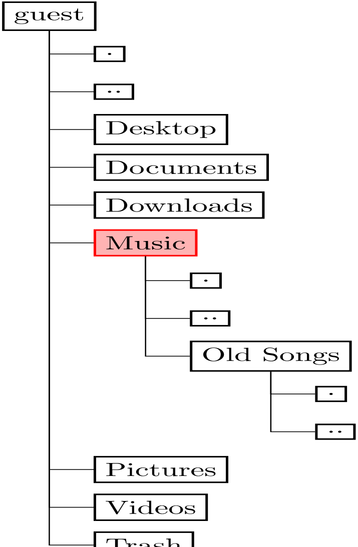
cd What is the notation?

pwd `/home/guest/Music`
Known as absolute path



Navigation - Change to another folder - 1

- **cd** Change directory (change folder)
- **cd** What is the notation?
- **pwd** `/home/guest/Music`
  Known as absolute path
- **/** root directory



Navigation - Change to another folder - 1

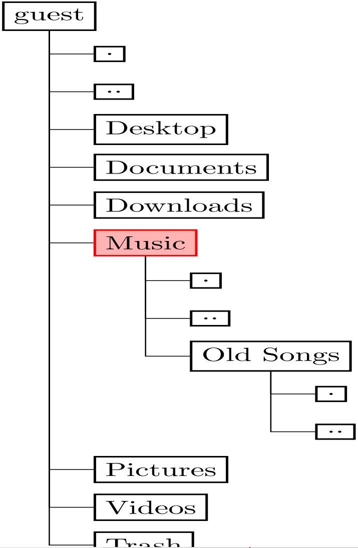
cd Change directory (change folder)

cd What is the notation?

pwd `/home/guest/Music` Known as absolute path

/ root directory

/home several users home folders will be present in this folder



Navigation - Change to another folder - 1

cd Change directory (change folder)

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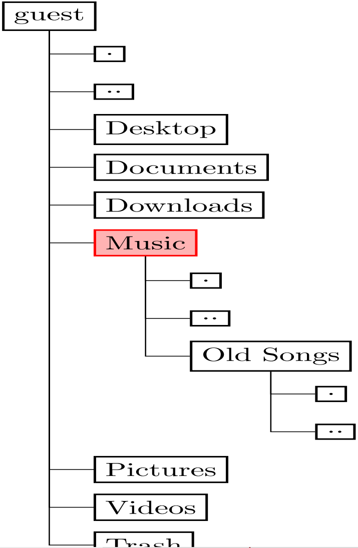
pwd `/home/guest/Music` Known as absolute path

/ root directory

/home several users home folders will be present in this folder

/home/guest guest user home folder



Navigation - Change to another folder - 1

cd Change directory (change folder)

cd What is the notation?

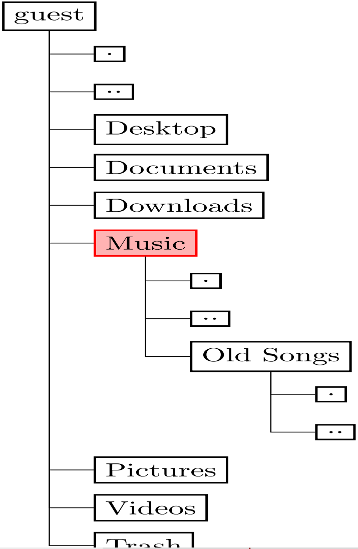
pwd `/home/guest/Music`
Known as absolute path

/ root directory

/home several users home folders will be present in this folder

/home/guest guest user home folder

/home/guest/Music is present within guest home folder



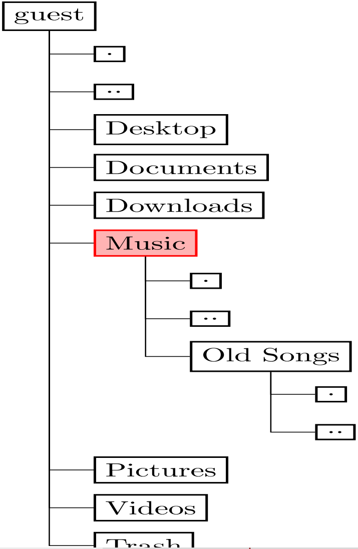
Navigation - Change to another folder - 2

cd Change directory (change folder)

cd What is the notation?

pwd `/home/guest/Music`

Command `cd "Old Songs"`



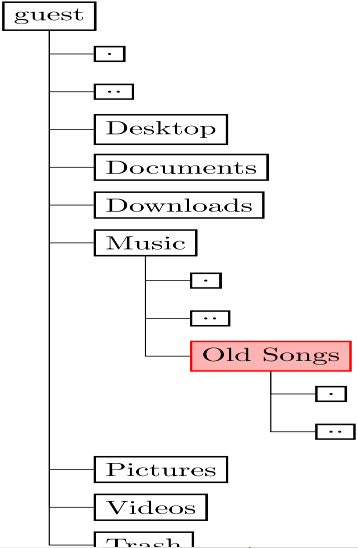
Navigation - Change to another folder - 3

cd Change directory (change folder)

cd What is the notation?

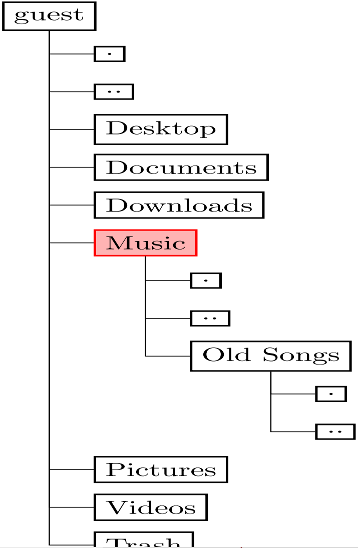
pwd `/home/guest/Music`

Command `cd "Old Songs"`



Navigation - Change to another folder - 3

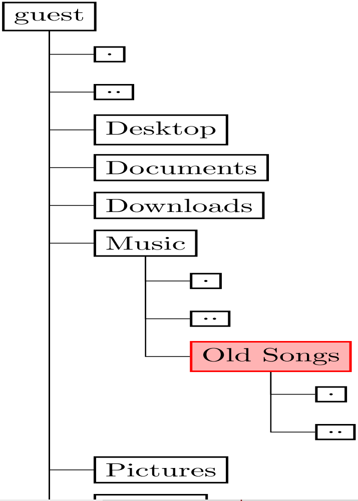
cd	Change directory (change folder)
cd	What is the notation?
pwd	`/home/guest/Music`
Command	`cd "Old Songs"`
Command	`cd ..`



guest
.
..
Desktop
Documents
Downloads
Music
.
..
Old Songs
.
..
Pictures
Videos
Trash

Navigation - Change to another folder - Complex Example - 1

Navigate Go from Old Songs to Downloads



guest

.

..

Desktop

Documents

Downloads

Music

.

..

Old Songs

.

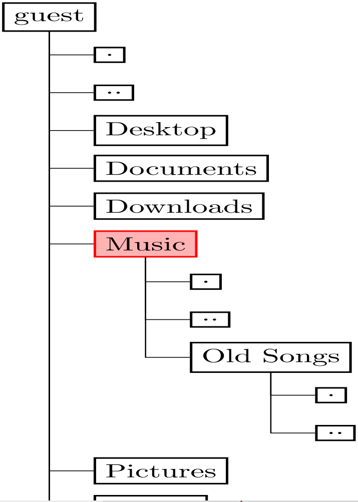
..

Pictures

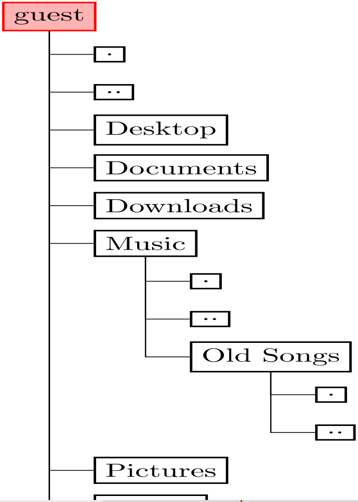
Navigation - Change to another folder - Complex Example - 2

Navigate Go from Old Songs to Downloads

Navigate Go one level up `cd ..`



Navigation - Change to another folder - Complex Example - 3



Navigate Go from Old Songs to Downloads

Navigate Go one level up `cd ..`

Navigate Go one more level up `cd ..`

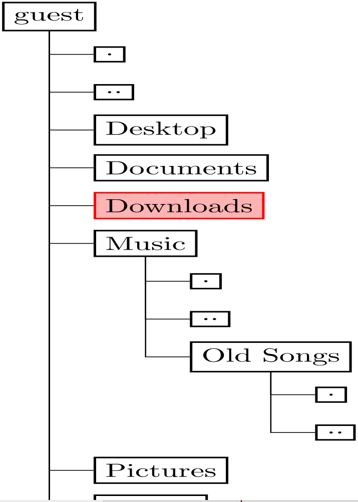
Navigation - Change to another folder - Complex Example - 4

Navigate Go from Old Songs to Downloads

Navigate Go one level up: `cd ..`

Navigate Go more one level up `cd ..`

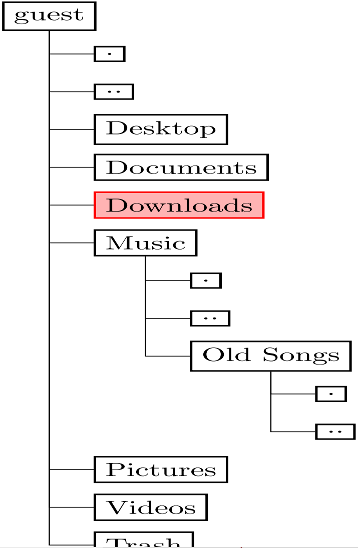
Navigate Go to Downloads `cd Downloads`



Navigation - Change to another folder - Putting together

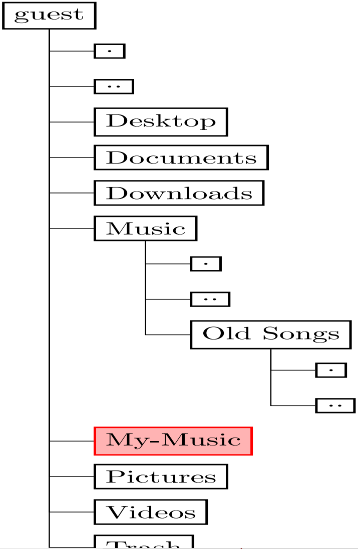
Navigate Go from Old Songs to Downloads

Command `cd ../../Downloads`



Navigation - Create Directory

- Assume that you are in HOME directory.
- mkdir new-directory-name
- The above will create a directory with the given name inside HOME directory.
- mkdir My-Music



Create a file

Editors Various text editors help create text files

Create a file

Editors Various text editors help create text files

gedit `gedit new-file-name`

Create a file

Editors Various text editors help create text files

gedit `gedit new-file-name`

vi `vi new-file-name`

Create a file

Editors Various text editors help create text files

gedit `gedit new-file-name`

vi `vi new-file-name`

pico `pico new-file-name`

Create a file

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... Choose your favorite text editor to work with and save files

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Creation File will be created at the place where you have invoked the command

Create a file

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... Choose your favorite text editor to work with and save files

Creation File will be created at the place where you have invoked the command

Create empty file `touch` will create an empty file without the use of any editor command

Create a file

Editors Various text editors help create text files

gedit `gedit new-file-name`

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emacs `emacs new-file-name`

... Choose your favorite text editor to work with and save files

Creation File will be created at the place where you have invoked the command

Create empty file `touch` will create an empty file without the use of any editor command

Example `touch 16-jan-2019.txt`

Remove a file

```
rm file-name-to-be-deleted
```

Remove a file

`rm` file-name-to-be-deleted

Example `rm` 180101000.c

will delete the file 180101000.c; it will not place the file in the Trash folder!

Remove a file

`rm` file-name-to-be-deleted

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Remove a file

`rm` file-name-to-be-deleted

Example `rm` 180101000.c
will delete the file 180101000.c; it will not place the file in the Trash folder!

Inputs to `rm`
- -i (interactive)

Remove a file

rm file-name-to-be-deleted

Example rm 180101000.c
will delete the file 180101000.c; it will not place the file in the Trash folder!

Inputs to rm
- -i (interactive)
- -f (force remove)

Remove a file

rm file-name-to-be-deleted

Example rm 180101000.c
will delete the file 180101000.c; it will not place the file in the Trash folder!

Inputs to rm

- -i (interactive)
- -f (force remove)
- -r (recursively remove)

Remove a file

rm file-name-to-be-deleted

Example `rm 180101000.c`
will delete the file 180101000.c; it will not place the file in the Trash folder!

Inputs to rm
- -i (interactive)
- -f (force remove)
- -r (recursively remove)

Command `rm -i`

Remove a file

`rm` file-name-to-be-deleted

Example `rm` 180101000.c
will delete the file 180101000.c; it will not place the file in the Trash folder!

Inputs to `rm`
- -i (interactive)
- -f (force remove)
- -r (recursively remove)

Command `rm -i`

Command `rm -f`

Remove a file

`rm` file-name-to-be-deleted

Example `rm` 180101000.c
will delete the file 180101000.c; it will not place the file in the Trash folder!

Inputs to `rm`

- -i (interactive)
- -f (force remove)
- -r (recursively remove)

Command `rm -i`

Command `rm -f`

Command `rm -r`

Remove a file

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Example `rm` 180101000.c
will delete the file 180101000.c; it will not place the file in the Trash folder!

Inputs to `rm`
- -i (interactive)
- -f (force remove)
- -r (recursively remove)

Command `rm -i`

Command `rm -f`

Command `rm -r`

Combined `rm -rf`

Remove a file

`rm` file-name-to-be-deleted

Example `rm` 180101000.c
will delete the file 180101000.c; it will not place the file in the Trash folder!

Inputs to `rm`
- -i (interactive)
- -f (force remove)
- -r (recursively remove)

Command `rm -i`

Command `rm -f`

Command `rm -r`

Combined `rm -rf`

Careful with remove command!

Remove a folder

Two methods Use `rm` or `rmdir`

Remove a folder

Two methods Use `rm` or `rmdir`

```
rmdir folder-name-to-be-deleted
```

Remove a folder

Two methods Use `rm` or `rmdir`

`rmdir` folder-name-to-be-deleted

Example `rmdir` Downloads

Will delete the folder Downloads; Make sure Downloads folder empty before executing this.

Remove a folder

Two methods Use `rm` or `rmdir`

`rmdir` folder-name-to-be-deleted

Example `rmdir` Downloads
Will delete the folder Downloads; Make sure Downloads folder empty before executing this.

`rm -rf` folder-name-to-be-deleted Deletes all the contents of the folder

Copy files

```
cp file-1 file-2
```

Copy files

cp file-1 file-2

Explanation the above command copies contents of file-1 into file-2

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Explanation the above command copies contents of file-1 into file-2

Observation - 1 file-2 need not be existing

Copy files

`cp` file-1 file-2

Explanation the above command copies contents of file-1 into file-2

Observation - 1 file-2 need not be existing

Observation - 2 if it exists file-2 will be over-written; that is contents of file-2 will be replaced with contents of file-1

Copy files

`cp` file-1 file-2

Explanation the above command copies contents of file-1 into file-2

Observation - 1 file-2 need not be existing

Observation - 2 if it exists file-2 will be over-written; that is contents of file-2 will be replaced with contents of file-1

Observation - 3 You will find both file-1 and file-2 in the home directory

Copy folders

```
cp -r folder-1 folder-2
```

Copy folders

`cp -r` folder-1 folder-2

Explanation the above command copies recursively contents of folder-1 into folder-2

Copy folders

`cp -r` folder-1 folder-2

Explanation the above command copies recursively contents of folder-1 into folder-2

Observation - 1 folder-2 should not be existing

Copy folders

`cp -r` folder-1 folder-2

Explanation the above command copies recursively contents of folder-1 into folder-2

Observation - 1 folder-2 should not be existing

Observation - 2 if it exists folder-2 will be added with the folder-1 files and folders;

Move files

```
mv file-1 file-2
```

Move files

mv	file-1 file-2
Explanation	the above command moves contents of file-1 into file-2

Move files

```
mv file-1 file-2
```

Explanation the above command moves contents of file-1 into file-2

Observation - 1 file-2 need not be existing

Move files

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Move files

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Explanation the above command moves contents of file-1 into file-2

Observation - 1 file-2 need not be existing

Observation - 2 if it exists file-2 will be over-written; that is contents of file-2 will be replaced with contents of file-1

Observation - 3 file-1 will no longer exits

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Example file permissions and its interpretation

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Command

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Example 1 `ls -l > ls_output.txt`

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Example 1 `ls -l > ls_output.txt`

Example 2 `wc < ls_output.txt`

Compiling a C program

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