

Optional Exercise (Linux Terminal Commands)

Gaurav Ojha

VisFac @ MPSTME, Mumbai

Exercise: Directory and File Management in Linux

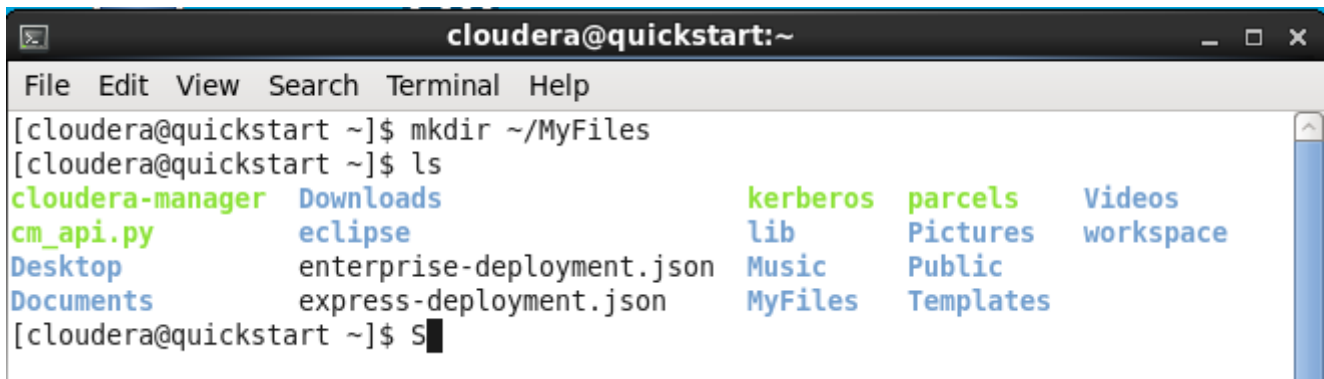
1. Create a directory structure:
 - a) Create a directory called "MyFiles" in your home directory.
 - b) Inside the "MyFiles" directory, create three subdirectories: "Documents", "Pictures", and "Music".
2. Navigate through directories:
 - a) Change your current working directory to "MyFiles/Documents".
 - b) Print the absolute path of your current working directory using the "pwd" command.
3. List directory contents:
 - a) List all the files and directories in "MyFiles".
 - b) List all the files (including hidden files) and directories in "MyFiles/Pictures" using appropriate options with the "ls" command.
4. Create and remove directories:
 - a) Create a new directory named "Notes" inside "MyFiles/Documents".
 - b) Remove the "Music" directory from "MyFiles".
5. Create and copy files:
 - a) Create a new empty file named "todo.txt" inside the "Documents" directory using the "touch" command.
 - b) Copy the "todo.txt" file to the "Notes" directory.
6. View file contents:
 - a) View the first 5 lines of the "todo.txt" file using the "head" command.
 - b) View the last 10 lines of the "todo.txt" file using the "tail" command.
7. Append content to a file:
 - a) Add a new task to the "todo.txt" file using the "echo" command and redirect the output to append to the file.
8. Search for specific content:
 - a) Use the "grep" command to search for the word "important" in the "todo.txt" file.
9. Move and rename files:
 - a) Move the "todo.txt" file from the "Documents" directory to the "Notes" directory using the "mv" command.
 - b) Rename the "todo.txt" file in the "Notes" directory to "tasks.txt" using the "mv" command.
10. Clean up:
 - a) Remove the "MyFiles" directory and all its contents using the appropriate command.

1. Create a directory structure:

a) Create a directory called "MyFiles" in your home directory.

b) Inside the "MyFiles" directory, create three subdirectories: "Documents", "Pictures", and "Music".

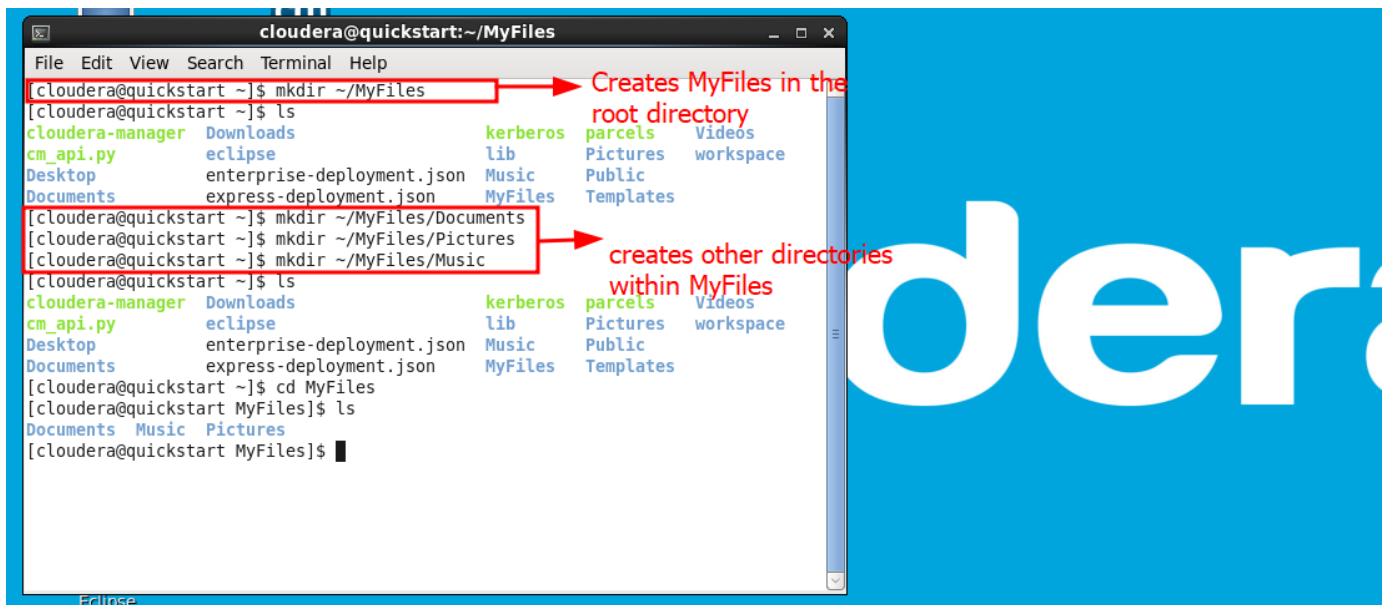
```
mkdir ~/MyFiles
mkdir ~/MyFiles/Documents
mkdir ~/MyFiles/Pictures
mkdir ~/MyFiles/Music
```



A terminal window titled "cloudera@quickstart:~" showing the execution of the following commands:

```
[cloudera@quickstart ~]$ mkdir ~/MyFiles
[cloudera@quickstart ~]$ ls
```

The `ls` command output shows a directory listing with the following files and directories: `cloudera-manager`, `Downloads`, `kerberos`, `parcels`, `Videos`, `cm_api.py`, `eclipse`, `lib`, `Pictures`, `workspace`, `Desktop`, `enterprise-deployment.json`, `Music`, `Public`, `Documents`, `express-deployment.json`, `MyFiles`, and `Templates`. The `MyFiles` directory is highlighted in blue.



A terminal window titled "cloudera@quickstart:~/MyFiles" showing the execution of the following commands:

```
[cloudera@quickstart ~]$ mkdir ~/MyFiles
[cloudera@quickstart ~]$ ls
[cloudera@quickstart ~]$ mkdir ~/MyFiles/Documents
[cloudera@quickstart ~]$ mkdir ~/MyFiles/Pictures
[cloudera@quickstart ~]$ mkdir ~/MyFiles/Music
[cloudera@quickstart ~]$ ls
[cloudera@quickstart ~]$ cd MyFiles
[cloudera@quickstart MyFiles]$ ls
[cloudera@quickstart MyFiles]$
```

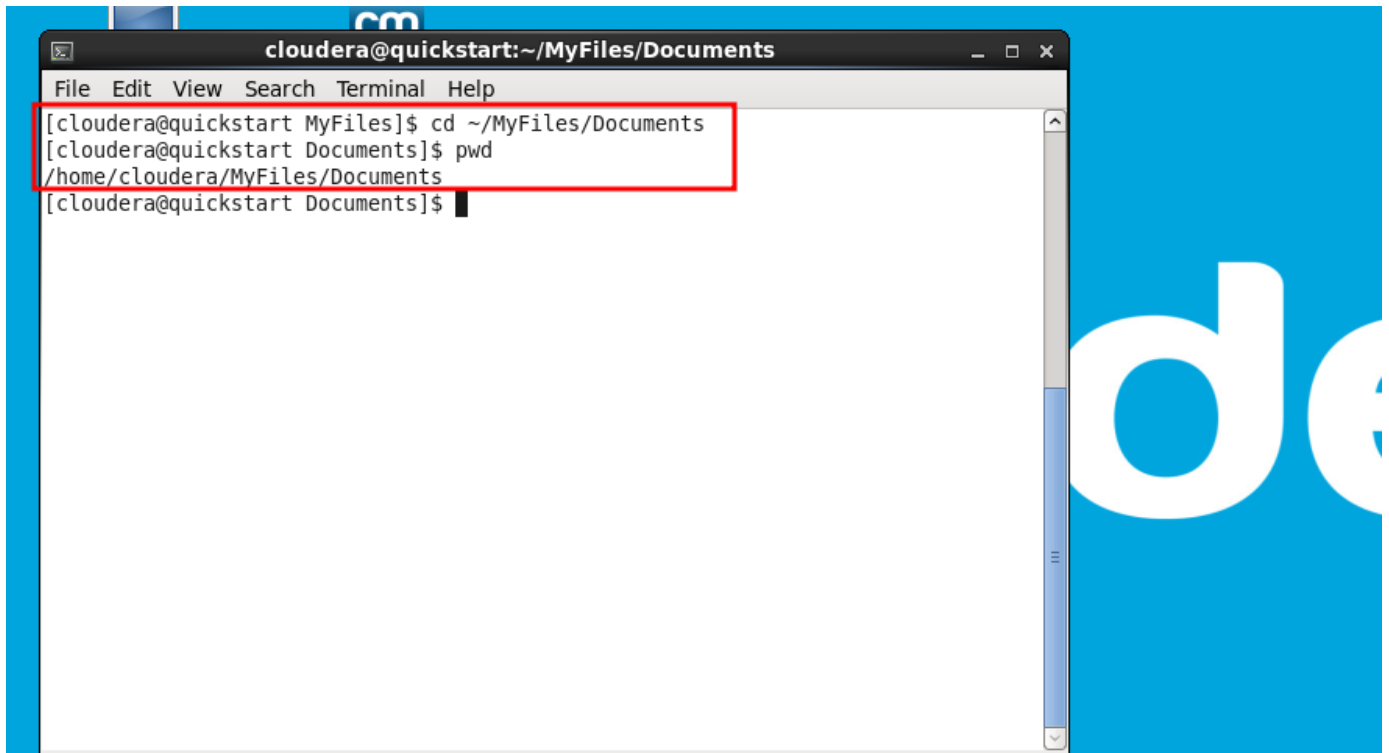
Red boxes and arrows highlight the `mkdir` commands for `~/MyFiles` and `~/MyFiles/Documents`, `~/MyFiles/Pictures`, and `~/MyFiles/Music`. Red text annotations state: "Creates MyFiles in the root directory" and "creates other directories within MyFiles".

2. Navigate through directories:

- a) Change your current working directory to "MyFiles/Documents".
- b) Print the absolute path of your current working directory using the "pwd" command.

```
cd ~/MyFiles/Documents
```

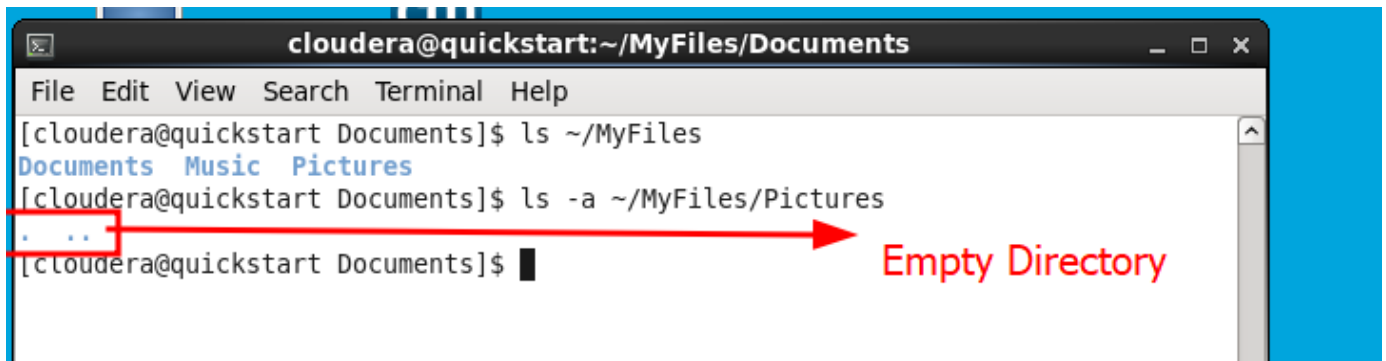
```
pwd
```



3. List directory contents:

- a) List all the files and directories in "MyFiles".
- b) List all the files (including hidden files) and directories in "MyFiles/Pictures" using appropriate options with the "ls" command.

```
ls ~/MyFiles
ls -a ~/MyFiles/Pictures
```



A terminal window titled "cloudera@quickstart:~/MyFiles/Documents" with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

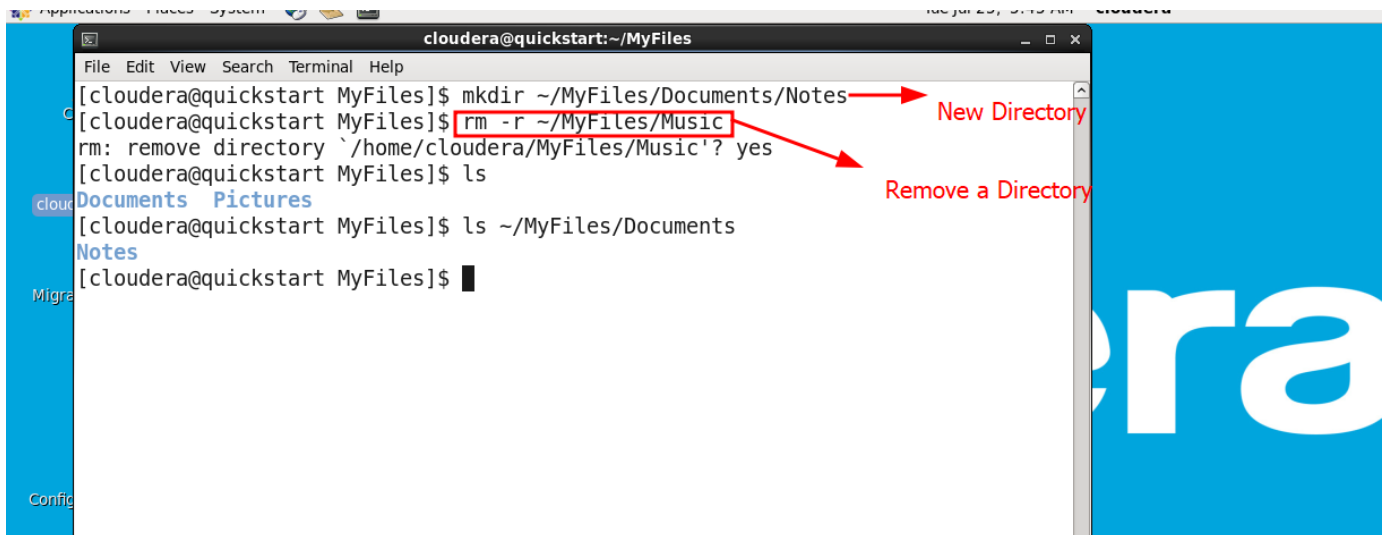
```
[cloudera@quickstart Documents]$ ls ~/MyFiles
Documents Music Pictures
[cloudera@quickstart Documents]$ ls -a ~/MyFiles/Pictures
. .
```

The output of the second command, ". .", is enclosed in a red box. A red arrow points from this box to the text "Empty Directory" on the right side of the terminal window.

4. Create and remove directories:

- a) Create a new directory named "Notes" inside "MyFiles/Documents".
- b) Remove the "Music" directory from "MyFiles".

```
mkdir ~/MyFiles/Documents/Notes  
rm -r ~/MyFiles/Music
```

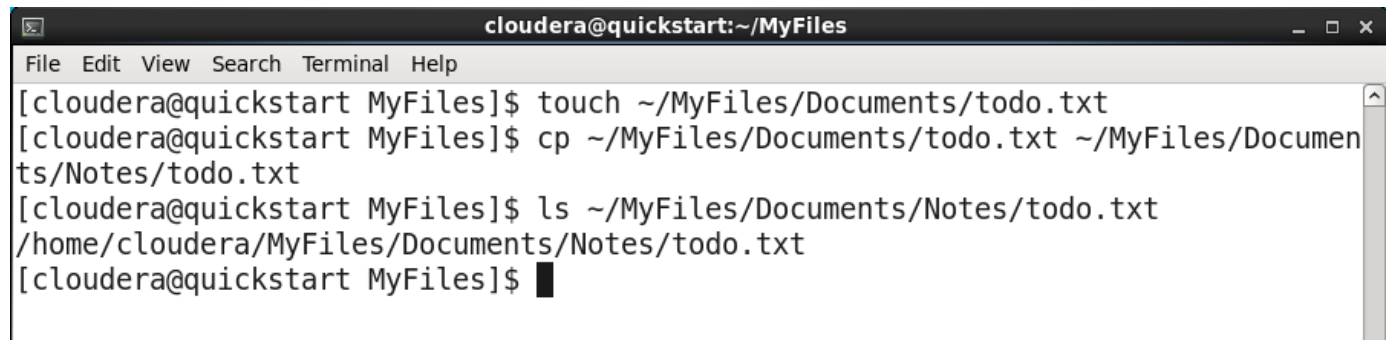


5. Create and copy files:

a) Create a new empty file named "todo.txt" inside the "Documents" directory using the "touch" command.

b) Copy the "todo.txt" file to the "Notes" directory.

```
touch ~/MyFiles/Documents/todo.txt
cp ~/MyFiles/Documents/todo.txt ~/MyFiles/Documents/Notes/todo.txt
```

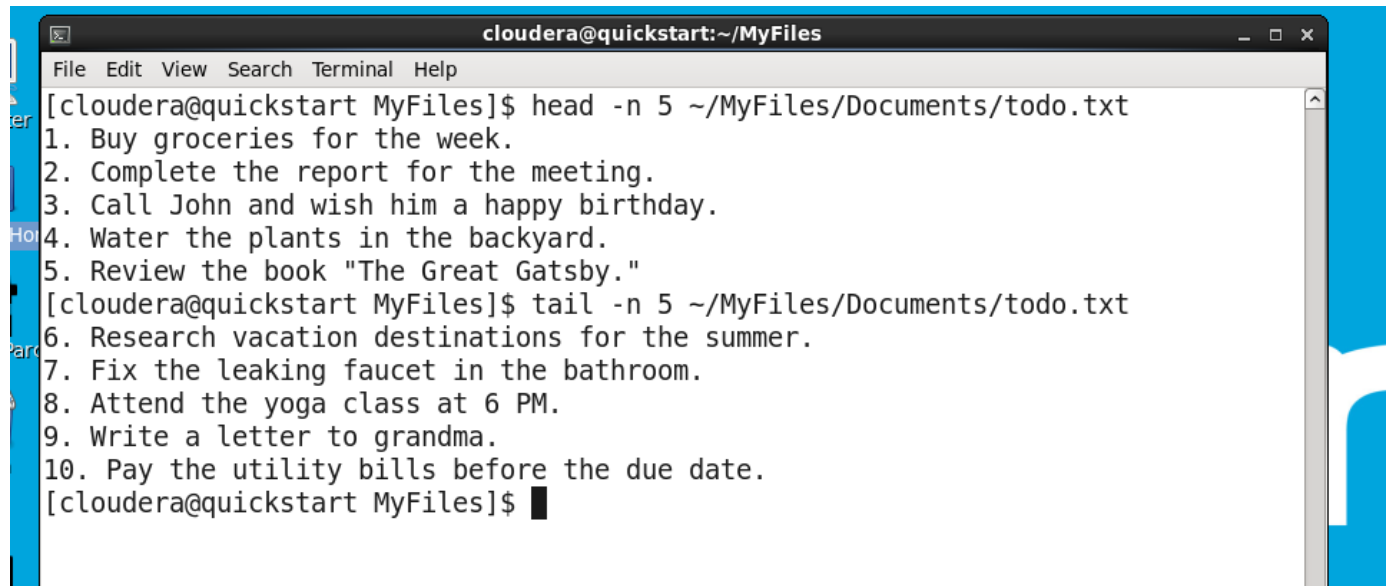
A terminal window titled "cloudera@quickstart:~/MyFiles" with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
[cloudera@quickstart MyFiles]$ touch ~/MyFiles/Documents/todo.txt
[cloudera@quickstart MyFiles]$ cp ~/MyFiles/Documents/todo.txt ~/MyFiles/Documents/Notes/todo.txt
[cloudera@quickstart MyFiles]$ ls ~/MyFiles/Documents/Notes/todo.txt
/home/cloudera/MyFiles/Documents/Notes/todo.txt
[cloudera@quickstart MyFiles]$
```

6. View file contents:

- a) View the first 5 lines of the "todo.txt" file using the "head" command.
- b) View the last 10 lines of the "todo.txt" file using the "tail" command.

```
nano ~/MyFiles/Documents/todo.txt
# Add 10-20 lines
head -n 5 ~/MyFiles/Documents/todo.txt
tail -n 10 ~/MyFiles/Documents/todo.txt
```



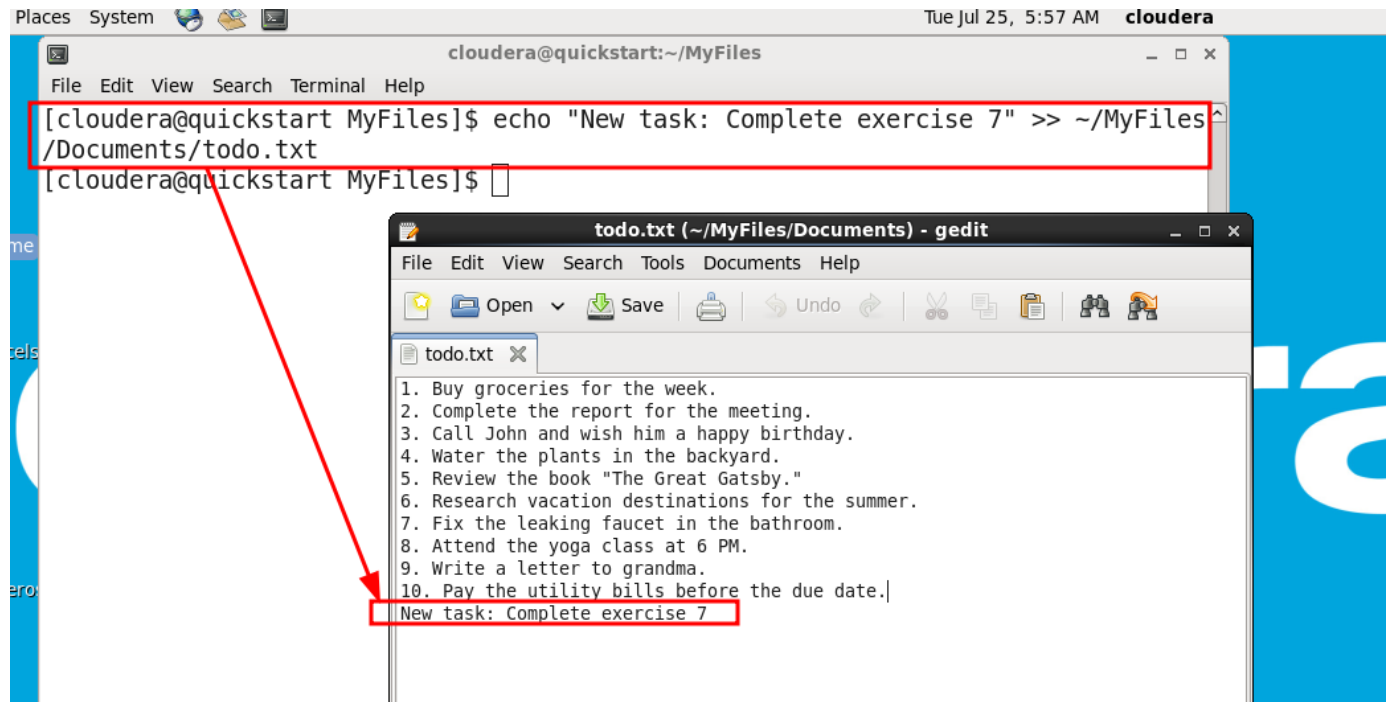
The screenshot shows a terminal window titled "cloudera@quickstart:~/MyFiles". The terminal has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The user has executed the command `head -n 5 ~/MyFiles/Documents/todo.txt`, which displays the first five lines of the file as a numbered list. Then, the user has executed `tail -n 5 ~/MyFiles/Documents/todo.txt`, which displays the last five lines of the file, also as a numbered list. The prompt `[cloudera@quickstart MyFiles]$` is visible at the end of the second command's output.

```
cloudera@quickstart:~/MyFiles
File Edit View Search Terminal Help
[cloudera@quickstart MyFiles]$ head -n 5 ~/MyFiles/Documents/todo.txt
1. Buy groceries for the week.
2. Complete the report for the meeting.
3. Call John and wish him a happy birthday.
4. Water the plants in the backyard.
5. Review the book "The Great Gatsby."
[cloudera@quickstart MyFiles]$ tail -n 5 ~/MyFiles/Documents/todo.txt
6. Research vacation destinations for the summer.
7. Fix the leaking faucet in the bathroom.
8. Attend the yoga class at 6 PM.
9. Write a letter to grandma.
10. Pay the utility bills before the due date.
[cloudera@quickstart MyFiles]$
```


7. Append content to a file:

a) Add a new task to the "todo.txt" file using the "echo" command and redirect the output to append to the file.

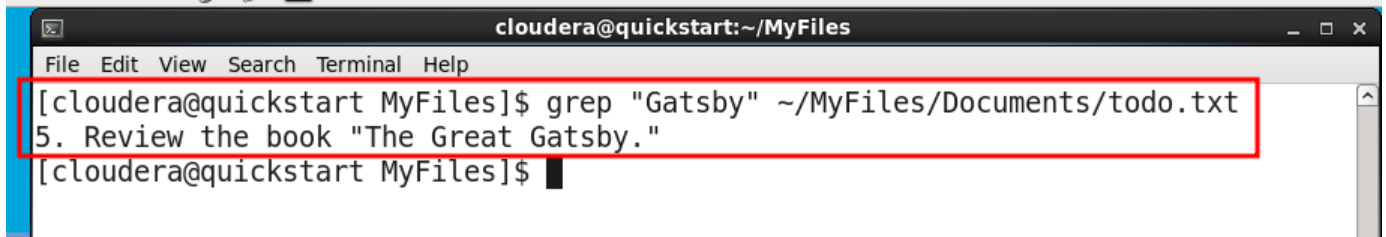
```
echo "New task: Complete exercise 7" >> ~/MyFiles/Documents/todo.txt
```



8. Search for specific content:

a) Use the "grep" command to search for the word "Gatsby" in the "todo.txt" file.

```
grep "Gatsby" ~/MyFiles/Documents/todo.txt
```

A screenshot of a terminal window titled "cloudera@quickstart:~/MyFiles". The terminal has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The command prompt shows "[cloudera@quickstart MyFiles]\$ grep "Gatsby" ~/MyFiles/Documents/todo.txt". The output of the command is "5. Review the book "The Great Gatsby."", which is highlighted by a red rectangular box. The prompt then returns to "[cloudera@quickstart MyFiles]\$".

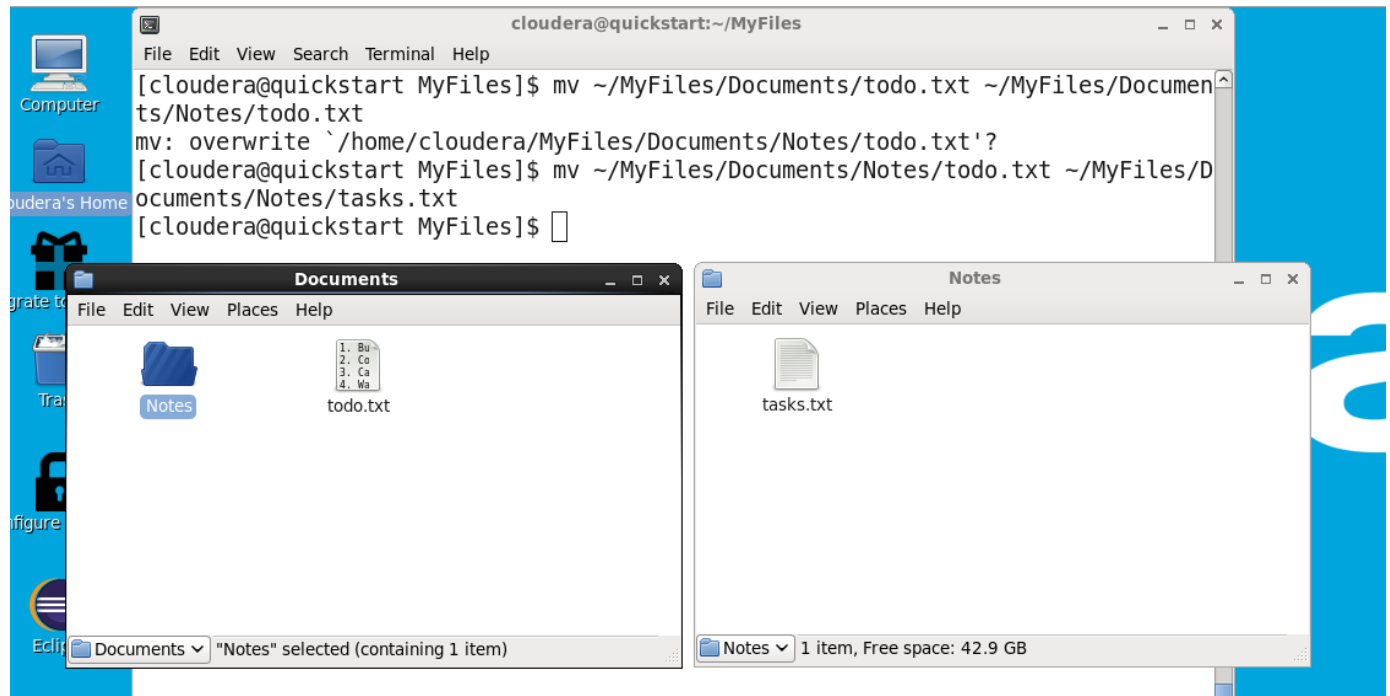
```
cloudera@quickstart:~/MyFiles
File Edit View Search Terminal Help
[cloudera@quickstart MyFiles]$ grep "Gatsby" ~/MyFiles/Documents/todo.txt
5. Review the book "The Great Gatsby."
[cloudera@quickstart MyFiles]$
```

9. Move and rename files:

a) Move the "todo.txt" file from the "Documents" directory to the "Notes" directory using the "mv" command.

b) Rename the "todo.txt" file in the "Notes" directory to "tasks.txt" using the "mv" command.

```
mv ~/MyFiles/Documents/todo.txt ~/MyFiles/Documents/Notes/todo.txt
mv ~/MyFiles/Documents/Notes/todo.txt ~/MyFiles/Documents/Notes/tasks.txt
```



10. Clean up:

a) Remove the "MyFiles" directory and all its contents using the appropriate command.

```
rm -r ~/MyFiles
```

Note: An even faster way would be to use: `rm -rf ~/MyFiles`

