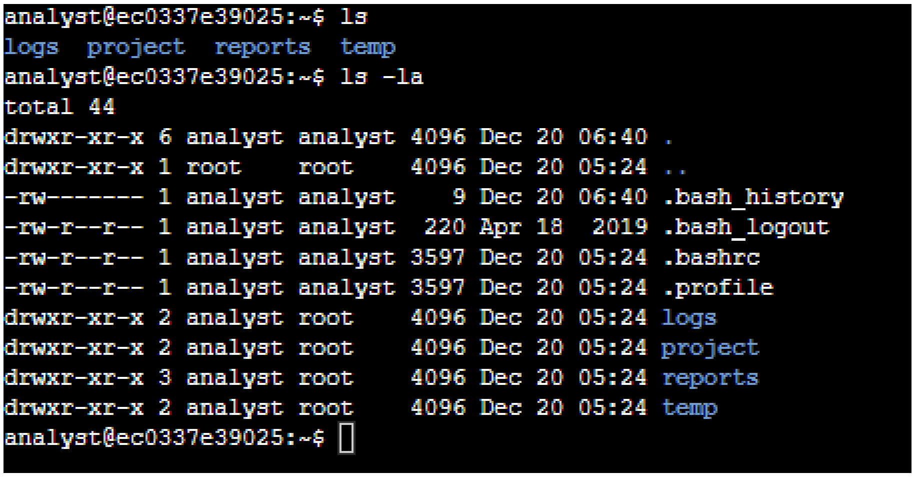
Files in Linux

Project description

In this scenario, the analyst team tasked me to execute some organizational tasks. The following are as follows:

1. Find and search files
2. Create and remove a directory
3. Move and remove a file
4. Create and edit a file

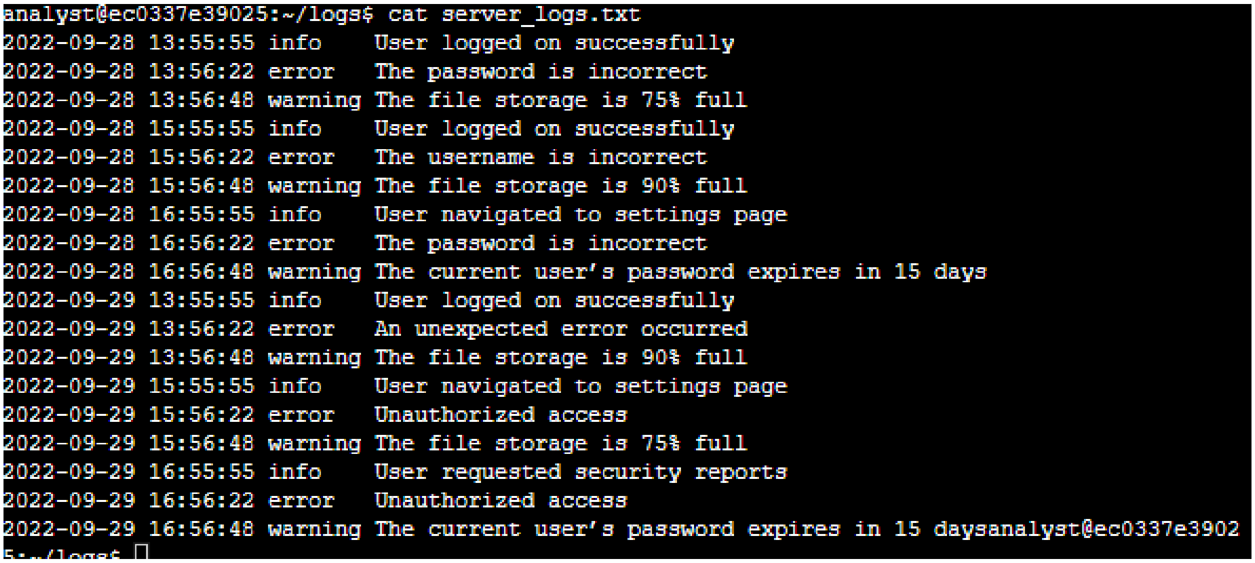
The operating system is Linux, indicating that the tasks require a command-line interface (Linux Bash shell) approach via Linux Terminal.



```
analyst@ec0337e39025:~$ ls
logs  project  reports  temp
analyst@ec0337e39025:~$ ls -la
total 44
drwxr-xr-x 6 analyst analyst 4096 Dec 20 06:40 .
drwxr-xr-x 1 root    root    4096 Dec 20 05:24 ..
-rw------- 1 analyst analyst    9 Dec 20 06:40 .bash_history
-rw-r--r-- 1 analyst analyst  220 Apr 18  2019 .bash_logout
-rw-r--r-- 1 analyst analyst 3597 Dec 20 05:24 .bashrc
-rw-r--r-- 1 analyst analyst 3597 Dec 20 05:24 .profile
drwxr-xr-x 2 analyst root    4096 Dec 20 05:24 logs
drwxr-xr-x 2 analyst root    4096 Dec 20 05:24 project
drwxr-xr-x 3 analyst root    4096 Dec 20 05:24 reports
drwxr-xr-x 2 analyst root    4096 Dec 20 05:24 temp
analyst@ec0337e39025:~$
```

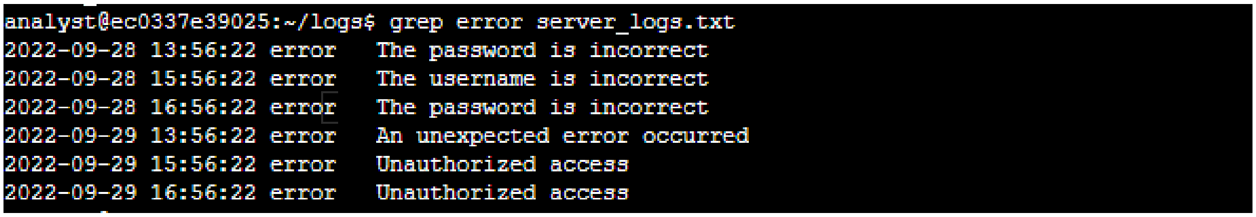
Find and search files

The analyst team asked me to locate a log file whose lines contain the text string `error`. The file is `server_logs.txt`.within the directory `logs`. We can examine the actual lines within the file by using `cat server_logs.txt` after cd `logs` / `cat /home/analyst/logs/server_logs.txt` command. The image below shows the entire lines of the text.



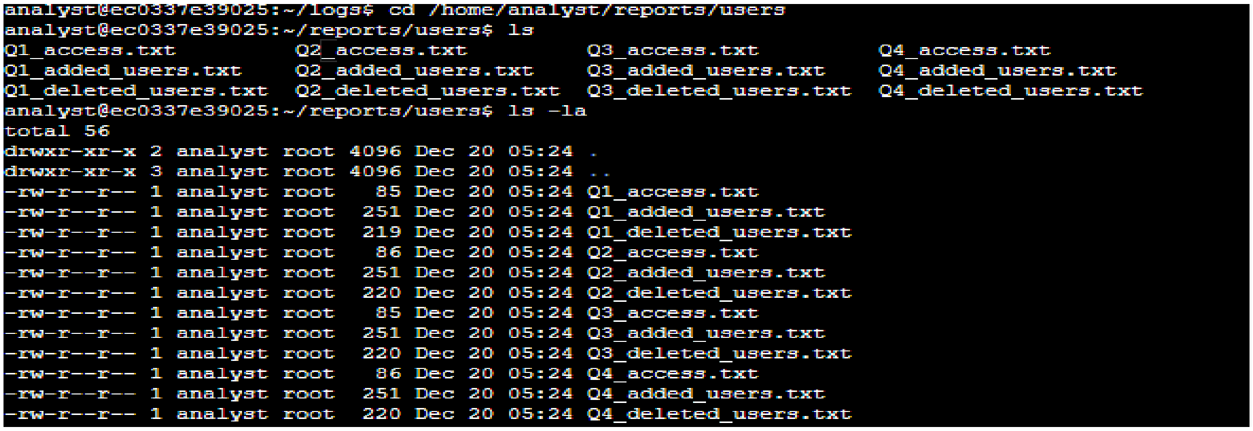
```
analyst@ec0337e39025:~/logs$ cat server_logs.txt
2022-09-28 13:55:55 info    User logged on successfully
2022-09-28 13:56:22 error   The password is incorrect
2022-09-28 13:56:48 warning The file storage is 75% full
2022-09-28 15:55:55 info    User logged on successfully
2022-09-28 15:56:22 error   The username is incorrect
2022-09-28 15:56:48 warning The file storage is 90% full
2022-09-28 16:55:55 info    User navigated to settings page
2022-09-28 16:56:22 error   The password is incorrect
2022-09-28 16:56:48 warning The current user's password expires in 15 days
2022-09-29 13:55:55 info    User logged on successfully
2022-09-29 13:56:22 error   An unexpected error occurred
2022-09-29 13:56:48 warning The file storage is 90% full
2022-09-29 15:55:55 info    User navigated to settings page
2022-09-29 15:56:22 error   Unauthorized access
2022-09-29 15:56:48 warning The file storage is 75% full
2022-09-29 16:55:55 info    User requested security reports
2022-09-29 16:56:22 error   Unauthorized access
2022-09-29 16:56:48 warning The current user's password expires in 15 daysanalyst@ec0337e3902
5:~/logs$
```

Now, let's filter this file so it will return a list of the lines that match the text string "error" in that file. The command `grep error server_logs.txt` will make it happen. As the result shows below, there are six lines that match the text string "error".



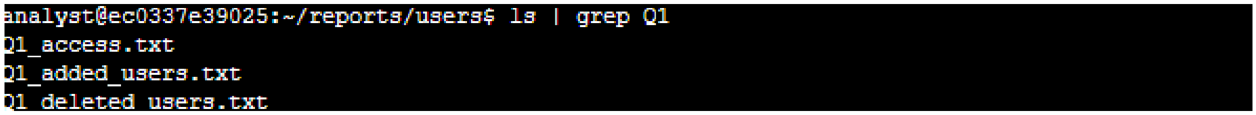
```
analyst@ec0337e39025:~/logs$ grep error server_logs.txt
2022-09-28 13:56:22 error   The password is incorrect
2022-09-28 15:56:22 error   The username is incorrect
2022-09-28 16:56:22 error   The password is incorrect
2022-09-29 13:56:22 error   An unexpected error occurred
2022-09-29 15:56:22 error   Unauthorized access
2022-09-29 16:56:22 error   Unauthorized access
```

The analyst team also would like me to locate files whose names contain `Q1` and `access` within the `users` directory. First, let's write the command `cd /home/analyst/reports/users` to enter `users` directory and `ls /ls -la` commands to view all the files within the directory.



```
analyst@ec0337e39025:~/logs$ cd /home/analyst/reports/users
analyst@ec0337e39025:~/reports/users$ ls
Q1_access.txt         Q2_access.txt         Q3_access.txt         Q4_access.txt
Q1_added_users.txt    Q2_added_users.txt    Q3_added_users.txt    Q4_added_users.txt
Q1_deleted_users.txt  Q2_deleted_users.txt  Q3_deleted_users.txt  Q4_deleted_users.txt
analyst@ec0337e39025:~/reports/users$ ls -la
total 56
drwxr-xr-x 2 analyst root 4096 Dec 20 05:24 .
drwxr-xr-x 3 analyst root 4096 Dec 20 05:24 ..
-rw-r--r-- 1 analyst root   85 Dec 20 05:24 Q1_access.txt
-rw-r--r-- 1 analyst root  251 Dec 20 05:24 Q1_added_users.txt
-rw-r--r-- 1 analyst root  219 Dec 20 05:24 Q1_deleted_users.txt
-rw-r--r-- 1 analyst root   86 Dec 20 05:24 Q2_access.txt
-rw-r--r-- 1 analyst root  251 Dec 20 05:24 Q2_added_users.txt
-rw-r--r-- 1 analyst root  220 Dec 20 05:24 Q2_deleted_users.txt
-rw-r--r-- 1 analyst root   85 Dec 20 05:24 Q3_access.txt
-rw-r--r-- 1 analyst root  251 Dec 20 05:24 Q3_added_users.txt
-rw-r--r-- 1 analyst root  220 Dec 20 05:24 Q3_deleted_users.txt
-rw-r--r-- 1 analyst root   86 Dec 20 05:24 Q4_access.txt
-rw-r--r-- 1 analyst root  251 Dec 20 05:24 Q4_added_users.txt
-rw-r--r-- 1 analyst root  220 Dec 20 05:24 Q4_deleted_users.txt
```

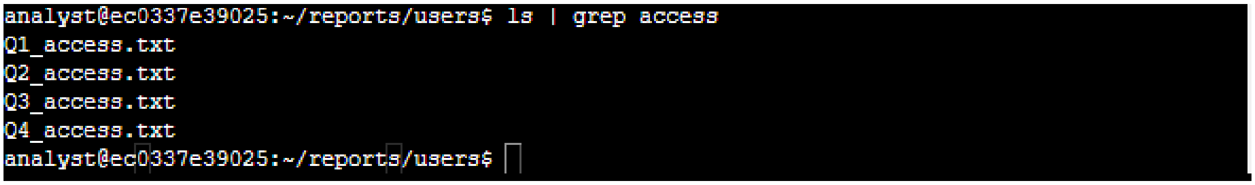
This command (`grep`) will allow us to find the files whose names contain `Q1`: `ls | grep Q1` (make sure you're already in the directory) or `ls /home/analyst/reports/users | grep Q1`. There are three files associated with `Q1`.



```
analyst@ec0337e39025:~/reports/users$ ls | grep Q1
Q1_access.txt
Q1_added_users.txt
Q1_deleted_users.txt
```

Using the same logic, we can locate a file whose name contains `access`: `ls | grep access` (make sure you're already in the directory) or `ls /home/analyst/reports/users | grep access`

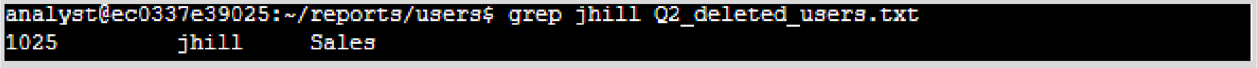
As the result shows, there are four files associated with `access`.



```
analyst@ec0337e39025:~/reports/users$ ls | grep access
Q1_access.txt
Q2_access.txt
Q3_access.txt
Q4_access.txt
analyst@ec0337e39025:~/reports/users$
```

Last but not least, the analyst team would like to search information contained in user files and report on users that were added and deleted from the system. They would like to search the `Q2_deleted_users.txt` file within the `users` directory for the username `jhill`. As the result shows, we found `jhill` in this file.

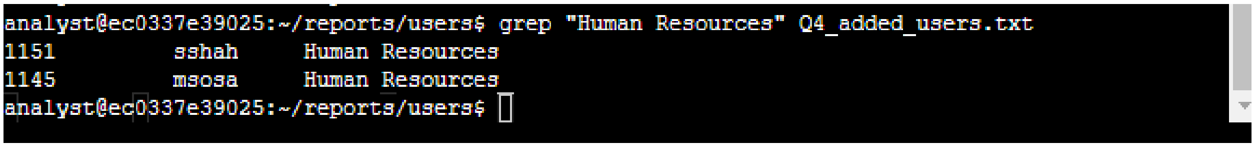
```
grep jhill Q2_deleted_users.txt
```



```
analyst@ec0337e39025:~/reports/users$ grep jhill Q2_deleted_users.txt
1025          jhill      Sales
```

To see whose people have been added to the `Human Resources` department, we can use `grep` command. For more than one word, we should use "" to execute the command.

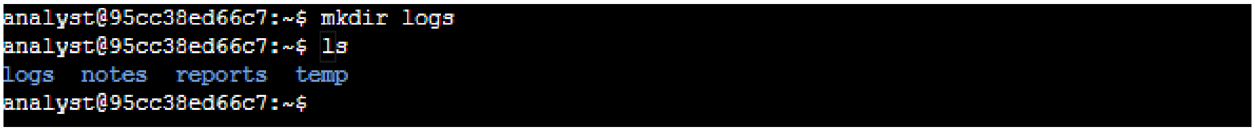
```
grep "Human Resources" Q4_added_users.txt
```



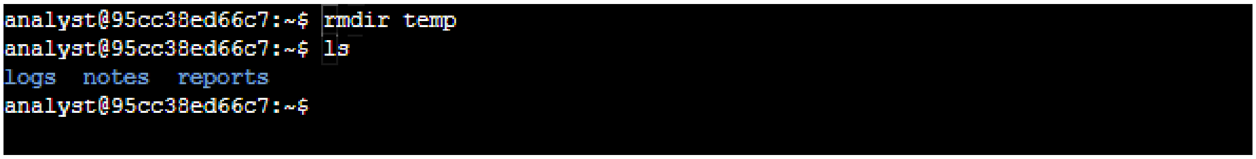
```
analyst@ec0337e39025:~/reports/users$ grep "Human Resources" Q4_added_users.txt
1151          sshah      Human Resources
1145          msosa      Human Resources
analyst@ec0337e39025:~/reports/users$
```

Create and remove a directory

The analyst team would like me to create a new directory named logs and remove temp directory from the system. Here's the command line to create and remove directory: mkdir logs (create) `rmdir temp` (remove)



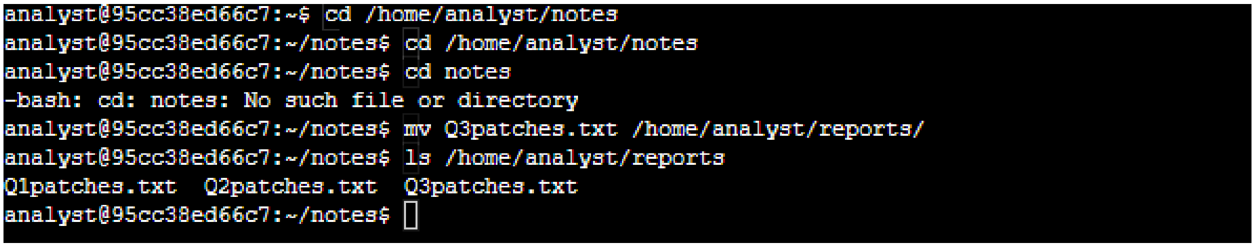
```
analyst@95cc38ed66c7:~$ mkdir logs
analyst@95cc38ed66c7:~$ ls
logs  notes  reports  temp
analyst@95cc38ed66c7:~$
```



```
analyst@95cc38ed66c7:~$ rmdir temp
analyst@95cc38ed66c7:~$ ls
logs  notes  reports
analyst@95cc38ed66c7:~$
```

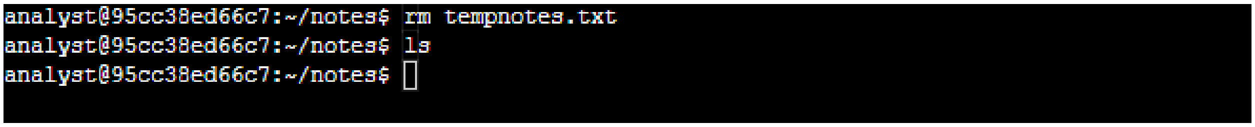
Move and remove a file

The team would like to move `Q3patches.txt` file to another directory. In the `Notes` directory (please navigate here), the command mv `Q3patches.txt /home/analyst/report` will move the file to the `notes` directory.



```
analyst@95cc38ed66c7:~$ cd /home/analyst/notes
analyst@95cc38ed66c7:~/notes$ cd /home/analyst/notes
analyst@95cc38ed66c7:~/notes$ cd notes
-bash: cd: notes: No such file or directory
analyst@95cc38ed66c7:~/notes$ mv Q3patches.txt /home/analyst/reports/
analyst@95cc38ed66c7:~/notes$ ls /home/analyst/reports
Q1patches.txt  Q2patches.txt  Q3patches.txt
analyst@95cc38ed66c7:~/notes$ 
```

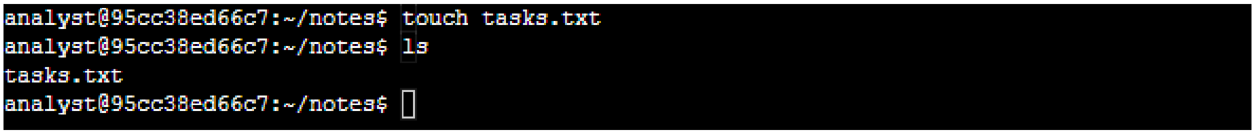
The team would like me to remove `tempnotes` as it is no longer required in the `notes` directory. The command `rm tempnotes.txt` will allow us to delete it (please make sure to use `cd` command to navigate to notes directory).



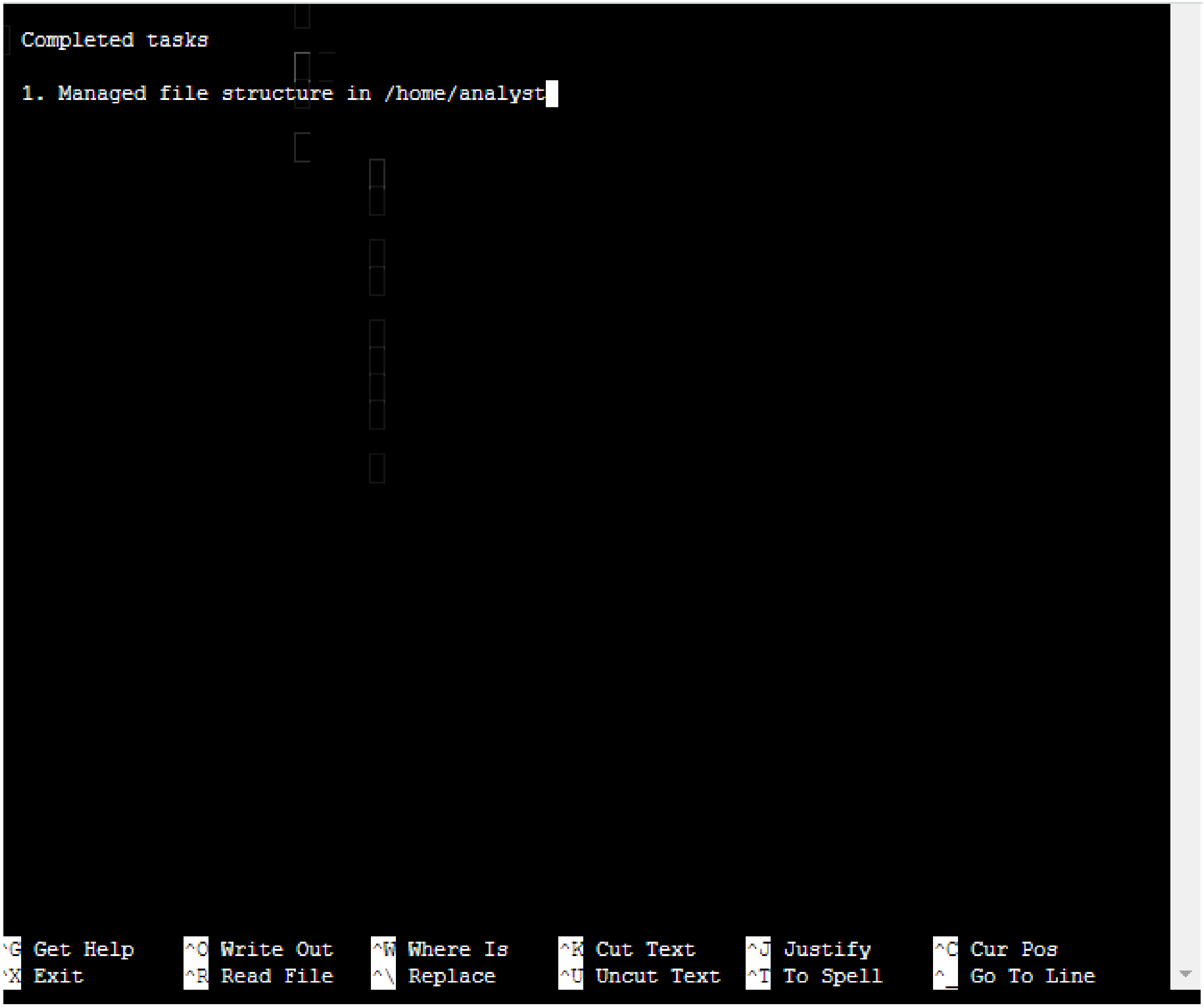
```
analyst@95cc38ed66c7:~/notes$ rm tempnotes.txt
analyst@95cc38ed66c7:~/notes$ ls
analyst@95cc38ed66c7:~/notes$ 
```

Create and edit a file

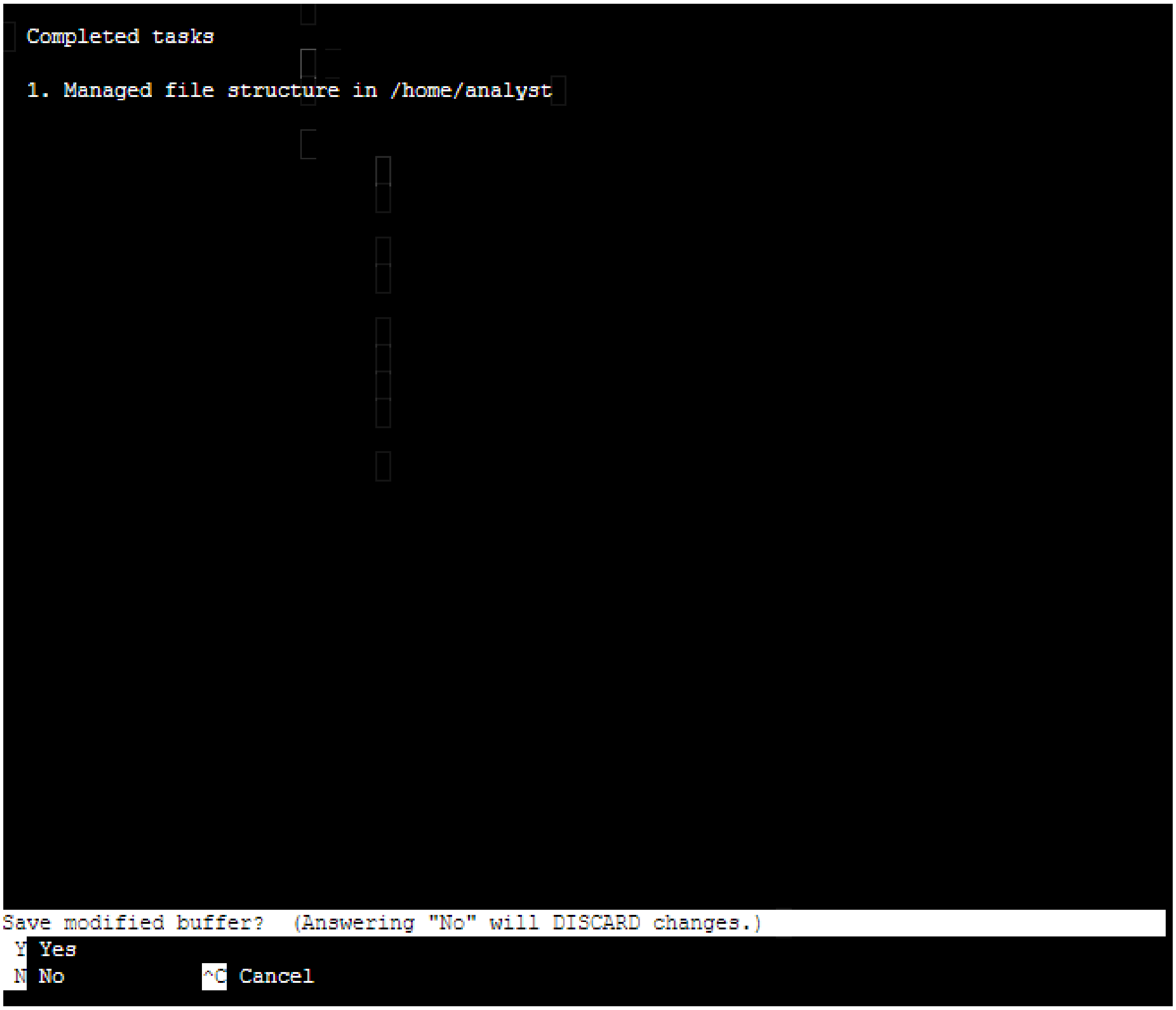
The analyst team would like me to create a new file and edit it. The command touch tasks.txt allows us to create a file. On the other hand, the command nano tasks.txt allows us to edit a file. Make sure to press CTRL + X to exit from the nano editor. When being asked “Save modified bufferer”, press Y to save the new data to the file. Then, please press enter to confirm that the file name to write is tasks.txt. Use cat tasks.txt command to display the contents of the tasks.txt.



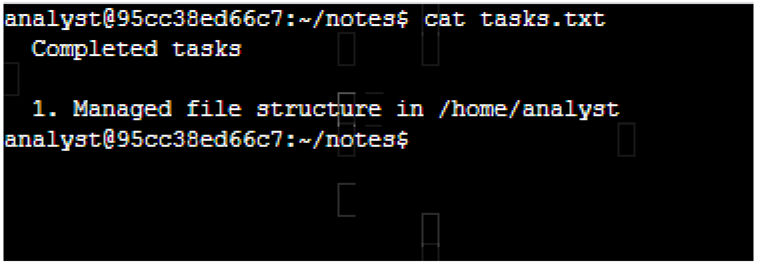
```
analyst@95cc38ed66c7:~/notes$ touch tasks.txt
analyst@95cc38ed66c7:~/notes$ ls
tasks.txt
analyst@95cc38ed66c7:~/notes$ 
```



```
 Completed tasks

 1. Managed file structure in /home/analyst
```



```
 Completed tasks

 1. Managed file structure in /home/analyst







Save modified buffer?  (Answering "No" will DISCARD changes.)
 Y Yes
 N No           ^C Cancel
```



```
analyst@95cc38ed66c7:~/notes$ cat tasks.txt
  Completed tasks

  1. Managed file structure in /home/analyst
analyst@95cc38ed66c7:~/notes$
```

Summary

Here, I successfully found and searched files, created and removed a directory, moved and removed a file, and created and edited a file on Linux Terminal.