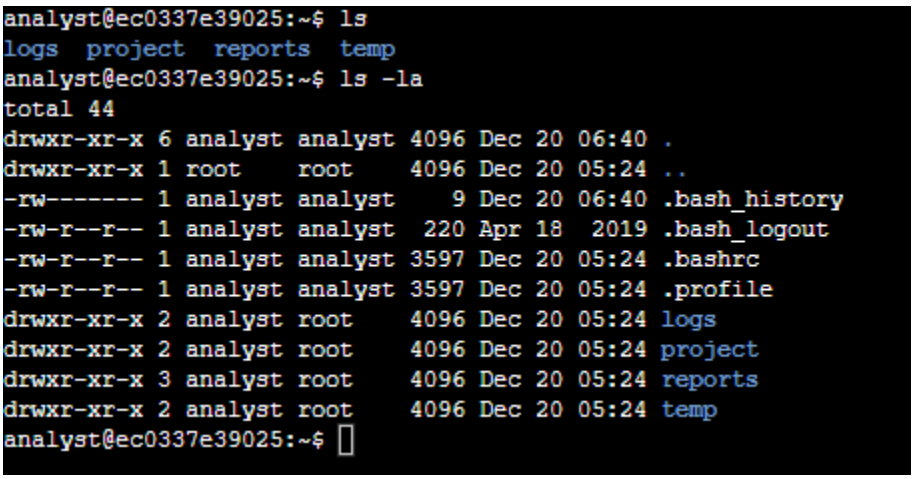
File management and modification in Linux

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.



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` . 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, I 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` (if 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` (if 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$
```

Finally, 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 which 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, 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.

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

Create and edit a file

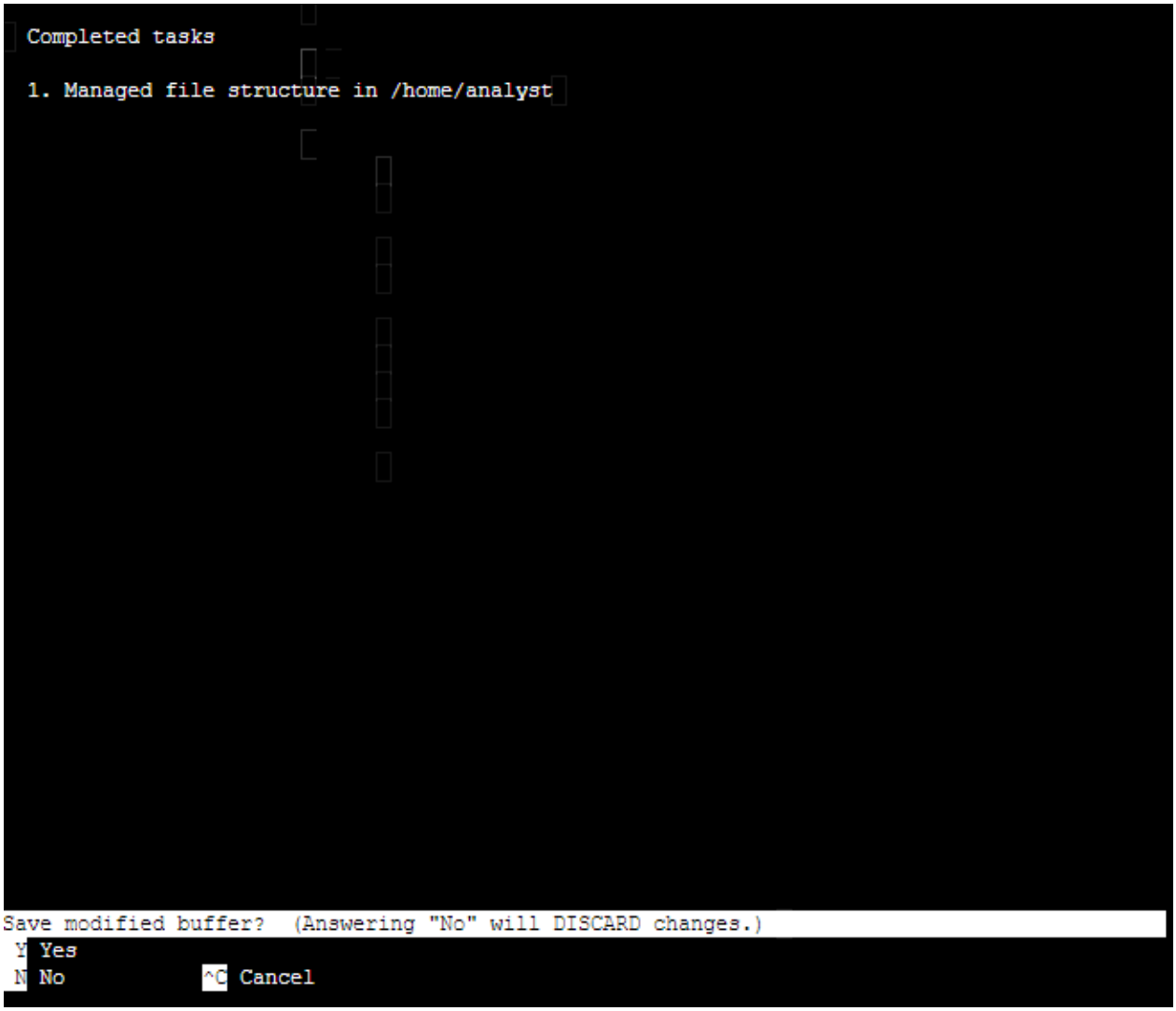
The analyst team would like me to create a new file and edit it. The command `touch tasks.txt` allows us to create a file. On the other hand, the command `nano tasks.txt` allows us to edit a file. Then, press enter to confirm that the file name to write is tasks.txt. Use `cat tasks.txt` command to display the contents of the tasks.txt.

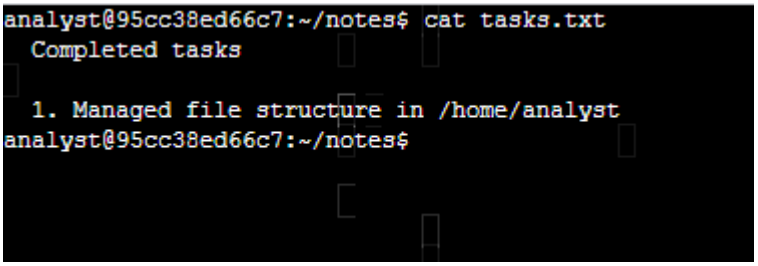
```
analyst@95cc38ed66c7:~/notes$ touch tasks.txt
analyst@95cc38ed66c7:~/notes$ ls
tasks.txt
analyst@95cc38ed66c7:~/notes$
```

```
 Completed tasks

 1. Managed file structure in /home/analyst

^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify     ^C Cur Pos
^X Exit        ^R Read File   ^\ Replace     ^U Uncut Text  ^T To Spell    ^_ Go To Line
```





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.