

## Question 2 (2024eb03003):

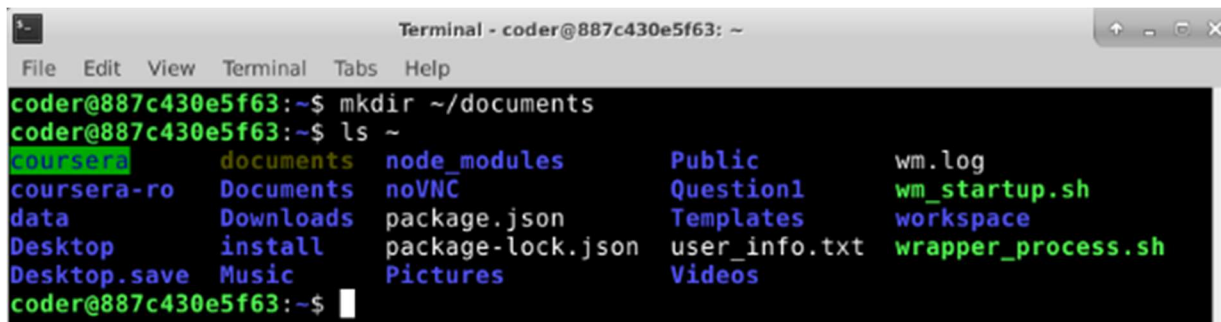
You are working as a junior system administrator responsible for organizing project- related files in your home directory.

Your supervisor wants you to demonstrate your understanding of Linux file and directory management commands.

### 1. Project Workspace Setup

Create a directory named documents inside the home directory. This directory will store the project-related files.

**mkdir ~/documents** {~ expands to our home directory and **mkdir** creates the documents directory there (no output if it succeeds)}.



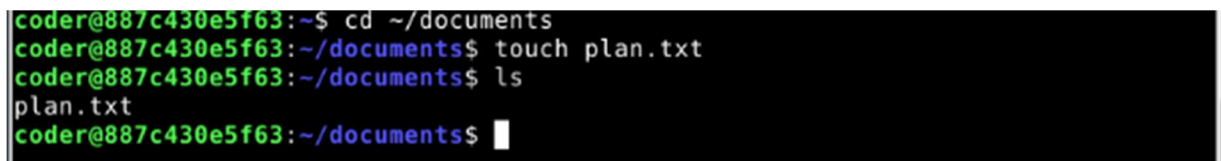
```
Terminal - coder@887c430e5f63: ~
File Edit View Terminal Tabs Help
coder@887c430e5f63:~$ mkdir ~/documents
coder@887c430e5f63:~$ ls ~
coursera documents node_modules Public wm.log
coursera-ro Documents noVNC Question1 wm_startup.sh
data Downloads package.json Templates workspace
Desktop install package-lock.json user_info.txt wrapper_process.sh
Desktop.save Music Pictures Videos
coder@887c430e5f63:~$
```

### 2. File Creation

Navigate into the documents directory and create a file named plan.txt.

**cd ~/documents** (cd ~/documents moves into the documents directory.)

**touch plan.txt** (creates an empty file named plan.txt or updates its timestamp if it already exists)



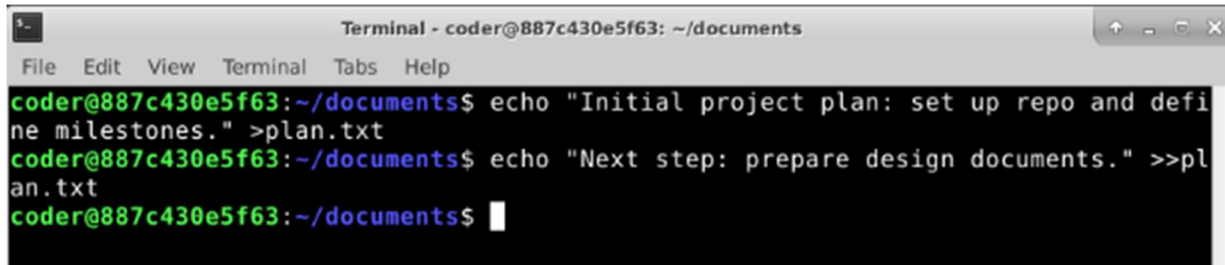
```
coder@887c430e5f63:~$ cd ~/documents
coder@887c430e5f63:~/documents$ touch plan.txt
coder@887c430e5f63:~/documents$ ls
plan.txt
coder@887c430e5f63:~/documents$
```

### 3. Content Addition

Write some sample text of your choice into the plan.txt file. The content can be a short project note or reminder.

**echo "Initial project plan: set up repo and define milestones." > plan.txt** (We add a short line of text)

**echo "Next step: prepare design document." >> plan.txt** (This overwrites plan.txt with that sentence. To append instead of overwrite, use >>)

A terminal window titled "Terminal - coder@887c430e5f63: ~/documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows three commands: 1. `echo "Initial project plan: set up repo and define milestones." >plan.txt` 2. `echo "Next step: prepare design documents." >>plan.txt` 3. A blank prompt line.

```
coder@887c430e5f63:~/documents$ echo "Initial project plan: set up repo and define milestones." >plan.txt
coder@887c430e5f63:~/documents$ echo "Next step: prepare design documents." >>plan.txt
coder@887c430e5f63:~/documents$
```

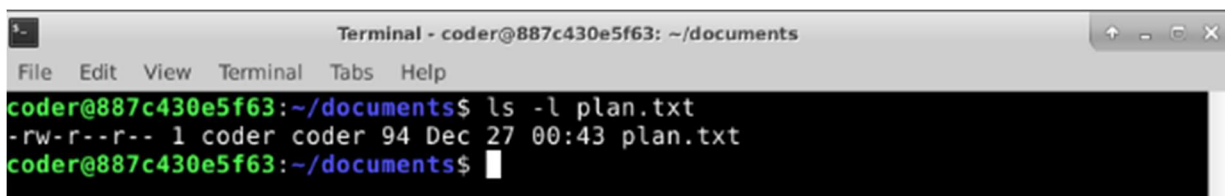
#### 4. File Metadata Verification

Display the permissions and ownership details of the plan.txt file. Ensure your username appears in the output.

**ls -l plan.txt**

This long listing shows:

- File type and permissions (first column, like -rw-r--r--)
- Link count
- Owner username (coder)
- Group name
- Size, timestamp, and filename

A terminal window titled "Terminal - coder@887c430e5f63: ~/documents" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the command `ls -l plan.txt` and its output: `-rw-r--r-- 1 coder coder 94 Dec 27 00:43 plan.txt`.

```
coder@887c430e5f63:~/documents$ ls -l plan.txt
-rw-r--r-- 1 coder coder 94 Dec 27 00:43 plan.txt
coder@887c430e5f63:~/documents$
```

#### 5. File Duplication

Create a copy of plan.txt and name it plan\_copy.txt.

**cp plan.txt plan\_copy.txt** (This command creates plan\_copy.txt as an exact copy of plan.txt in the same directory)

```
Terminal - coder@887c430e5f63: ~/documents
File Edit View Terminal Tabs Help
coder@887c430e5f63:~/documents$ cp plan.txt plan_copy.txt
coder@887c430e5f63:~/documents$ ls
plan_copy.txt  plan.txt
coder@887c430e5f63:~/documents$
```

## 6. Directory Renaming

Rename the documents directory to project\_documents to reflect the project scope more clearly.

**mv ~/documents ~/project\_documents** (This command renames the documents directory to project\_documents while keeping all its contents unchanged)

```
Terminal - coder@887c430e5f63: ~
File Edit View Terminal Tabs Help
coder@887c430e5f63:~$ mv ~/documents ~/project_documents
coder@887c430e5f63:~$ ls
coursera      Downloads      package-lock.json  user_info.txt
coursera-ro   install        Pictures            Videos
data          Music          project_documents  wm.log
Desktop       node_modules   Public              wm_startup.sh
Desktop.save  noVNC          Question1           workspace
Documents     package.json   Templates           wrapper_process.sh
coder@887c430e5f63:~$
```

## 7. Archival Structure

Inside the project\_documents directory, create a subdirectory named archive.

**mkdir ~/project\_documents/archive** (This command creates the archive subdirectory inside project\_documents)

```
Terminal - coder@887c430e5f63: ~/project_documents
File Edit View Terminal Tabs Help
coder@887c430e5f63:~$ mkdir ~/project_documents/archive
coder@887c430e5f63:~$ cd project_documents
coder@887c430e5f63:~/project_documents$ ls
archive  plan_copy.txt  plan.txt
coder@887c430e5f63:~/project_documents$
```

## 8. File Organization

Move plan\_copy.txt into the archive subdirectory.

**mv ~/project\_documents/plan\_copy.txt ~/project\_documents/archive/** (This command moves plan\_copy.txt into the archive subdirectory under project\_documents)

```
Terminal - coder@887c430e5f63: ~/project_documents
File Edit View Terminal Tabs Help
coder@887c430e5f63:~$ mv ~/project_documents/plan_copy.txt ~/project_documents/archive/
```

## 9. Recursive Listing

List all files and subdirectories inside `project_documents` recursively so that the complete directory structure is visible.

**ls -R ~/project\_documents** (This command prints `project_documents`, its files, and every subdirectory (like `archive/`) with their contents in a tree-style listing)

```
Terminal - coder@887c430e5f63: ~
File Edit View Terminal Tabs Help
coder@887c430e5f63:~$ ls -R ~/project_documents
/home/coder/project_documents:
archive plan.txt

/home/coder/project_documents/archive:
plan_copy.txt
coder@887c430e5f63:~$
```

## 10. Path Verification

Display the absolute path of the `plan_copy.txt` file after it has been moved to the `archive` directory.

**echo "\$HOME/project\_documents/archive/plan\_copy.txt"** (This command prints the full path to `plan_copy.txt` in the `archive` directory)

```
Terminal - coder@887c430e5f63: ~
File Edit View Terminal Tabs Help
coder@887c430e5f63:~$ echo "$HOME/proejct_documents/archive/plan_copy.txt"
/home/coder/proejct_documents/archive/plan_copy.txt
coder@887c430e5f63:~$
```