CompTIA Linux+

Exercise 1 - Perform Basic File Editing Operations Using vi

Basic file editing includes viewing, inserting, deleting, or making such modifications to a file. Linux offers the vi editor to enable the users to perform these operations. In addition, you can use vi to create, copy, and delete files.

In this exercise, you will understand how to perform basic file editing operations using the vi editor.

Learning Outcomes

After completing this exercise, you will be able to:

- Log into a Linux system
- Create a document using vi
- Navigate a document using vi
- Manage a file using vi

Your Devices

You will be using the following device in this lab. Please power these on now.

- PLABLINUX01 (CentOS Server)

Task 1 - Create a Document Using vi

In this task, you will create a file, enter text, save, and then close the file using vi editor.

To use basic vi modes, perform the following steps:

Step 1

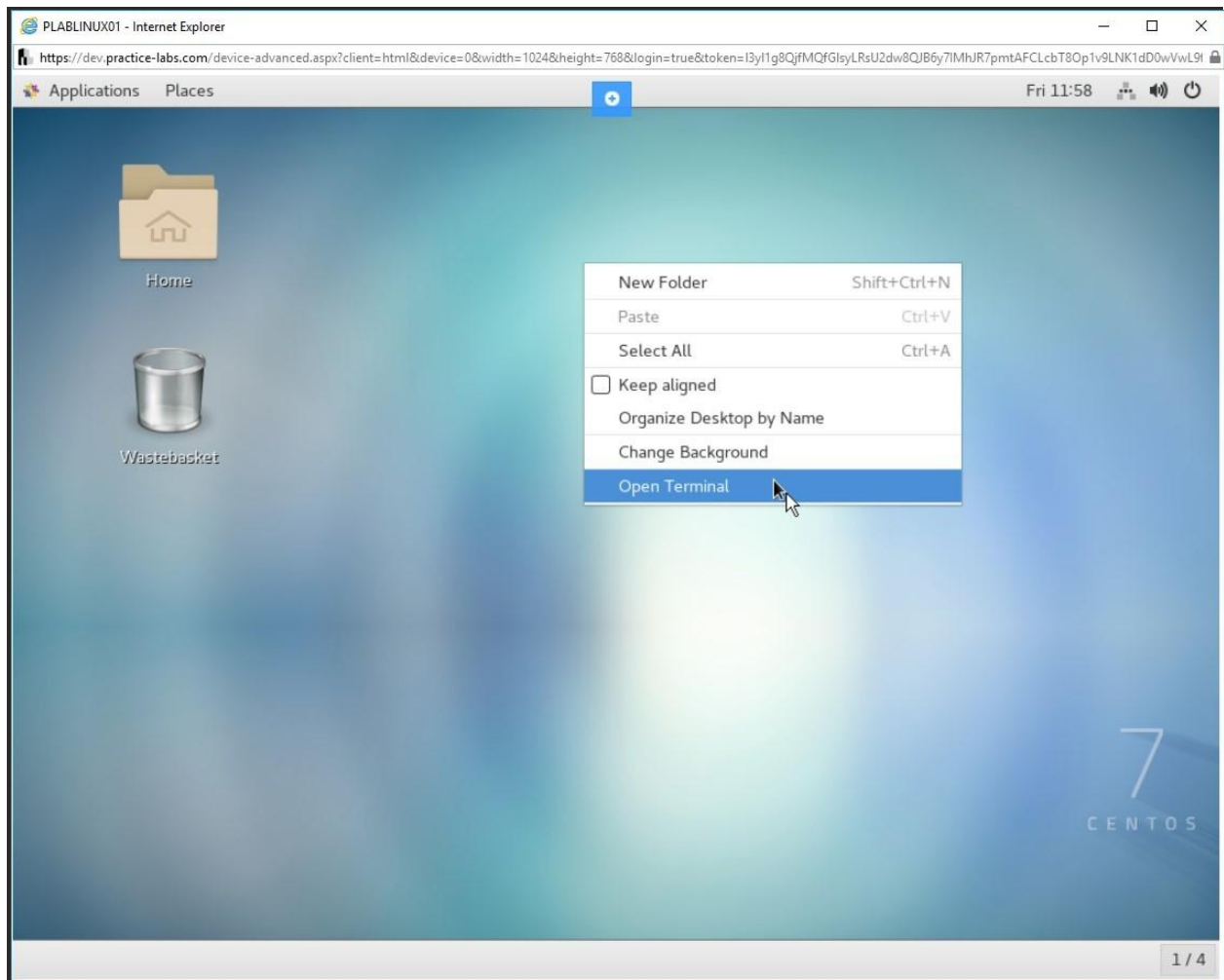On the desktop, right-click and select Open Terminal.

Figure 1.1 Screenshot of PLABLINUX01: Selecting the Open Terminal option from the context menu.

Step 2

To create a new document using the vi editor, type the following command:
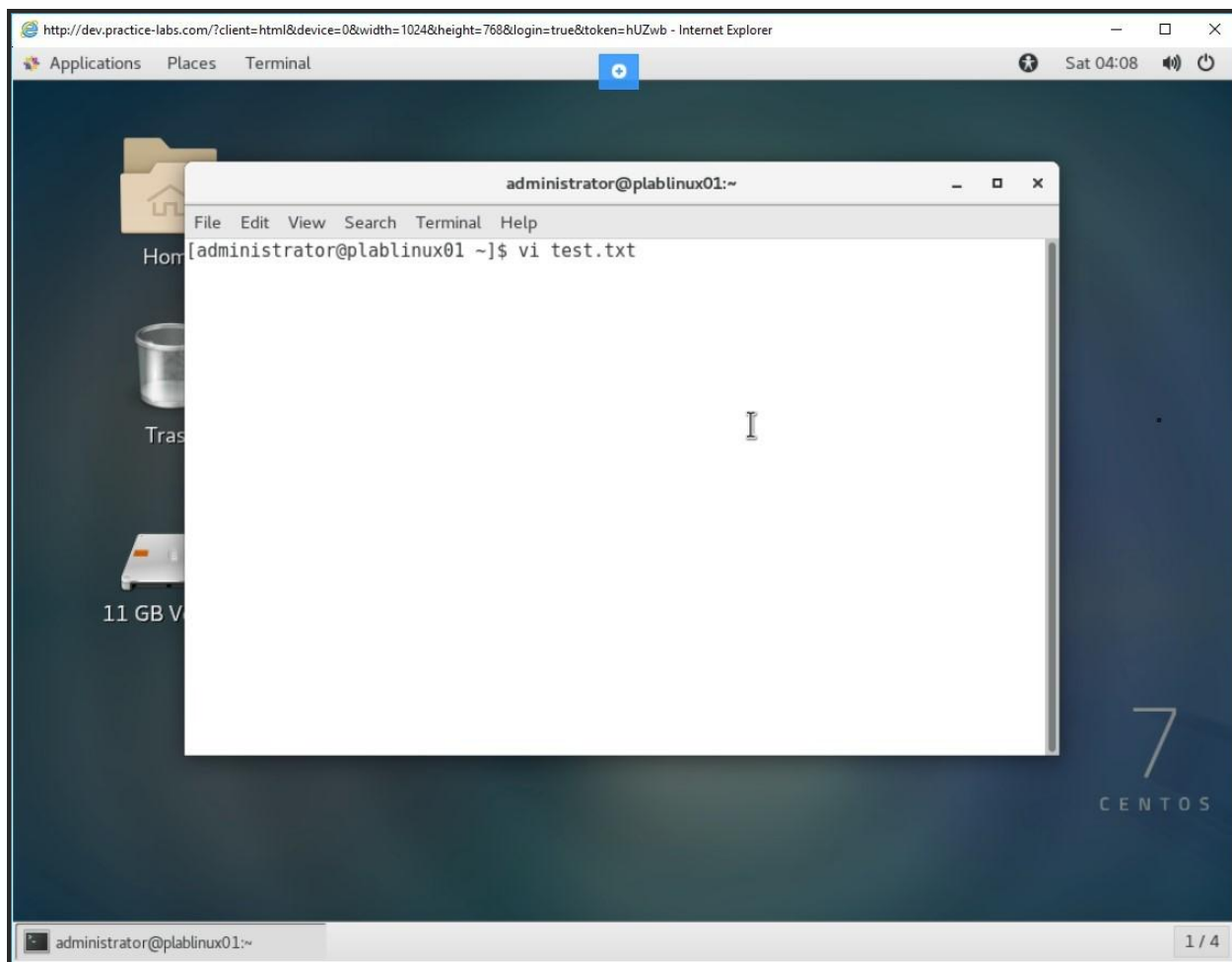
```
vi test.txt
```

Press Enter.

Figure 1.2 Screenshot of PLABLINUX01: Creating a new document using the vi editor.

Step 3

Notice a new document is created with the name test.txt, and it is now available for editing in the vi editor.
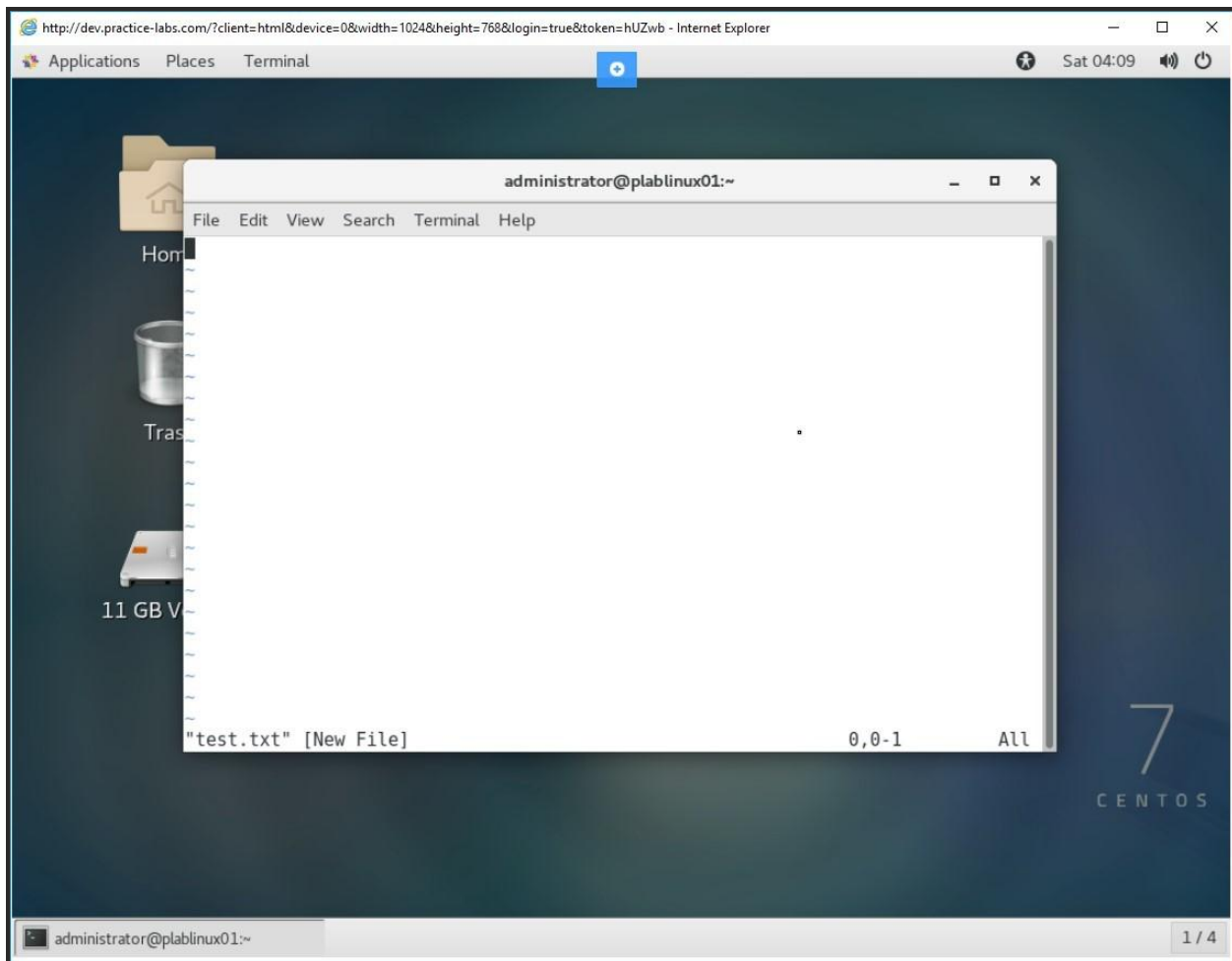
Figure 1.3 Screenshot of PLABLINUX01: Showing the newly created document.

Step 4

The vi editor has two modes: command and insert modes. You use the command mode to execute various commands while the insert mode is used to enter text into a file.

Press i to get into the insert mode. Notice - - INSERT- - mode message appears.

Type the following text in the document:

```
This is a test file.
```

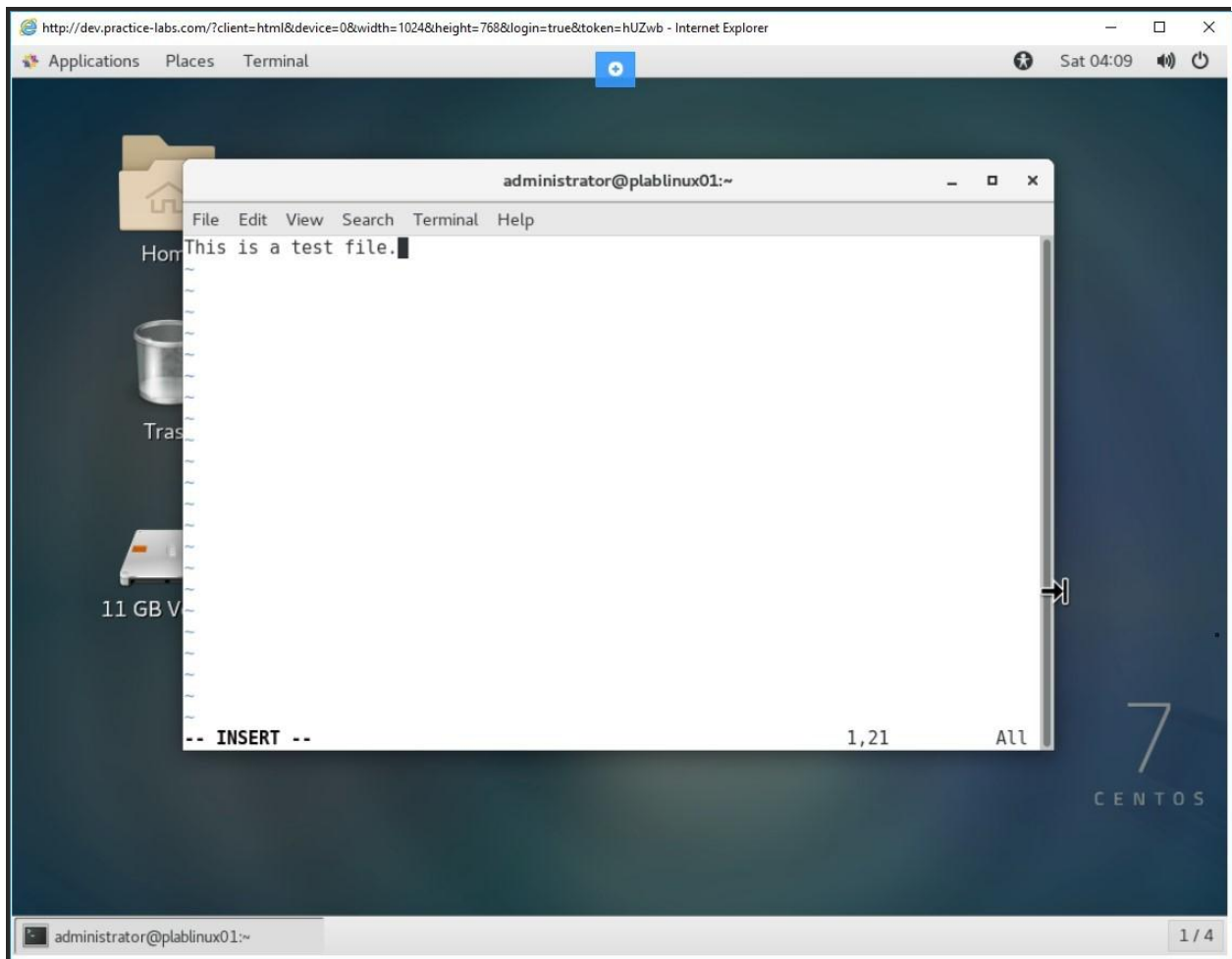Note: Pressing a will also put the document in the insert mode.

Figure 1.4 Screenshot of PLABLINUX01: Entering the text using the Insert mode in the test.txt file.

Step 5

You will now need to save and close the file with the typed text.

Press ESC and type the following command:
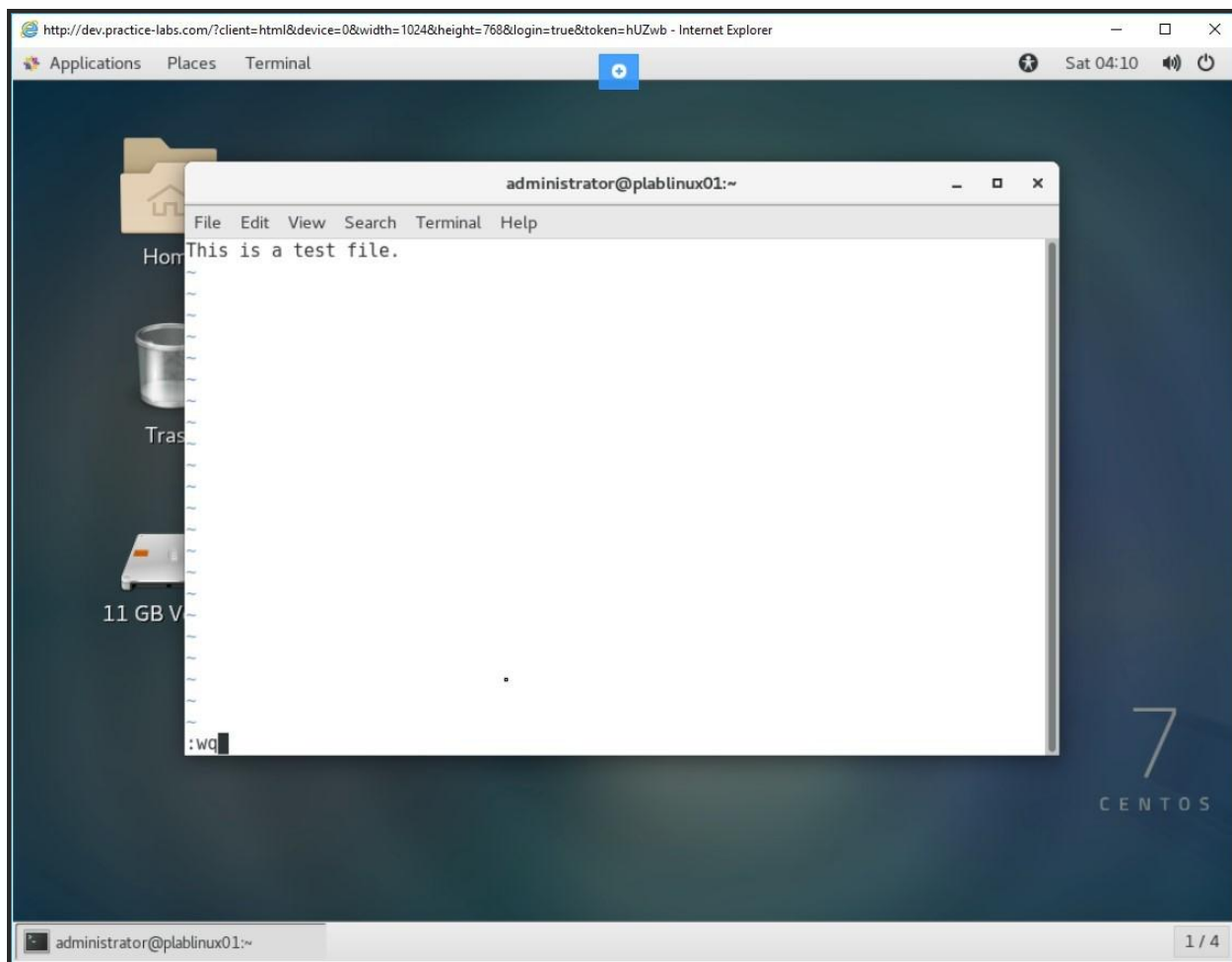
```
:wq
```

Press Enter.

Figure 1.5 Screenshot of PLABLINUX01: Saving the file in the vi editor.

Step 6

You will now be navigated back to the command prompt. The file is now saved and closed.
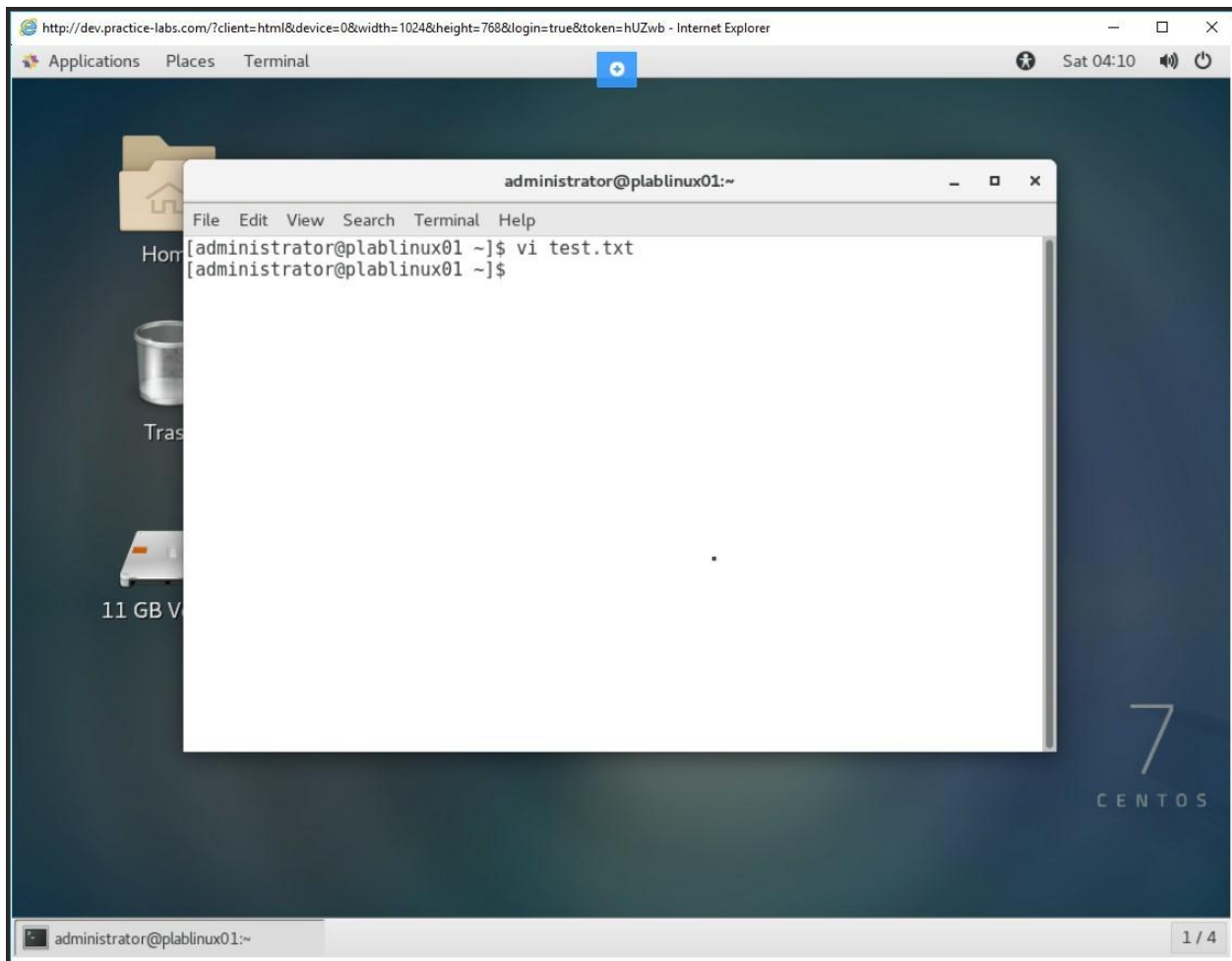
Figure 1.6 Screenshot of PLABLINUX01: Returning to the terminal window after saving and exiting the file.

Task 2 - Navigate a Document Using vi

To navigate a document using vi, perform the following steps:

Step 1

Open the test.txt file once again. Type the following command:

```
vi test.txt
```

Press Enter.

Note: Since this file is already created, you may see a message that this process is already open. Press R (to recover) and then press Enter to continue. You may encounter this message whenever you attempt to open the file again after creating it.

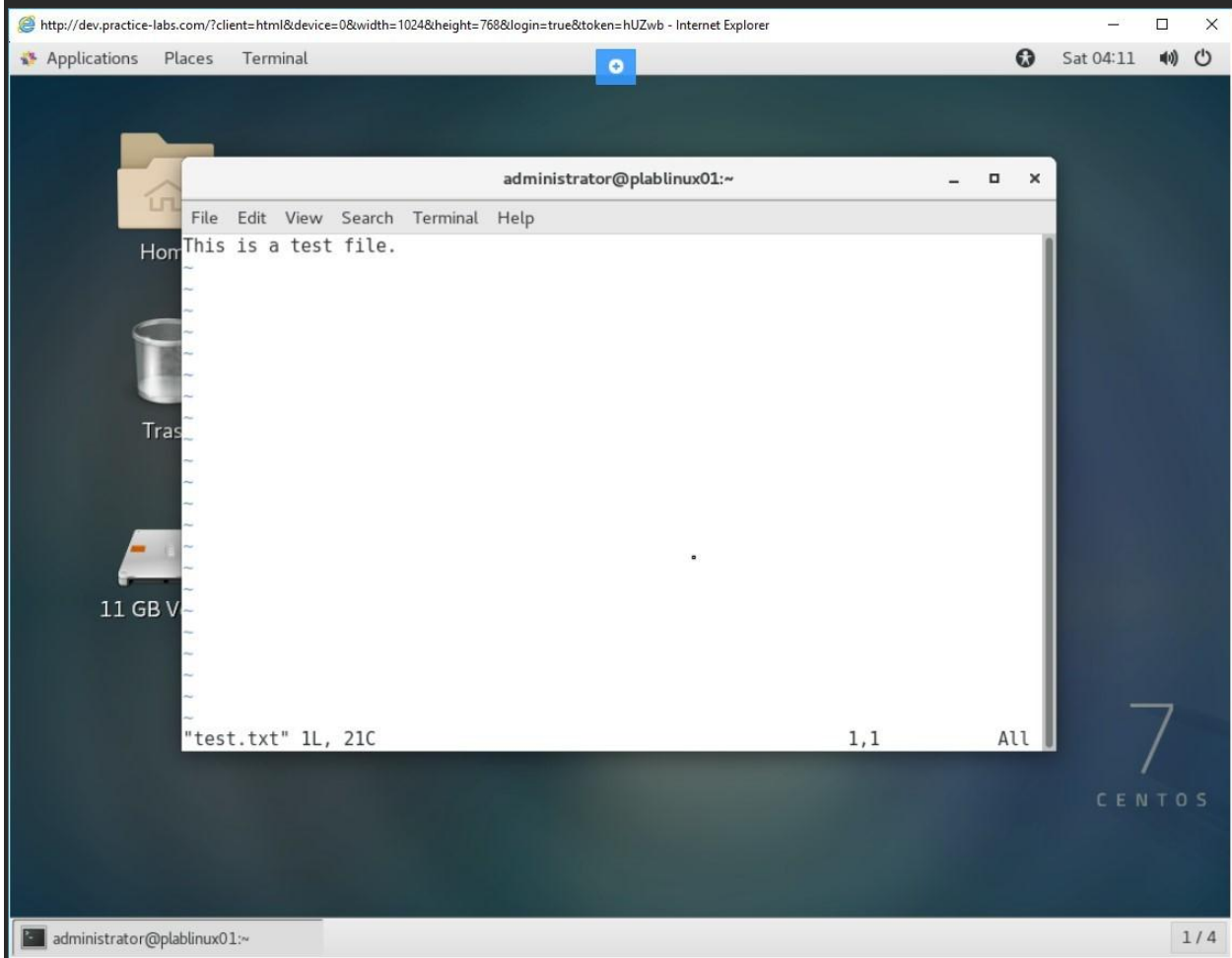The output displays the text you entered in the file.

Figure 1.7 Screenshot of PLABLINUX01: Opening the file again in the vi editor.

Step 2

You can start navigating the text within the file. Alternately, you can use the following keys to navigate within the file:

- The character l moves right one character.
- h moves left one character.
- j moves down one character.
- k moves up one character

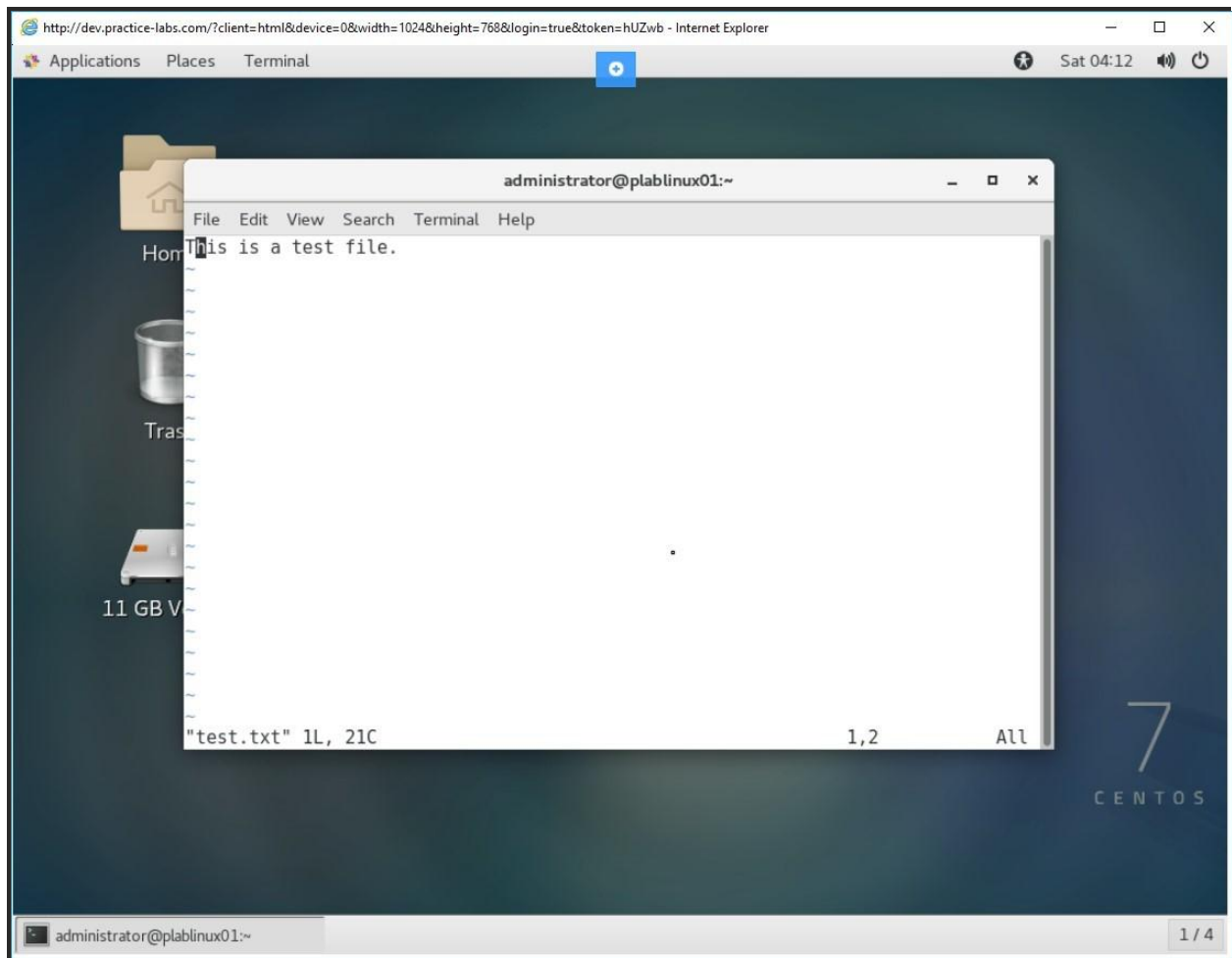Press l to move one character to the right.

Figure 1.8 Screenshot of PLABLINUX01: Moving one character to the right.

Step 3

To go back to the previous character, press h.

Note: you can use the arrow keys to perform these functions as well.
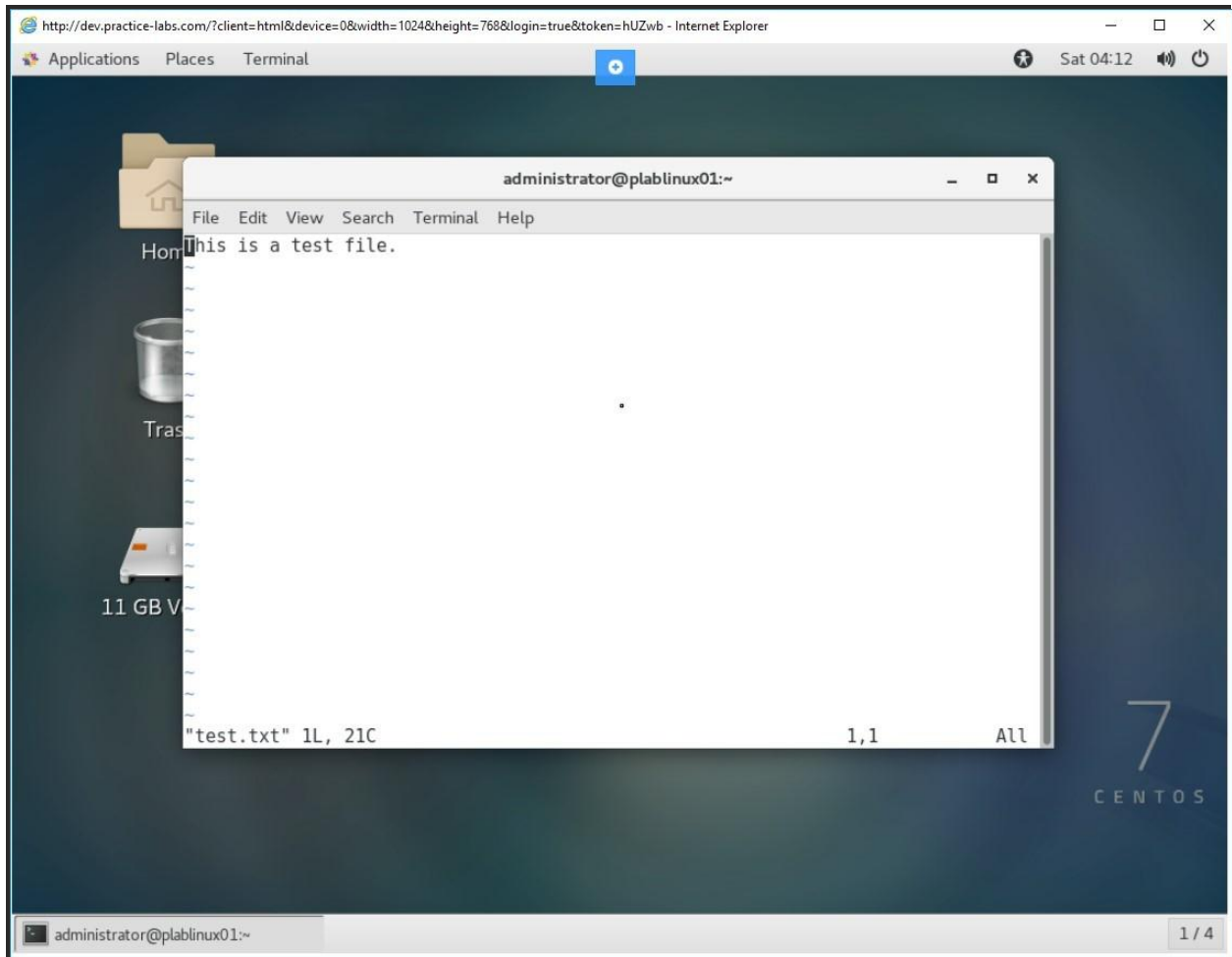
Figure 1.9 Screenshot of PLABLINUX01: Moving to the previous character.

Step 4

Before moving ahead, enter a few more lines in the test.txt file. You can add any text to make more lines in the test.txt file.

Note: Remember to press i to bring the document into the insert mode on can add your new lines.
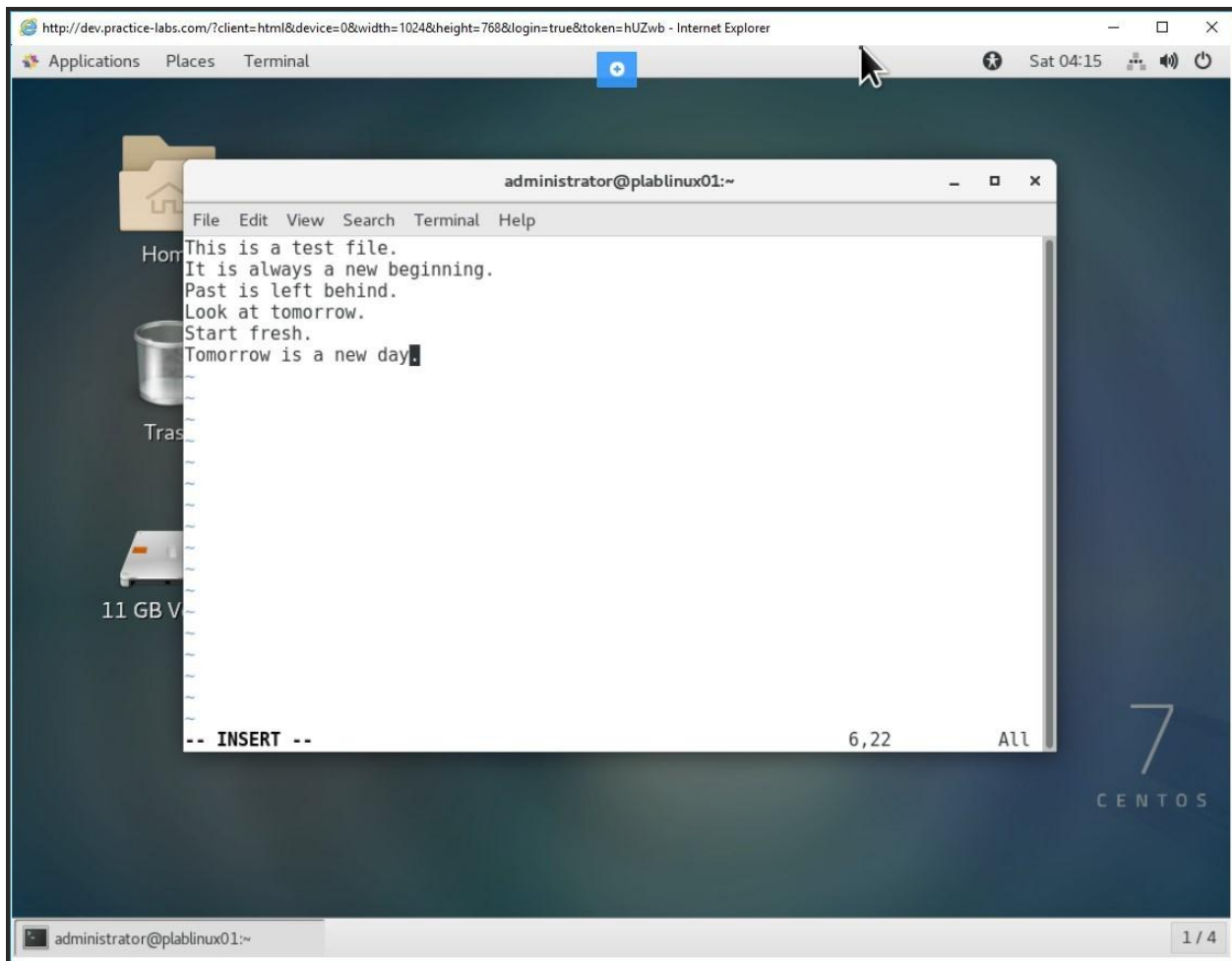
Figure 1.10 Screenshot of PLABLINUX01: Adding more text lines in the insert mode.

Step 5

Firstly, you need to ensure that you are not in the insert mode.

Press ESC to exit insert mode.

If you have more than one line in a file, then you can jump to a specific line by entering the line number, along with j/k.

For example, to move you up by 5 lines, you will need to type 5k. To move down three lines, you will need to enter 3j.

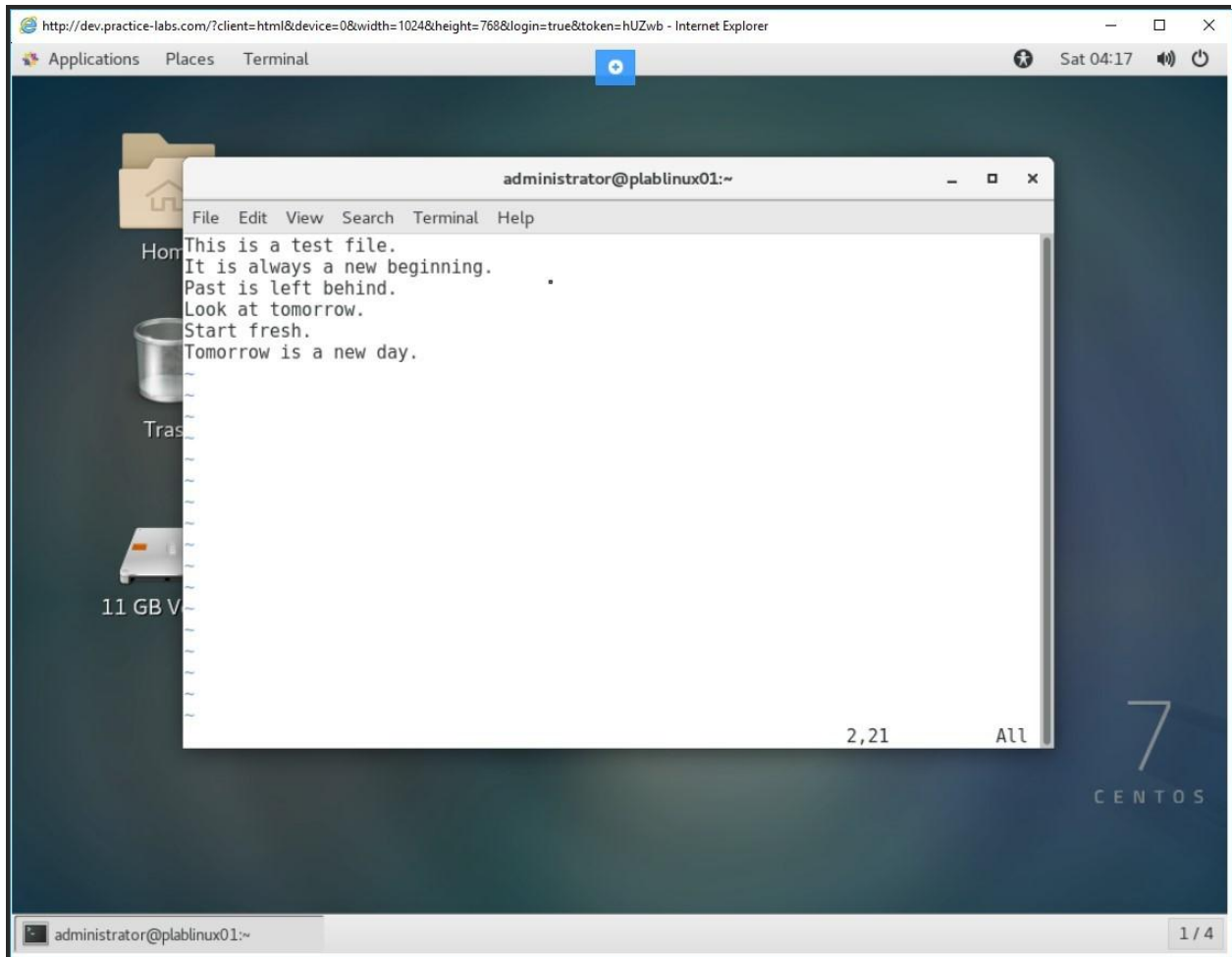To move to the next line below, press j, and to move to the next line above press k.

Figure 1.11 Screenshot of PLABLINUX01: Moving to the next line.

Step 6

To navigate to the end of a line, press SHIFT + $. You will jump to the end of the line.
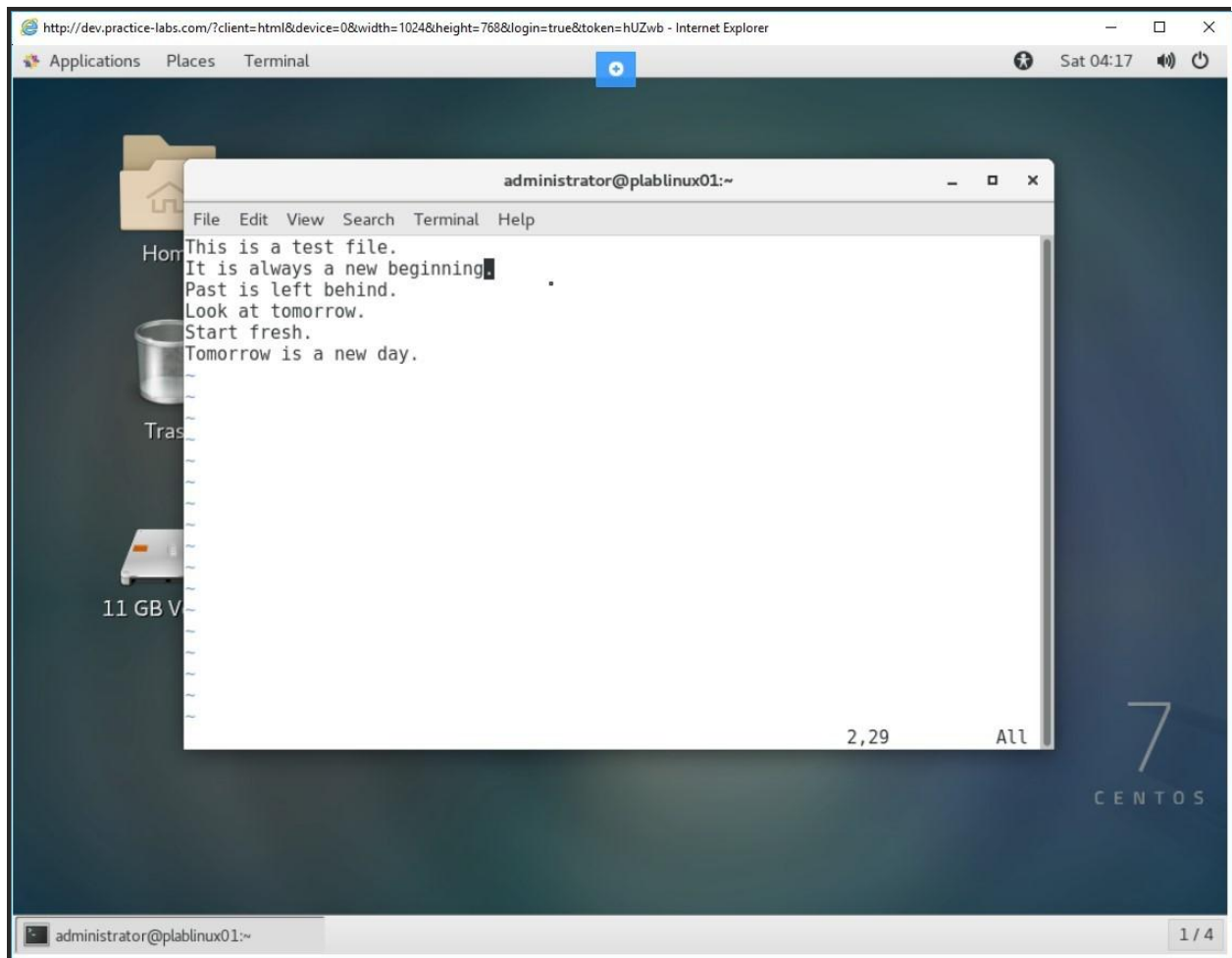
Figure 1.12 Screenshot of PLABLINUX01: Moving to the end of the line.

Step 7

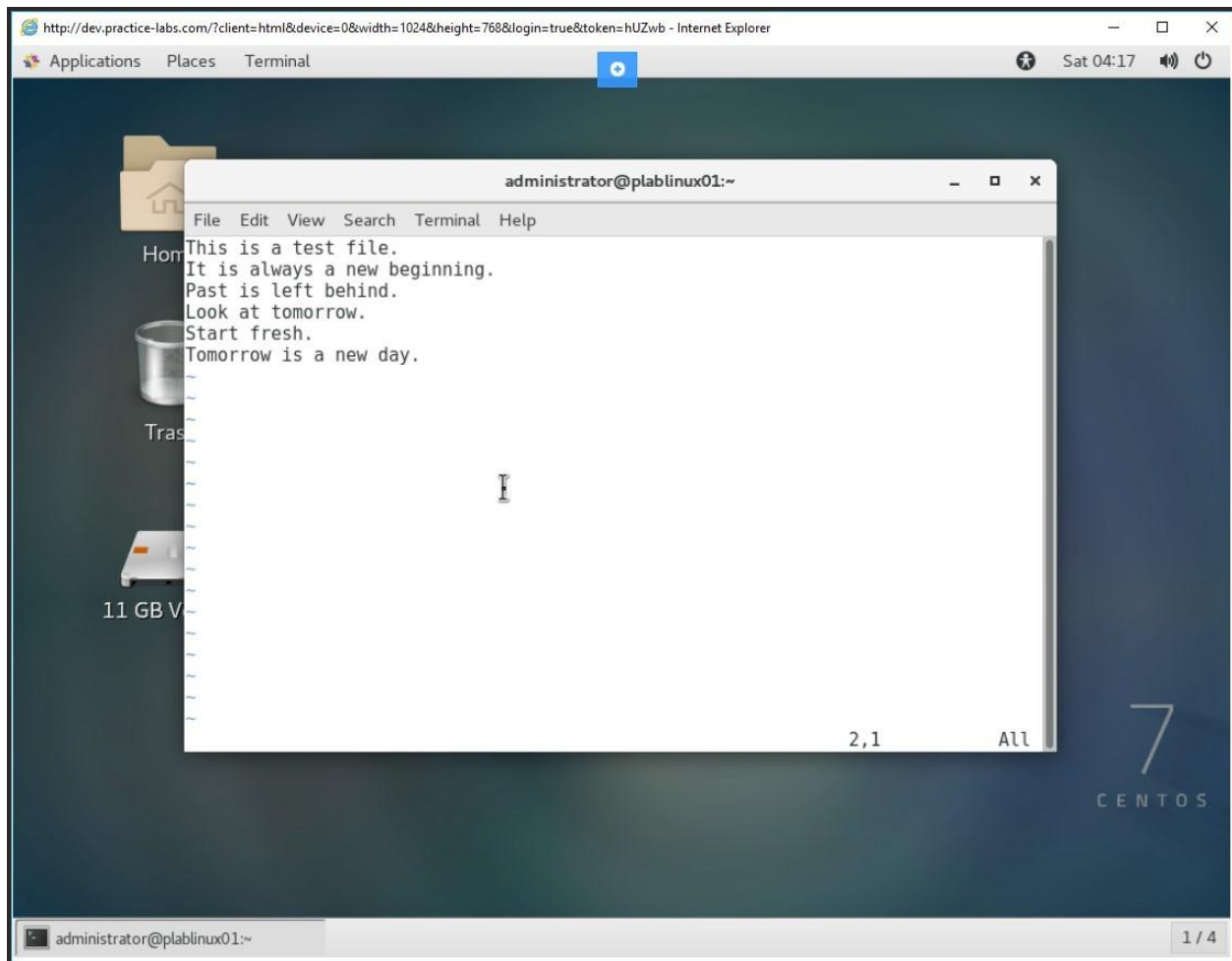To jump to the start of the line, enter SHIFT + ^.

Figure 1.13 Screenshot of PLABLINUX01: Jumping to the start of the line.

Step 8

To jump to the start of the file, press 1 then SHIFT +H. Ensure your cursor is not positioned at the start of the file to see this action and that you use a capital H.
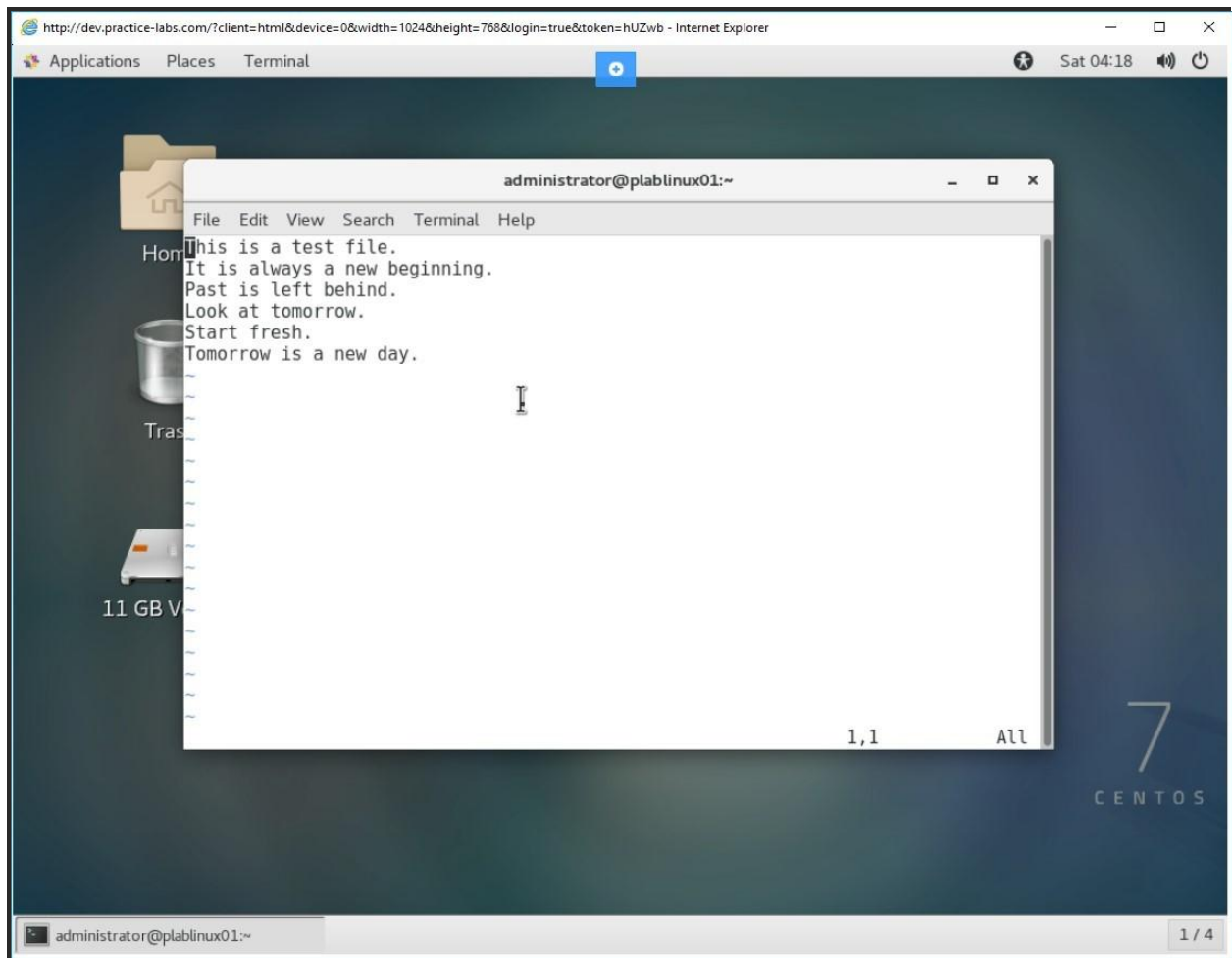
Figure 1.14 Screenshot of PLABLINUX01: Jumping to the start of the file.

Step 9

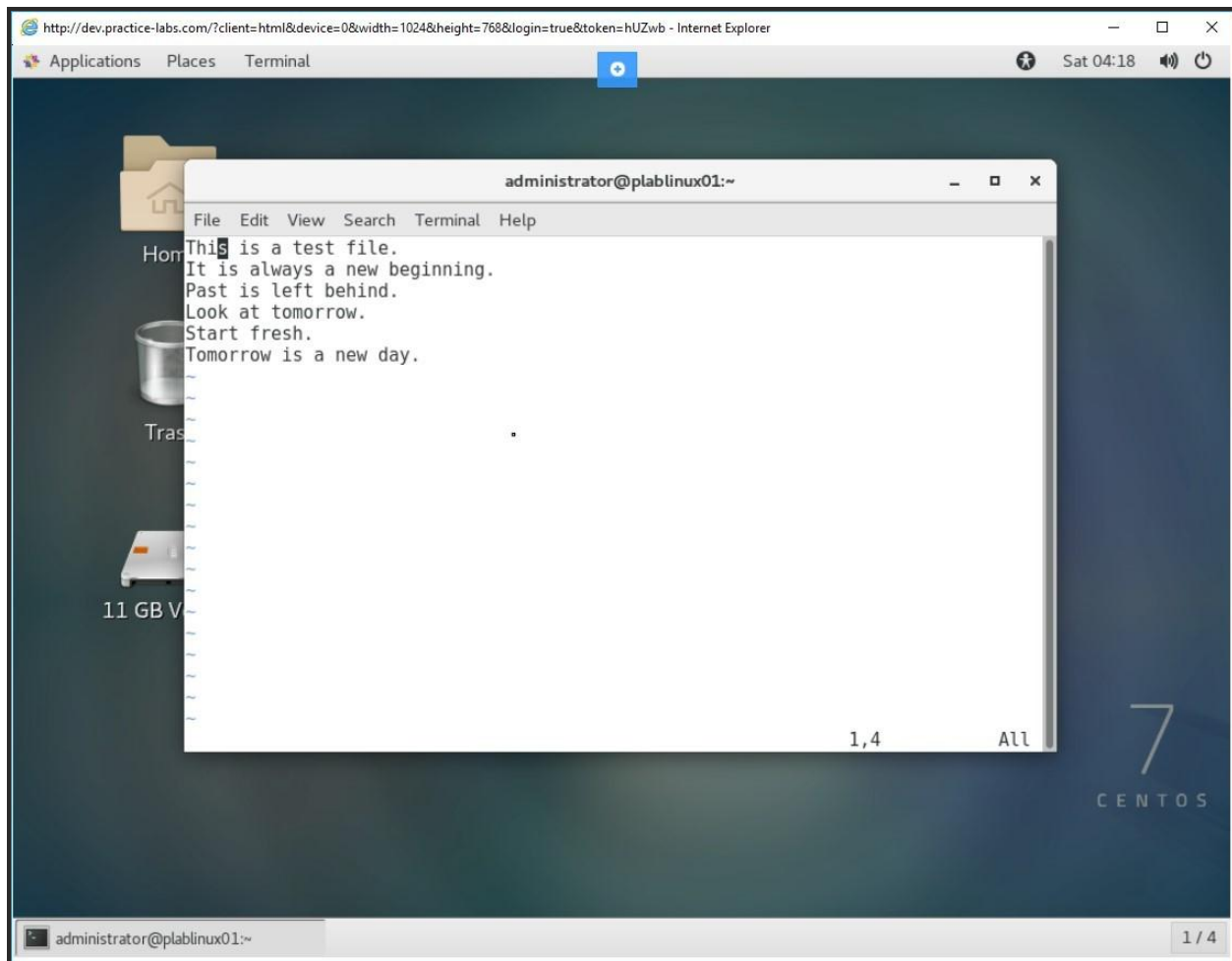To navigate to the end of a word, enter e.

Figure 1.15 Screenshot of PLABLINUX01: Navigating to the end of the word.

Step 10

The letter w is similar to e and navigates you to the start of the next word.
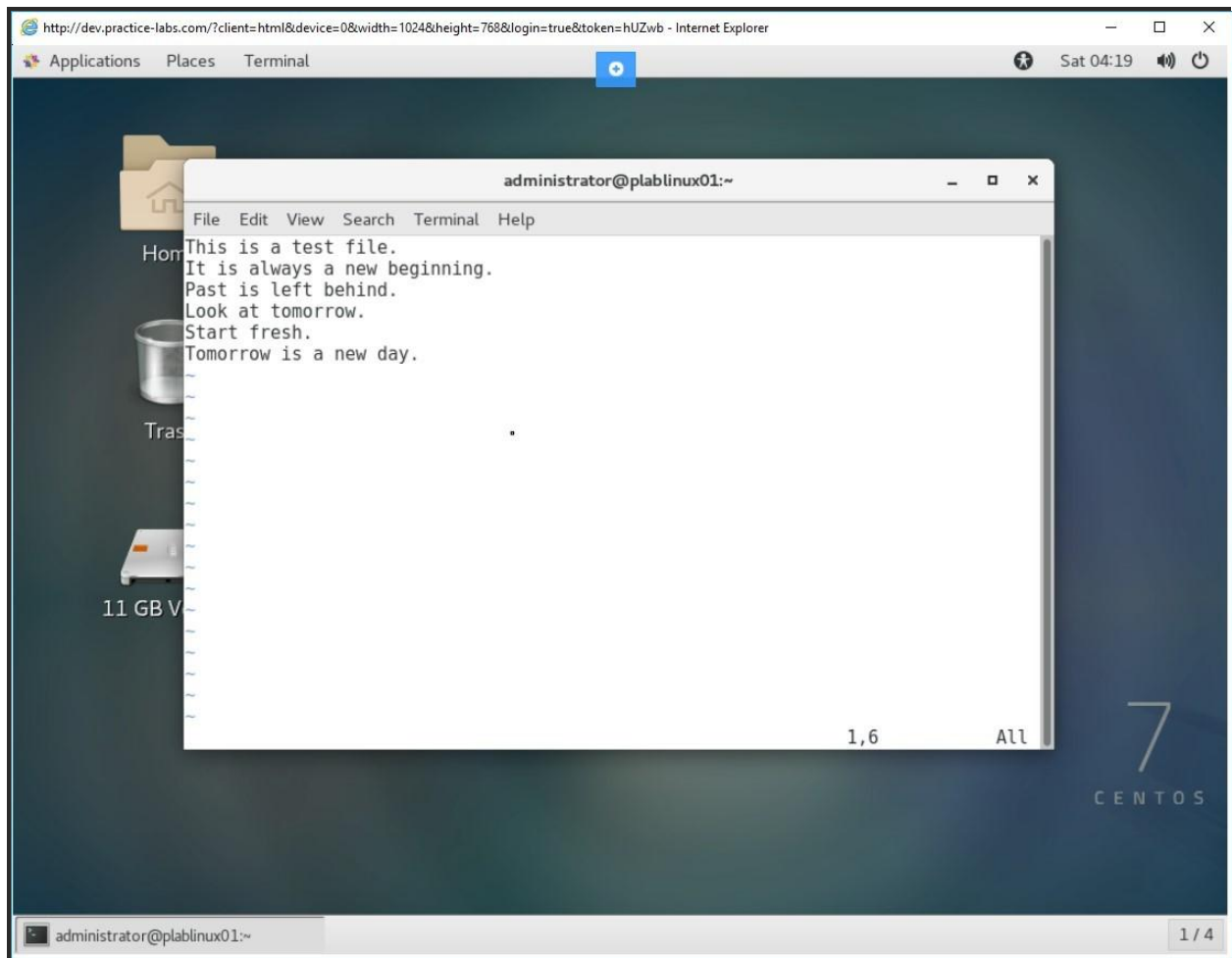
Figure 1.16 Screenshot of PLABLINUX01: Jumping to the end of the word including its space.

Step 11

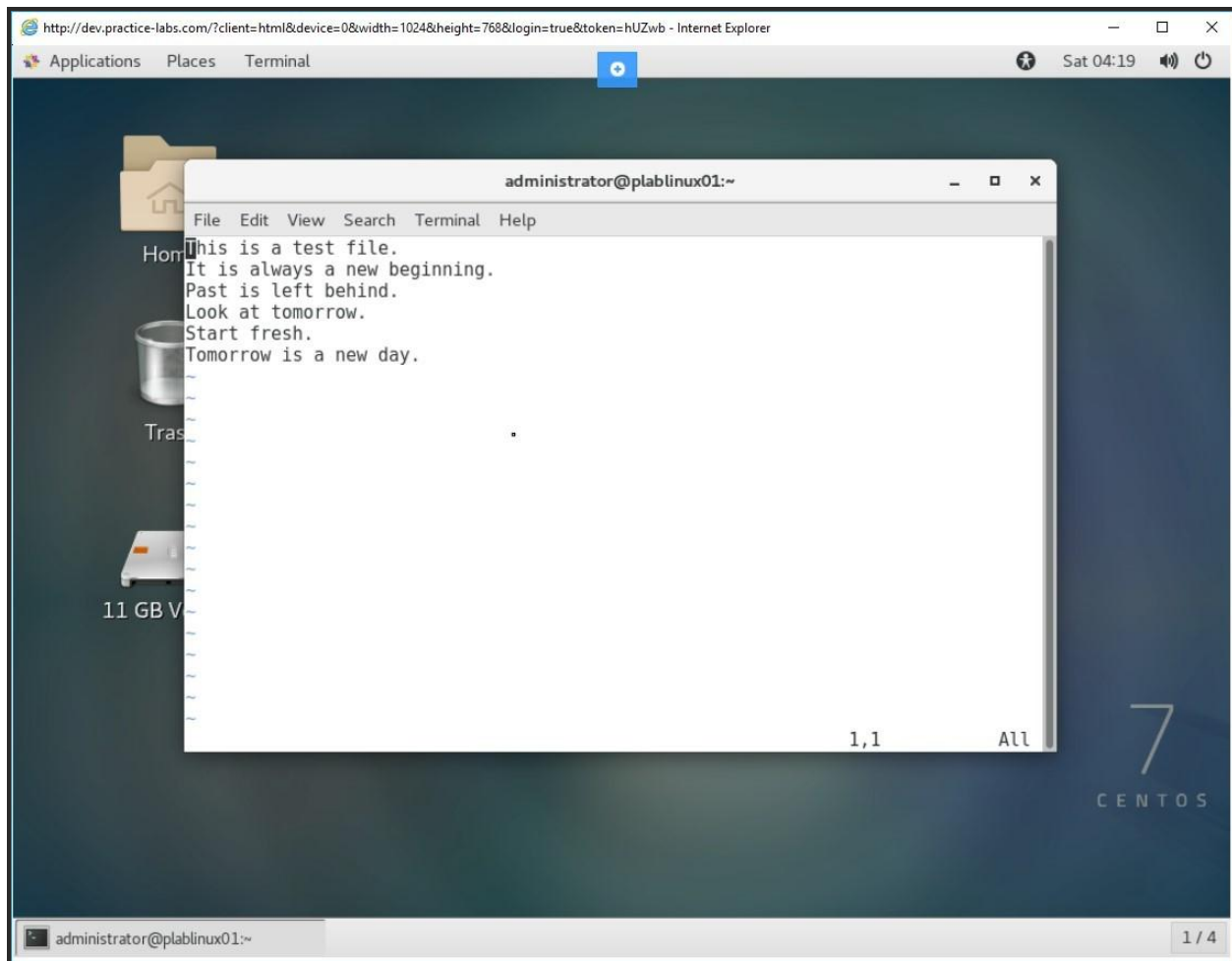To navigate to the start of the previous word, enter b.

Figure 1.17 Screenshot of PLABLINUX01: Navigating to the start of the previous word.

Step 12

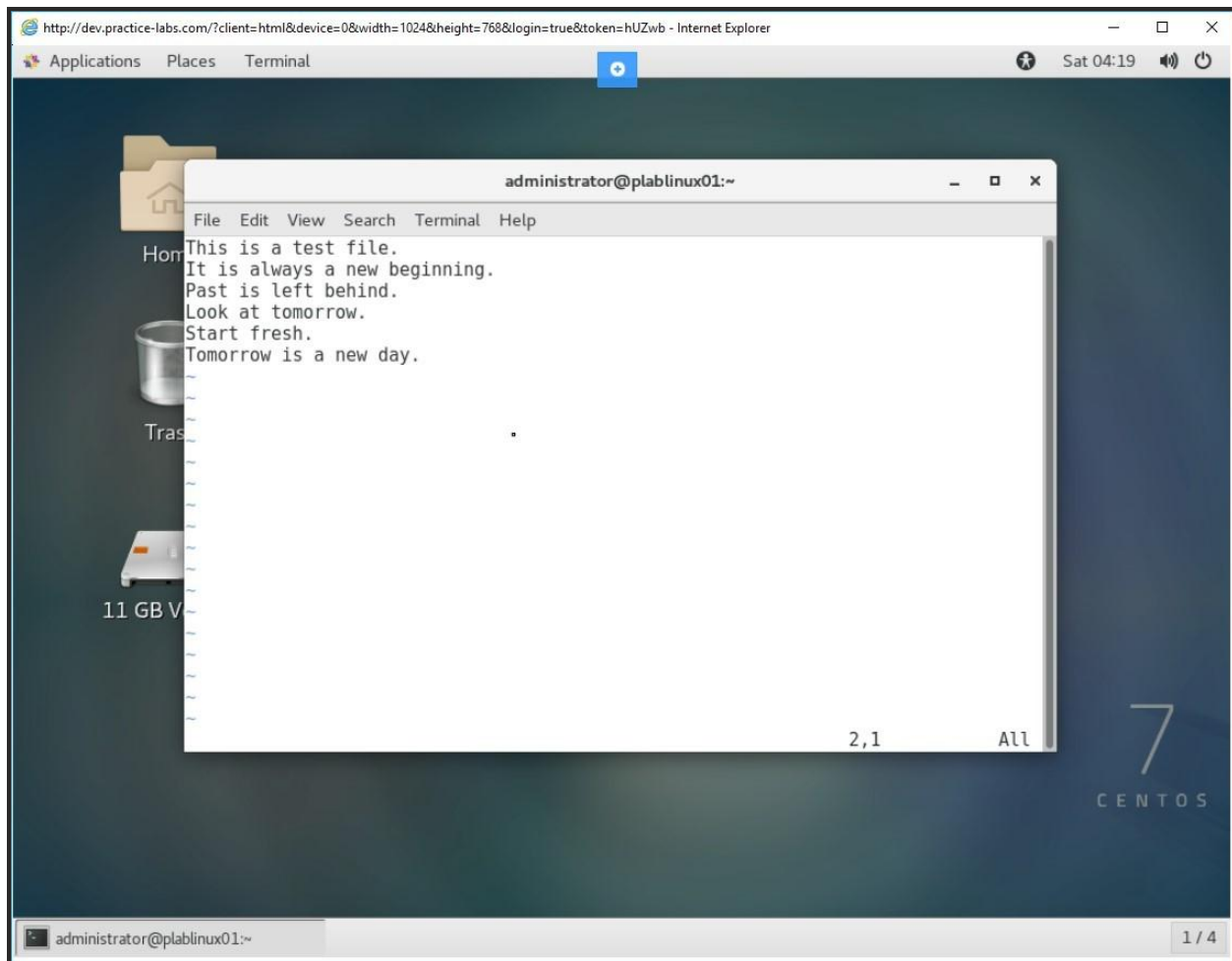To navigate to the start of the next sentence, press SHIFT +).

Figure 1.18 Screenshot of PLABLINUX01: Navigating to the start of the next sentence.

Step 13

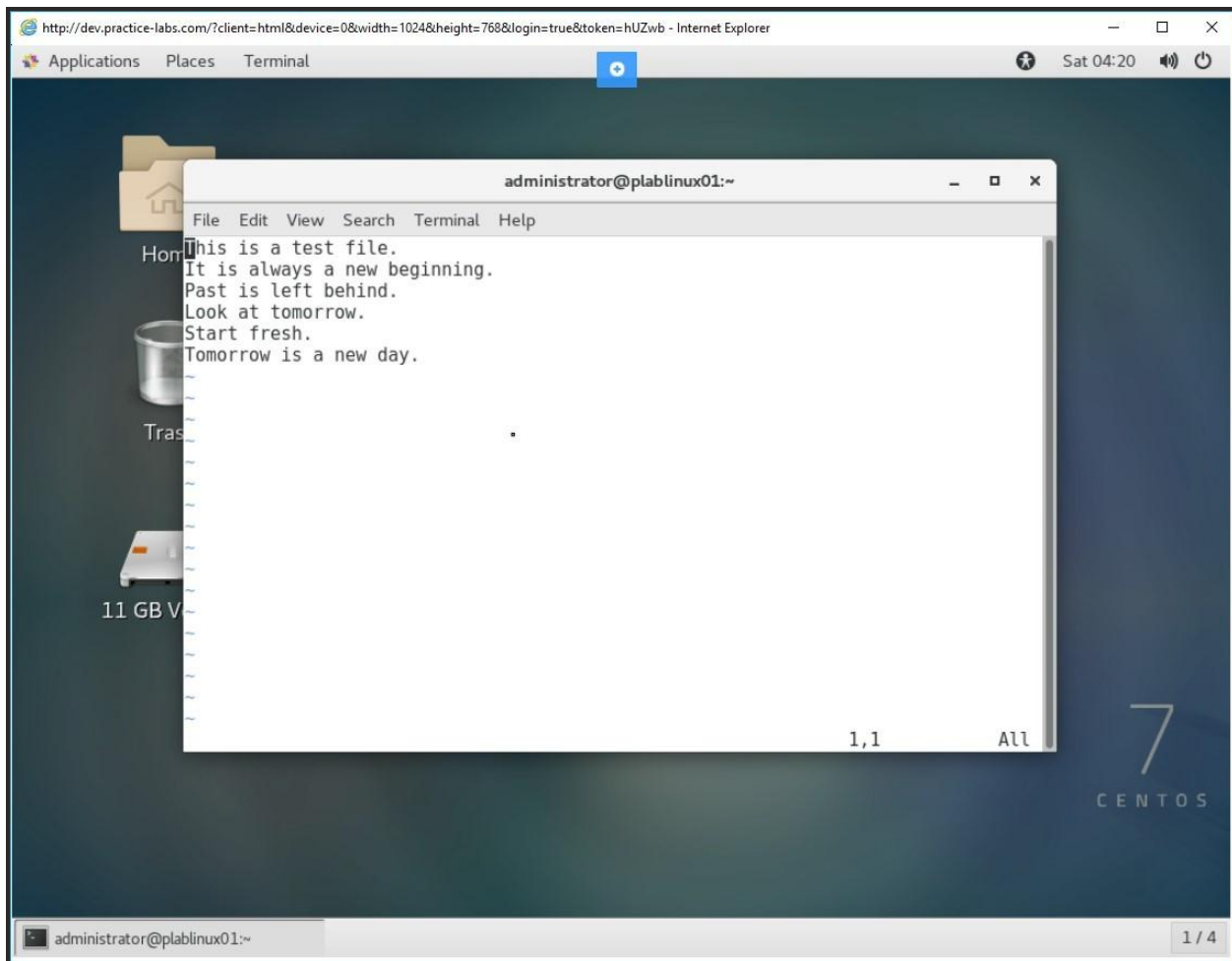To navigate to the start of the previous sentence, press SHIFT + (.

Figure 1.19 Screenshot of PLABLINUX01: Navigating to the start of the previous sentence.

Step 14

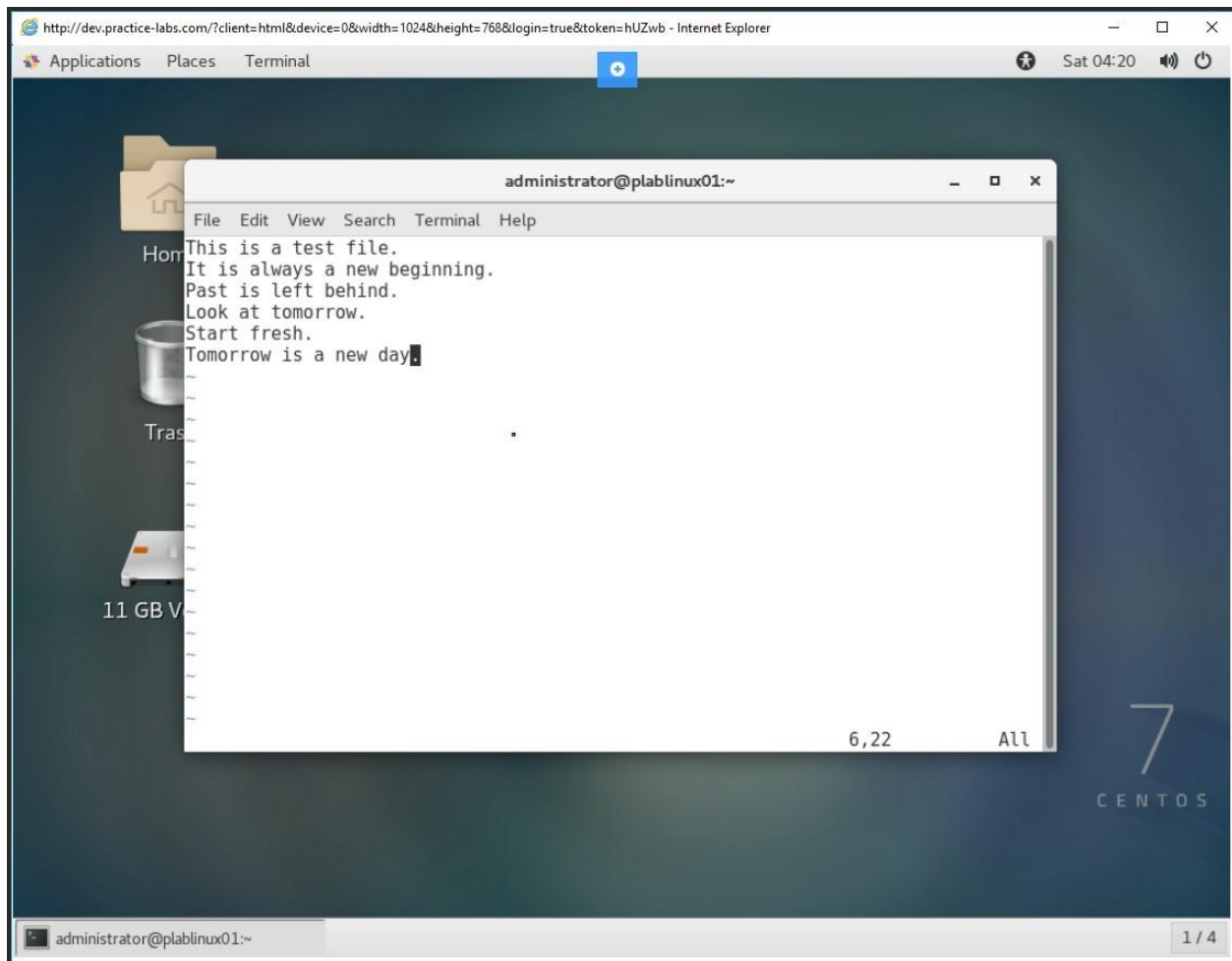To navigate to the end of the paragraph, press SHIFT + }.

Figure 1.20 Screenshot of PLABLINUX01: Navigating to the end of the paragraph.

Step 15

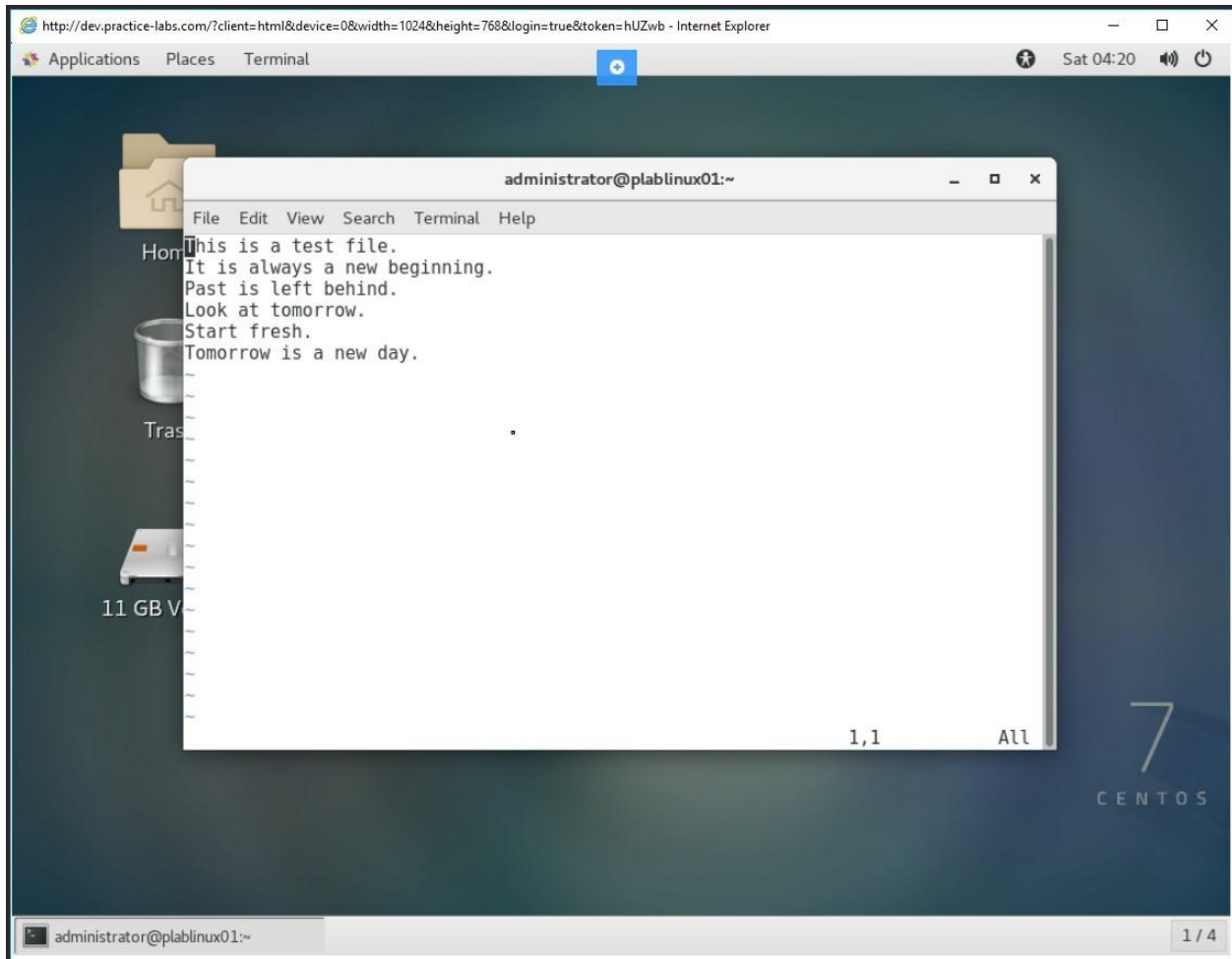To navigate to the start of the paragraph, press SHIFT + {.

Figure 1.21 Screenshot of PLABLINUX01: Navigating to the start of the paragraph.

Step 16

To search forward for a specific string of text, enter the string after a "/". For example, to search for "tomorrow" in the file, enter /tomorrow. Notice the text appears on the bottom of the window as you type.
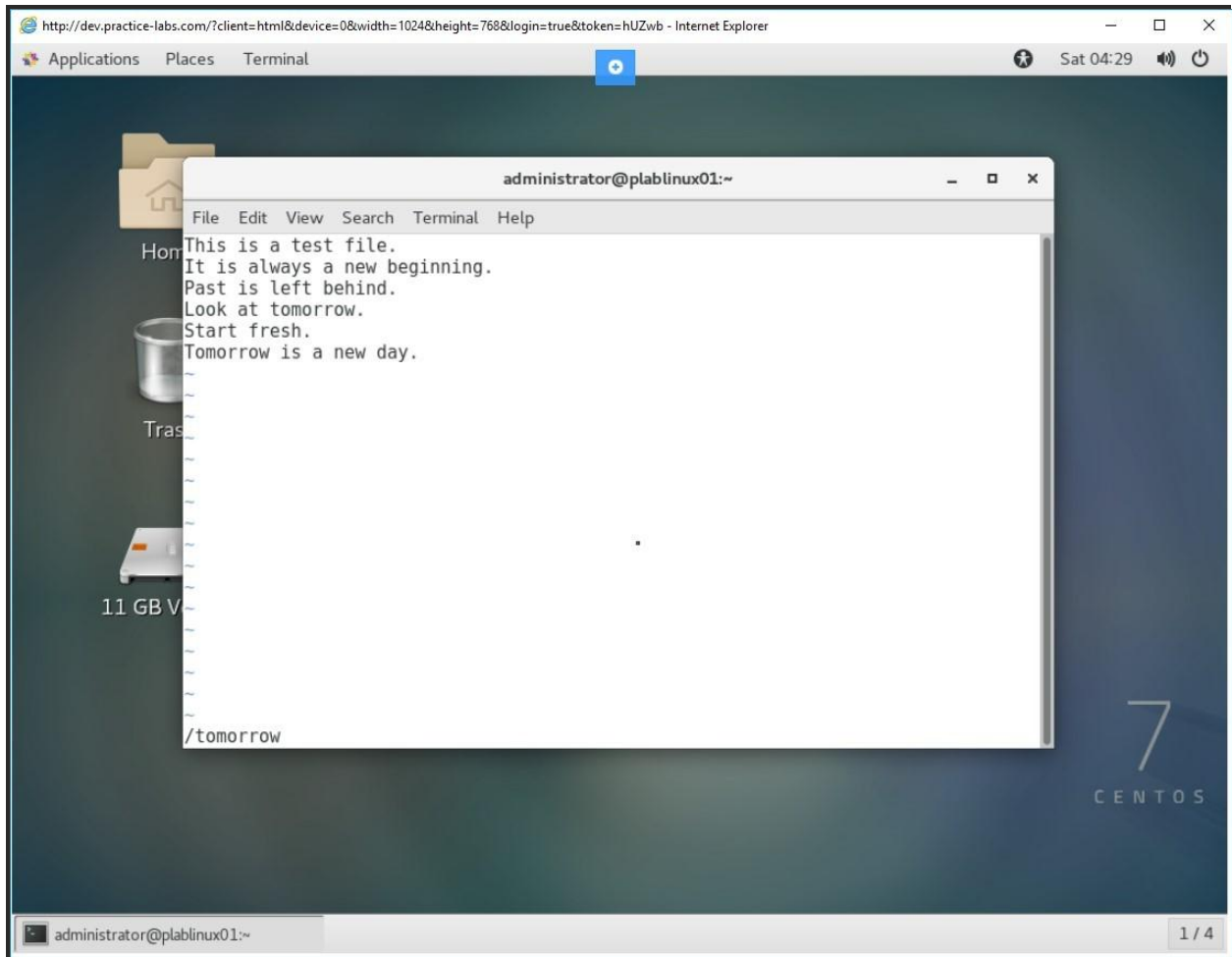
Note: it is case sensitive.

Figure 1.22 Screenshot of PLABLINUX01: Searching for a word.

Step 17

Press Enter.

Note that the first character of tomorrow is highlighted separately to the full word which is also highlighted.
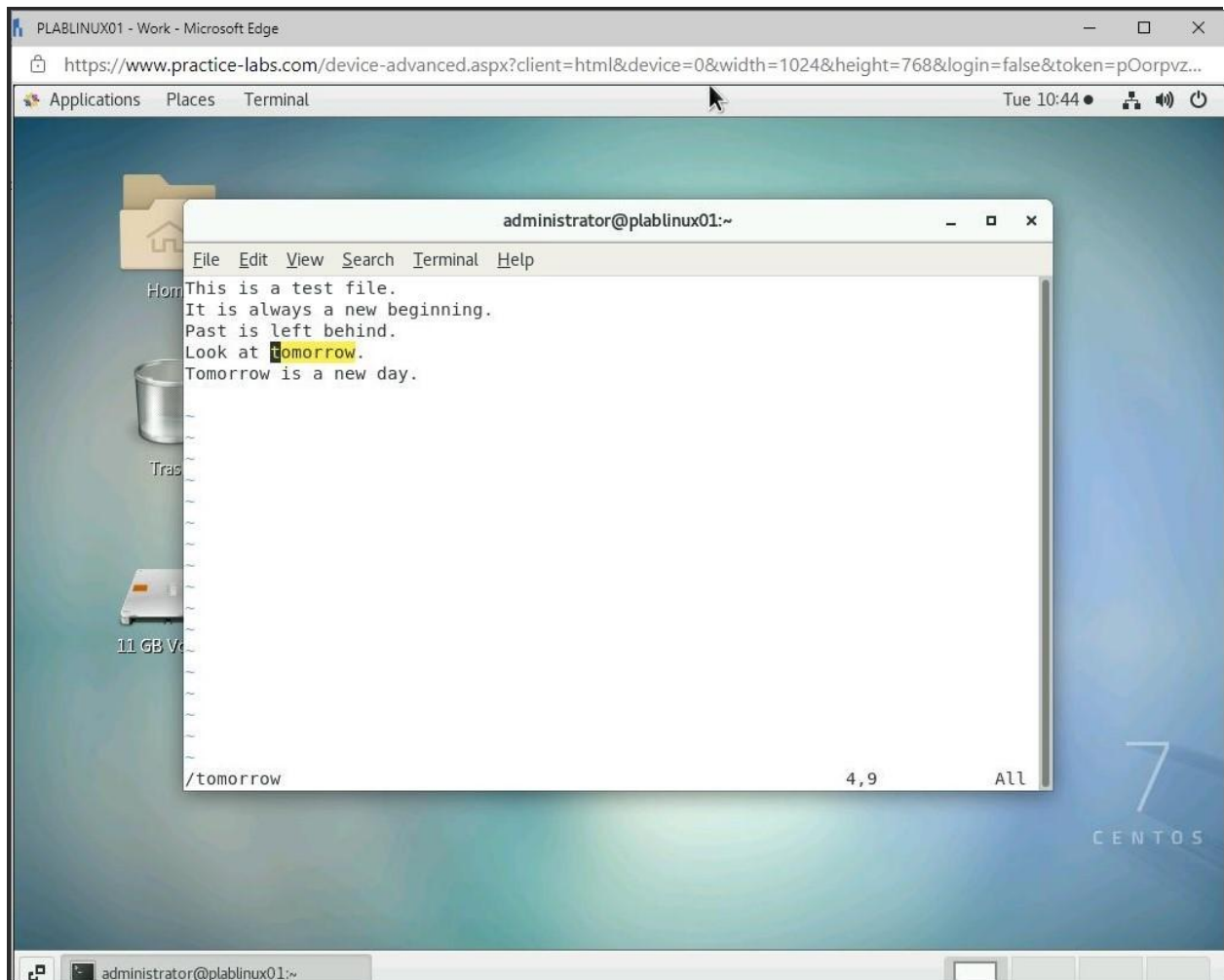
Figure 1.23 Screenshot of PLABLINUX01: Locating the searched word.

Step 18

Similarly, to search backward for a specific string of text, type:
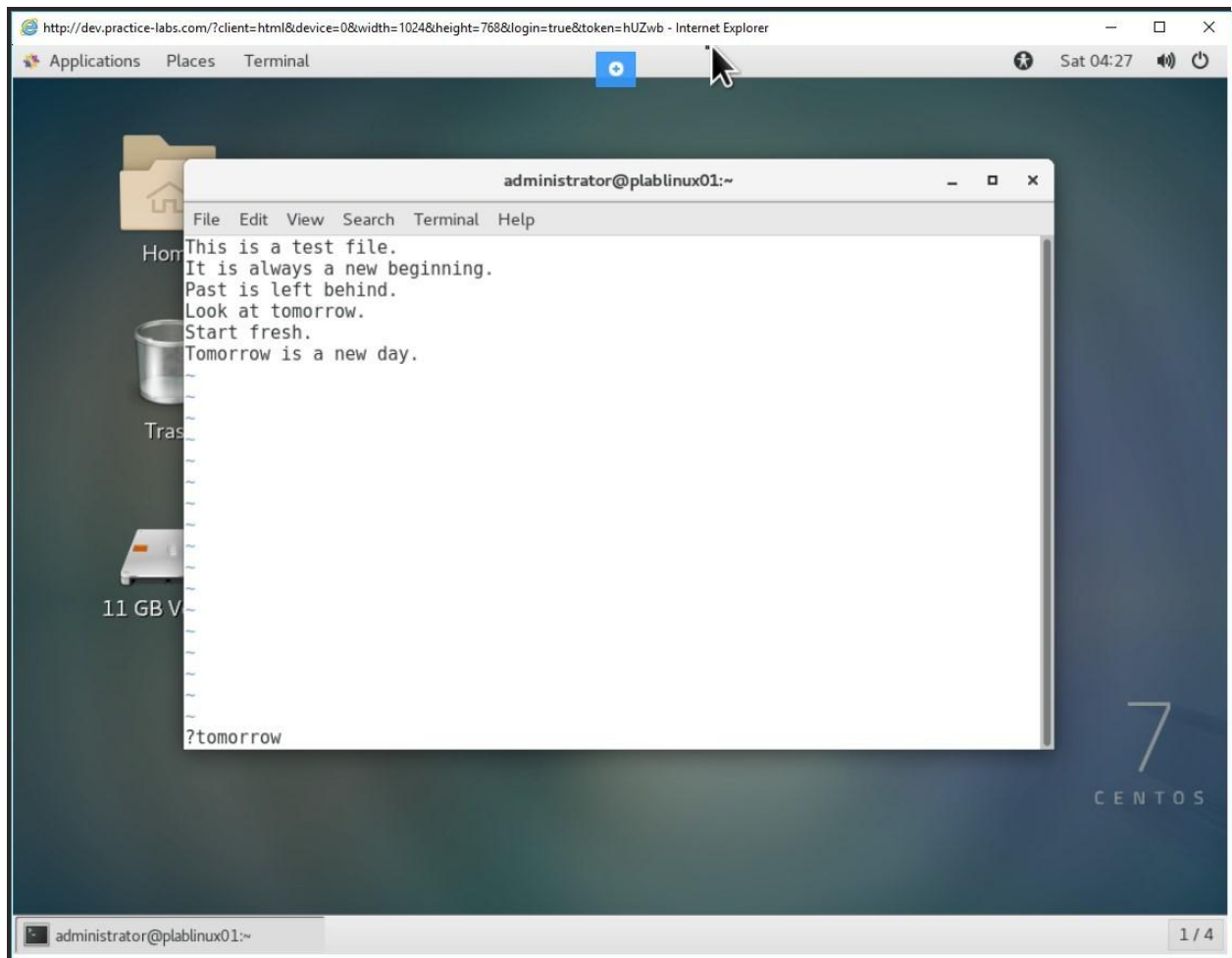
```
?tomorrow
```

Figure 1.24 Screenshot of PLABLINUX01: Searching backward for a specific string of text.

Step 19

Press Enter.

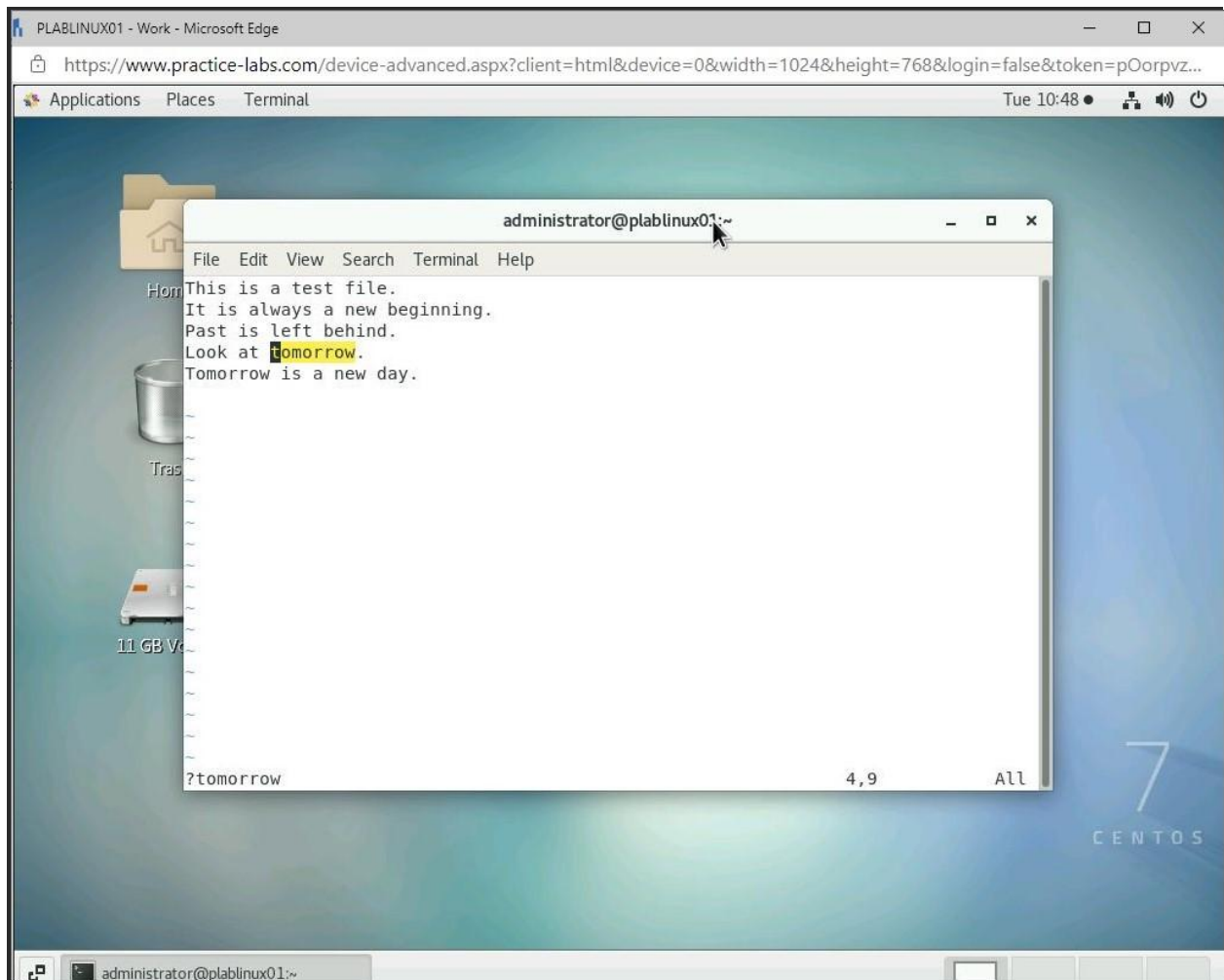Notice that the tomorrow text is highlighted.

Figure 1.25 Screenshot of PLABLINUX01: Highlighting the searched word.

Step 20

:noh shuts off the current highlighting. In command mode, type the following:

```
:noh
```

Press Enter.

Task 3 - Manage a File Using vi

The command mode and the insert mode of the vi editor are mutually exclusive. This means that only one mode is activated at a time. Therefore, the commands are entered only when the editor is not in the insert mode.

The commands are identified by the special characters, including /, ?, or :, and appear in the left bottom corner of the file. Remember, the commands in the vi editor are case-sensitive.

In this task, you will perform basic file functions including insert, edit, delete, copy, and finding text in a file.

To manage a file, perform the following steps:

Step 1

Navigate to the end of the Look at Tomorrow line using your arrow keys if necessary.
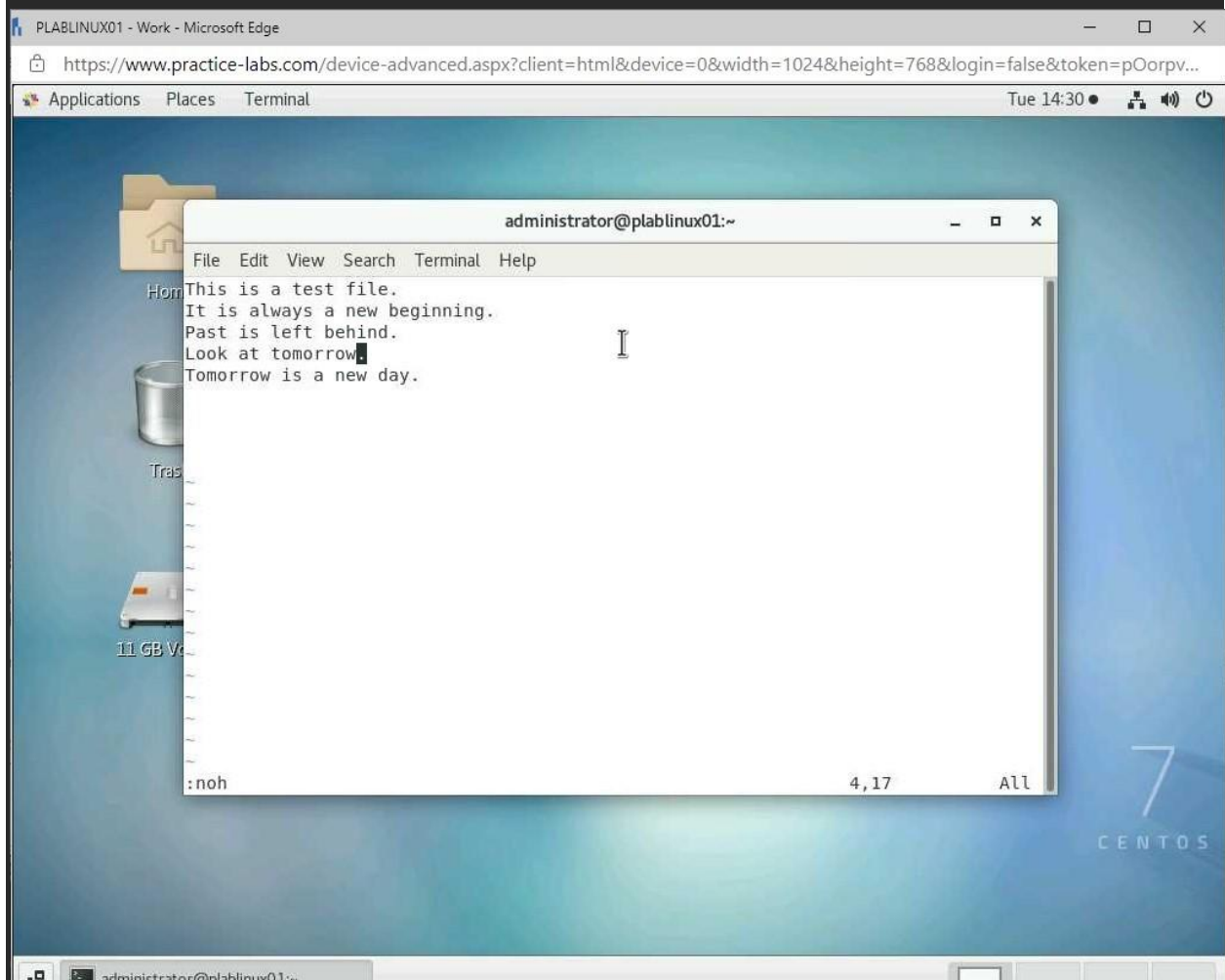

Figure 1.26 Screenshot of PLABLINUX01: Moving the cursor to the end of the line.

Step 2

To enter a new line of text below the current line, press o. The vi editor gets into insert mode. It will also create a blank line for you.

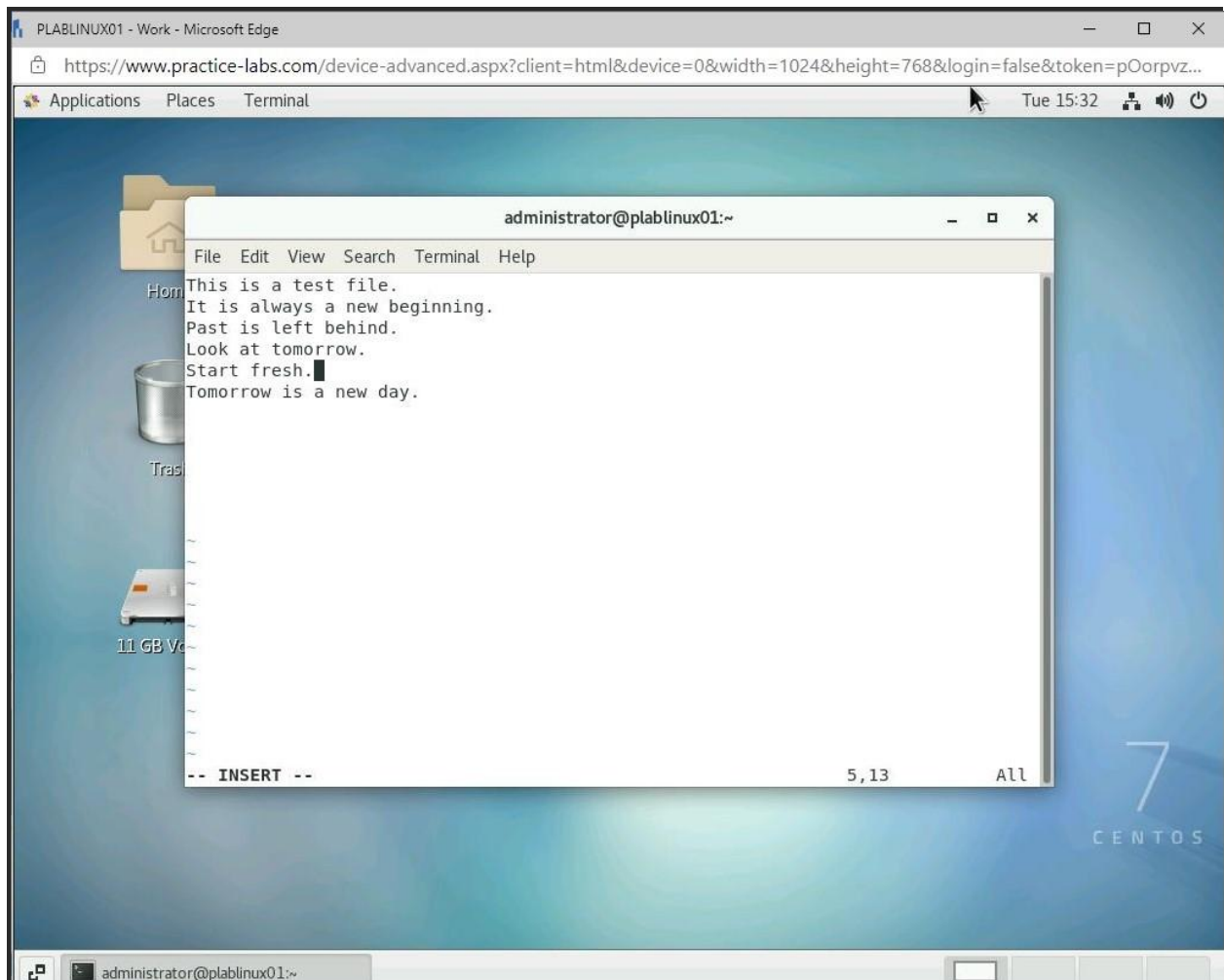In the blank line, type the following:

Start fresh.

Figure 1.27 Screenshot of PLABLINUX01: Entering a new line of text below the current line.

Step 3

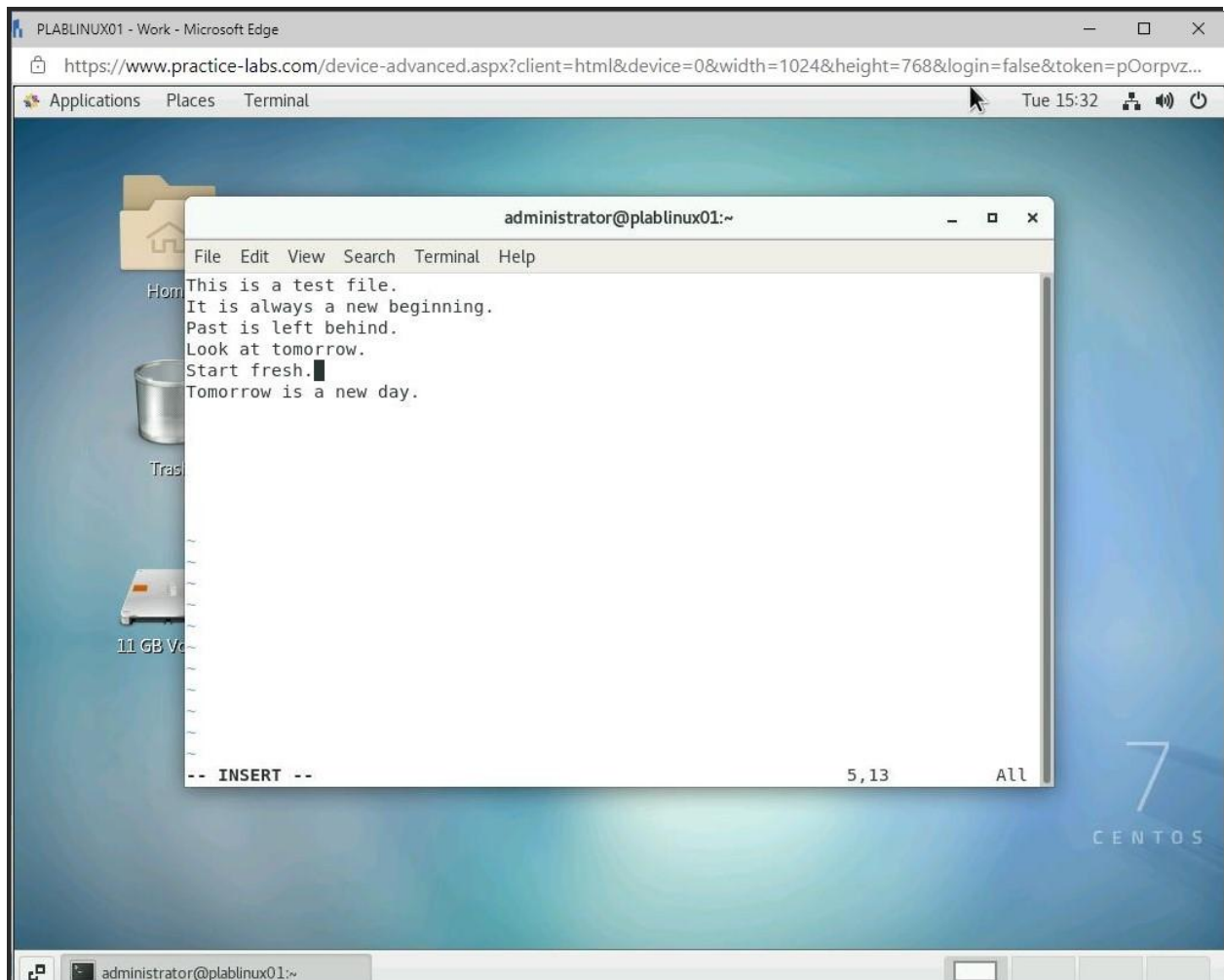Press ESC to exit insert mode and return to command mode

Figure 1.28 Screenshot of PLABLINUX01: Entering a new line of text below the current line.

Step 4

Move your cursor on any of the characters in the file and press x.

Notice that the character highlighted by the cursor is deleted.

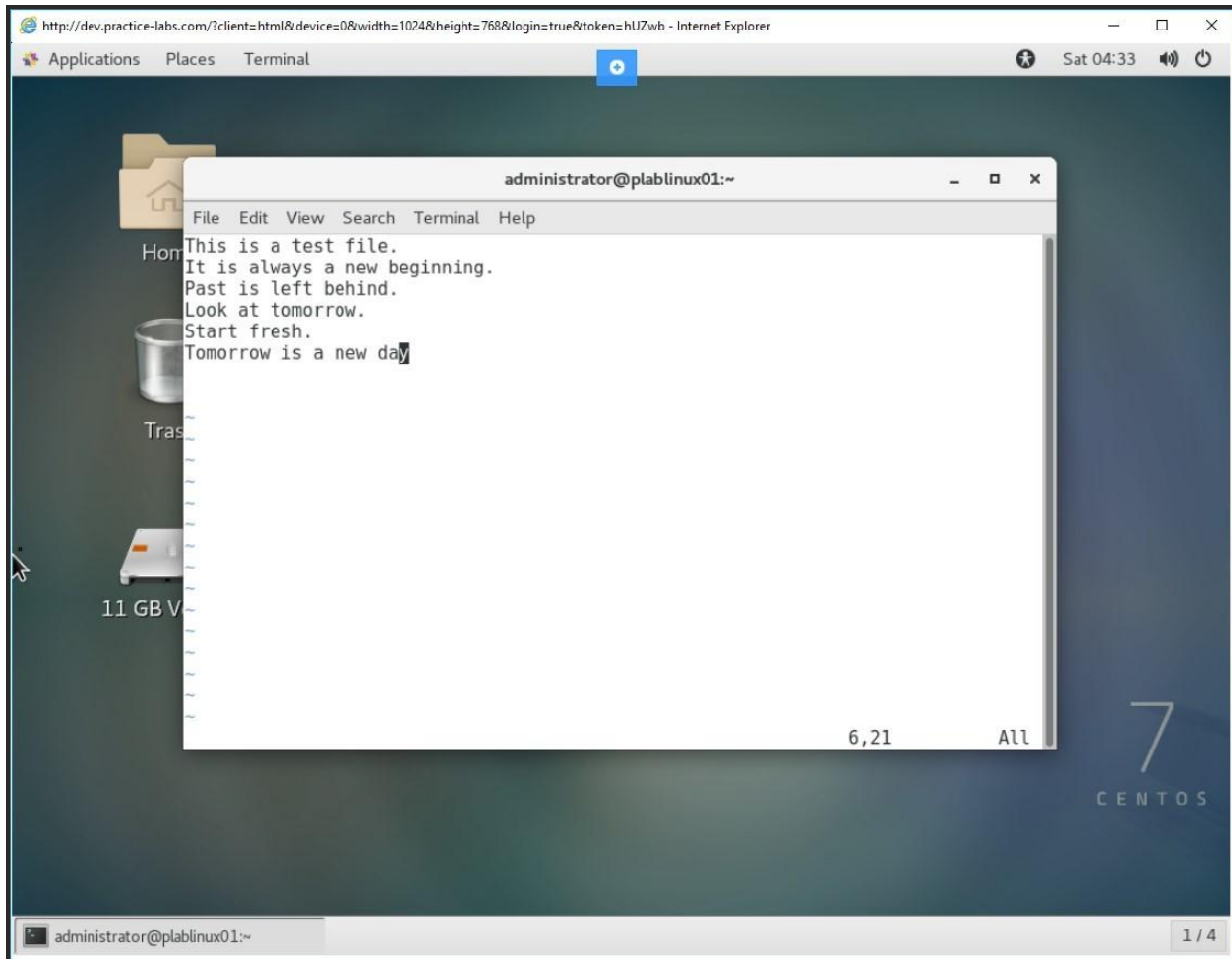Try highlighting and deleting the '.' (period) at the end of the word 'day' using x.

Figure 1.29 Screenshot of PLABLINUX01: Moving the cursor on any of the characters in the file.

Step 5

Move your cursor onto any of the characters in the middle of any line.

To append text after the last character at the end of the line, press A.

Notice that the file is back into the insert mode and the cursor is shifted to the end of the line.
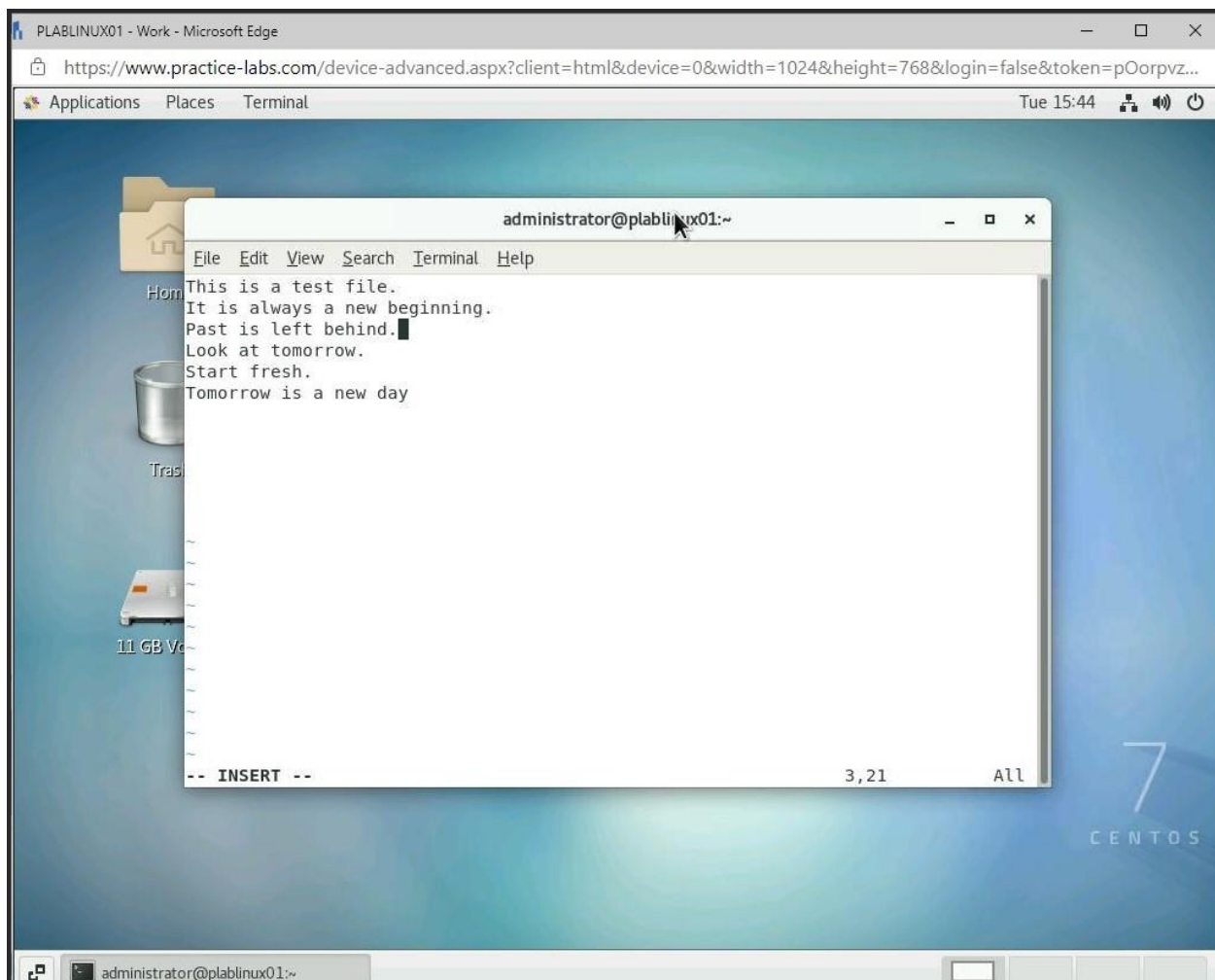
Note: Ensure caps lock is on before pressing A.

Figure 1.30 Screenshot of PLABLINUX01: Moving the cursor on any of the characters in the middle of any line.

Step 6

Press ESC to exit insert mode.
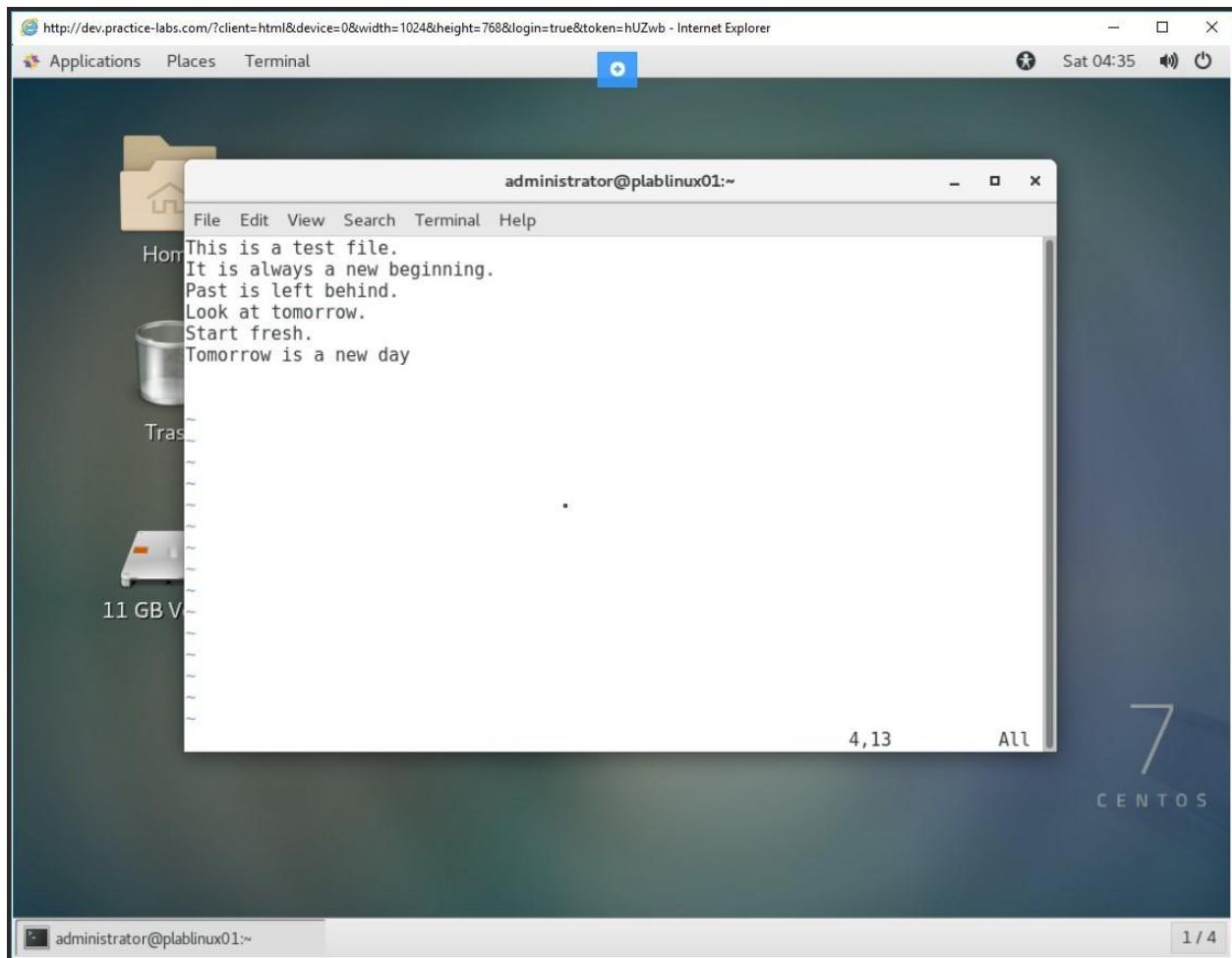
Place the cursor on any of the words.

Figure 1.31 Screenshot of PLABLINUX01: Placing the cursor on a word.

Step 7

To append after the current cursor position, press a.

Note that the cursor moves to the next letter and insert mode is activated.
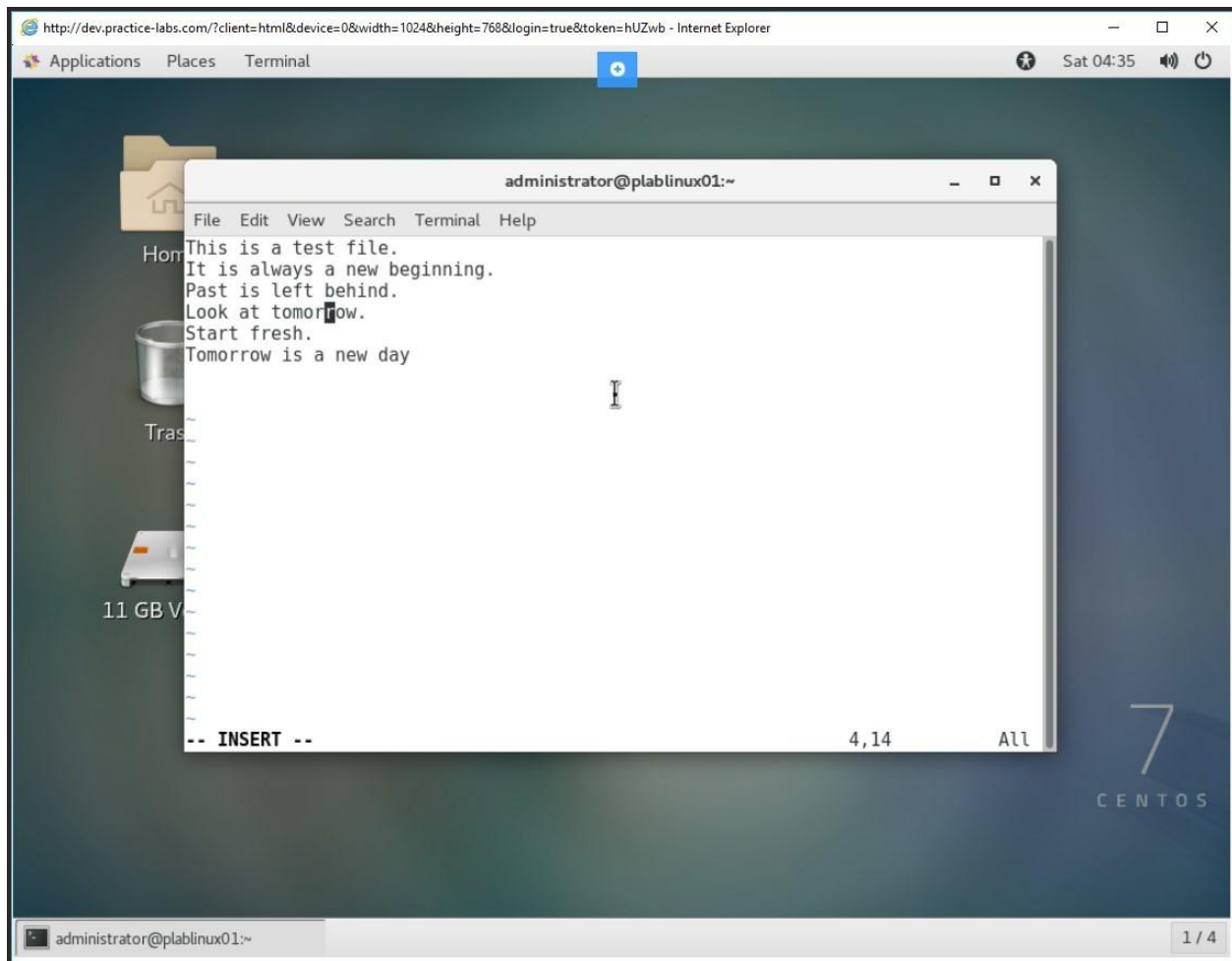
Press ESC to exit insert mode.

Figure 1.32 Screenshot of PLABLINUX01: Appending after the current cursor position.

Step 8

Ensure you are in command mode.

To delete the current highlighted letter, press x.

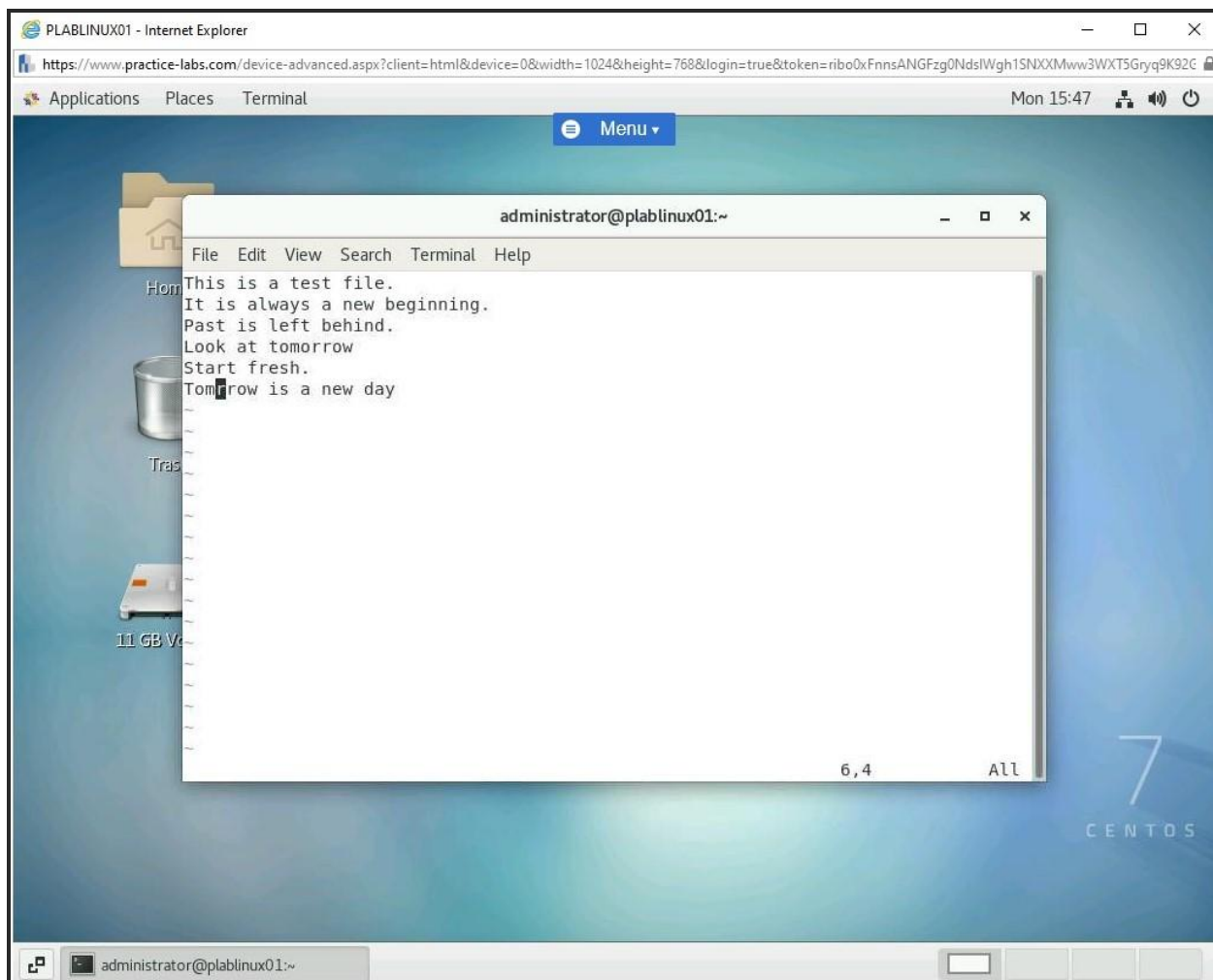Notice below, that the letter 'o' after 'm' in 'tomorrow' is now deleted.

Figure 1.33 Screenshot of PLABLINUX01: Deleting the current letter.

Step 9

To delete the current line, go into the insert mode using i.

Move the cursor over any part of the sentence "Look at tomorrow", then enter a capital S.

The complete line is now deleted.
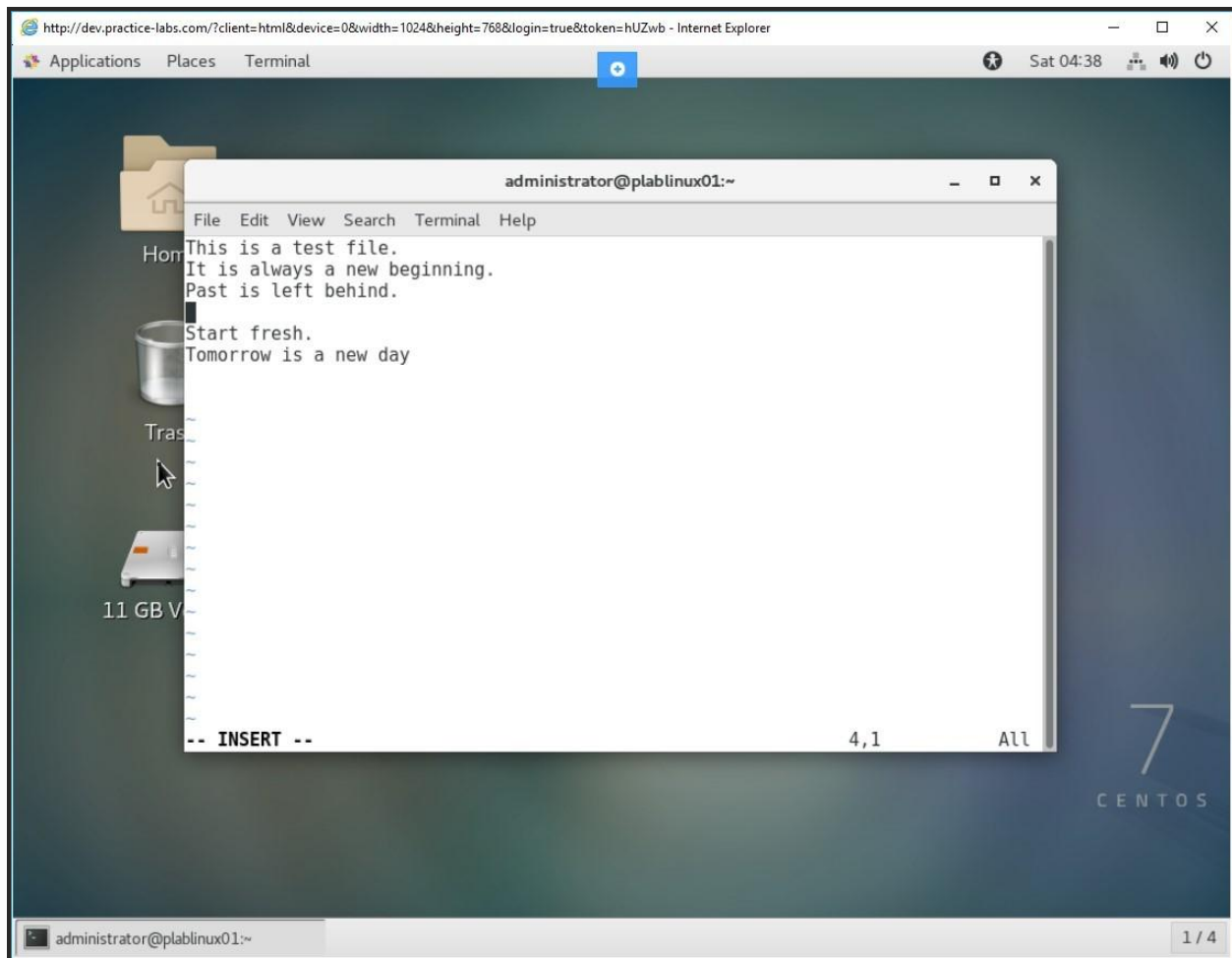
Press ESC to get out of the insert mode.

Figure 1.34 Screenshot of PLABLINUX01: Deleting the current line.

Step 10

In command mode, enter :q! to exit the file without saving.
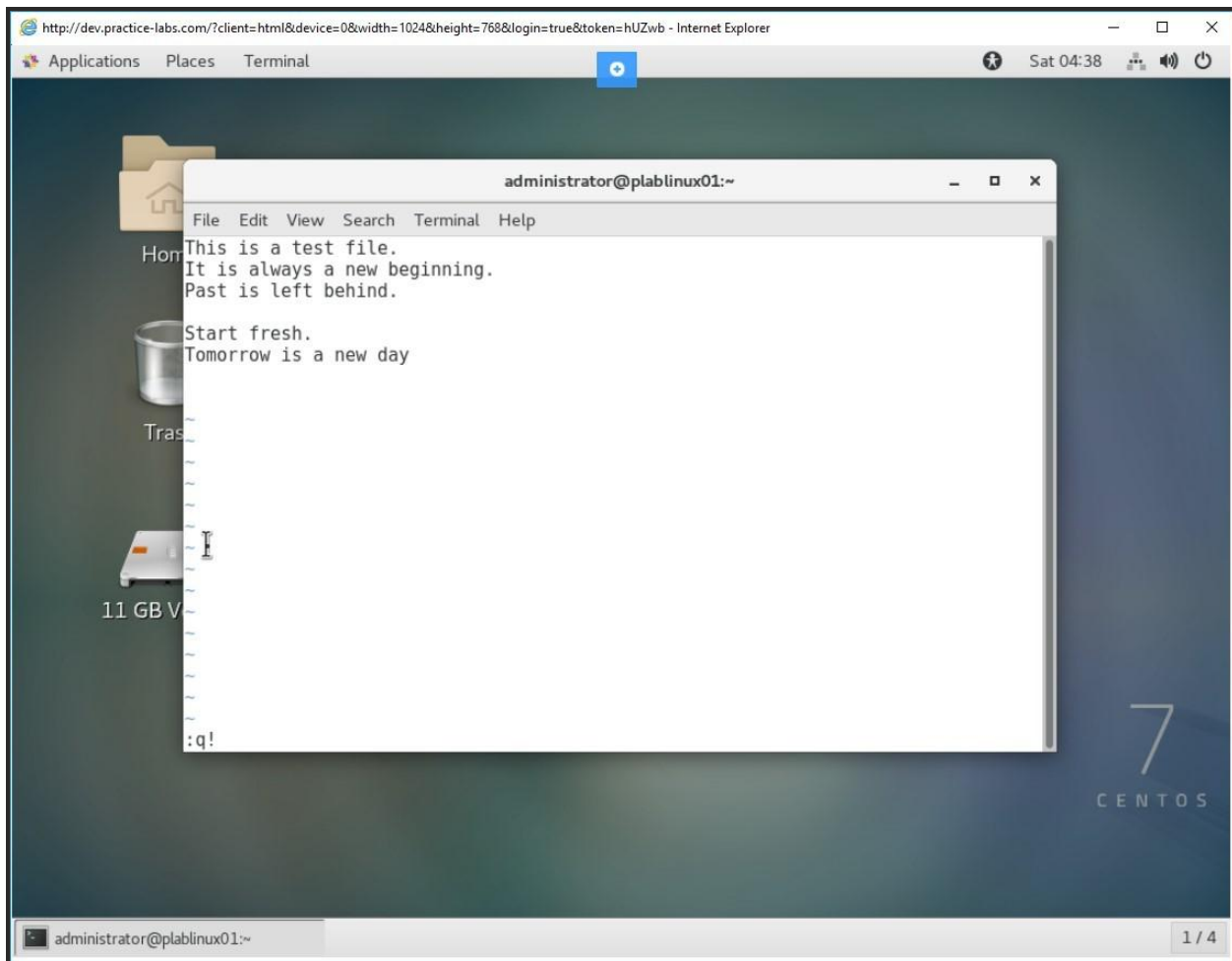
Press Enter.

Figure 1.35 Screenshot of PLABLINUX01: Closing the file without saving.

Step 11

The file is now closed without saving changes and you are navigated to the command prompt.

Open the file, test.txt, once again using the following command:

```
vi test.txt
```

Press Enter.

If prompted, press R and Enter.

Note that the changes have not been retained as you quit without saving the file in the previous task.
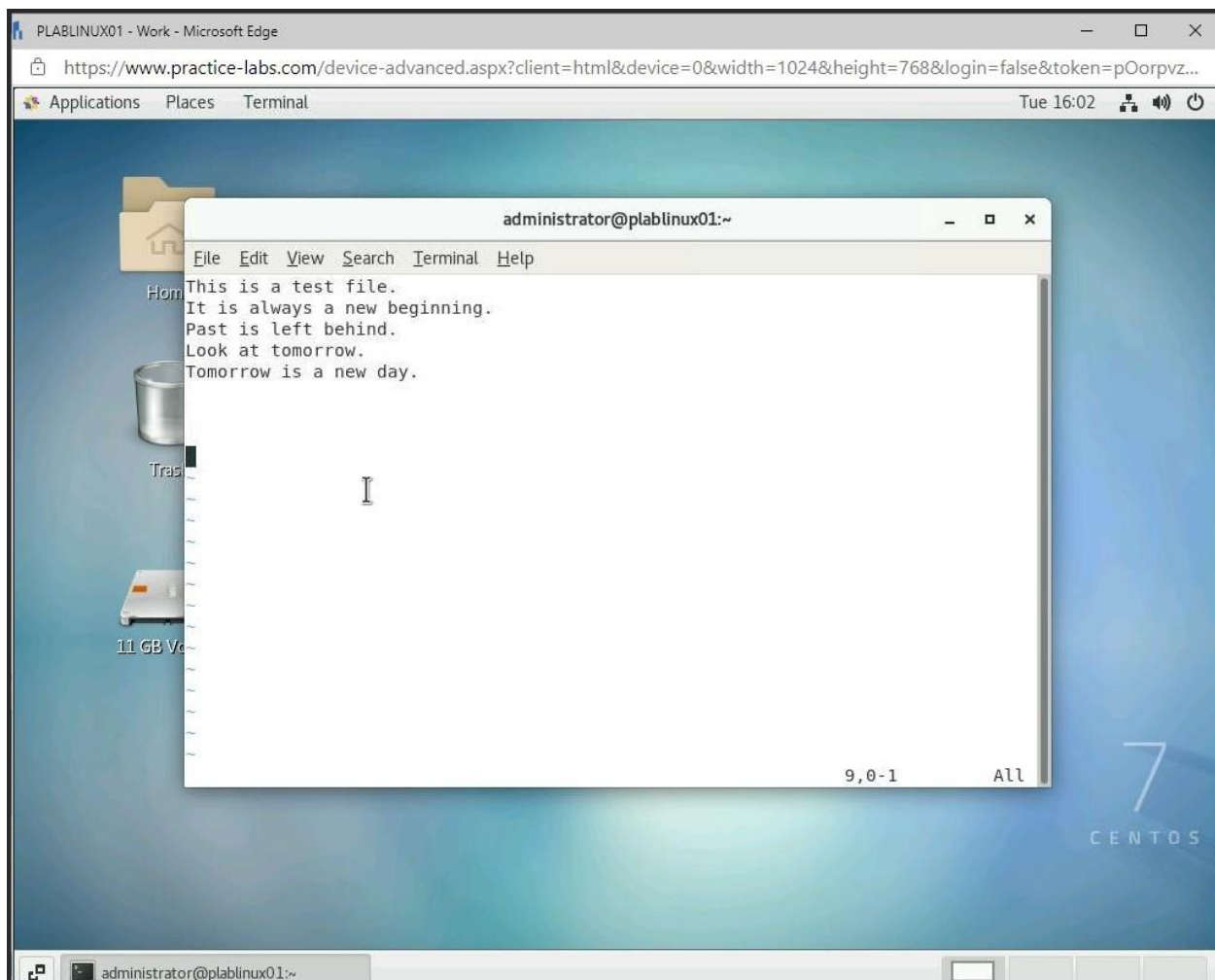
Figure 1.36 Screenshot of PLABLINUX01: Opening the test.txt file again.

Step 12

Delete the first word "This" within the first sentence.

To do this, enter dw.

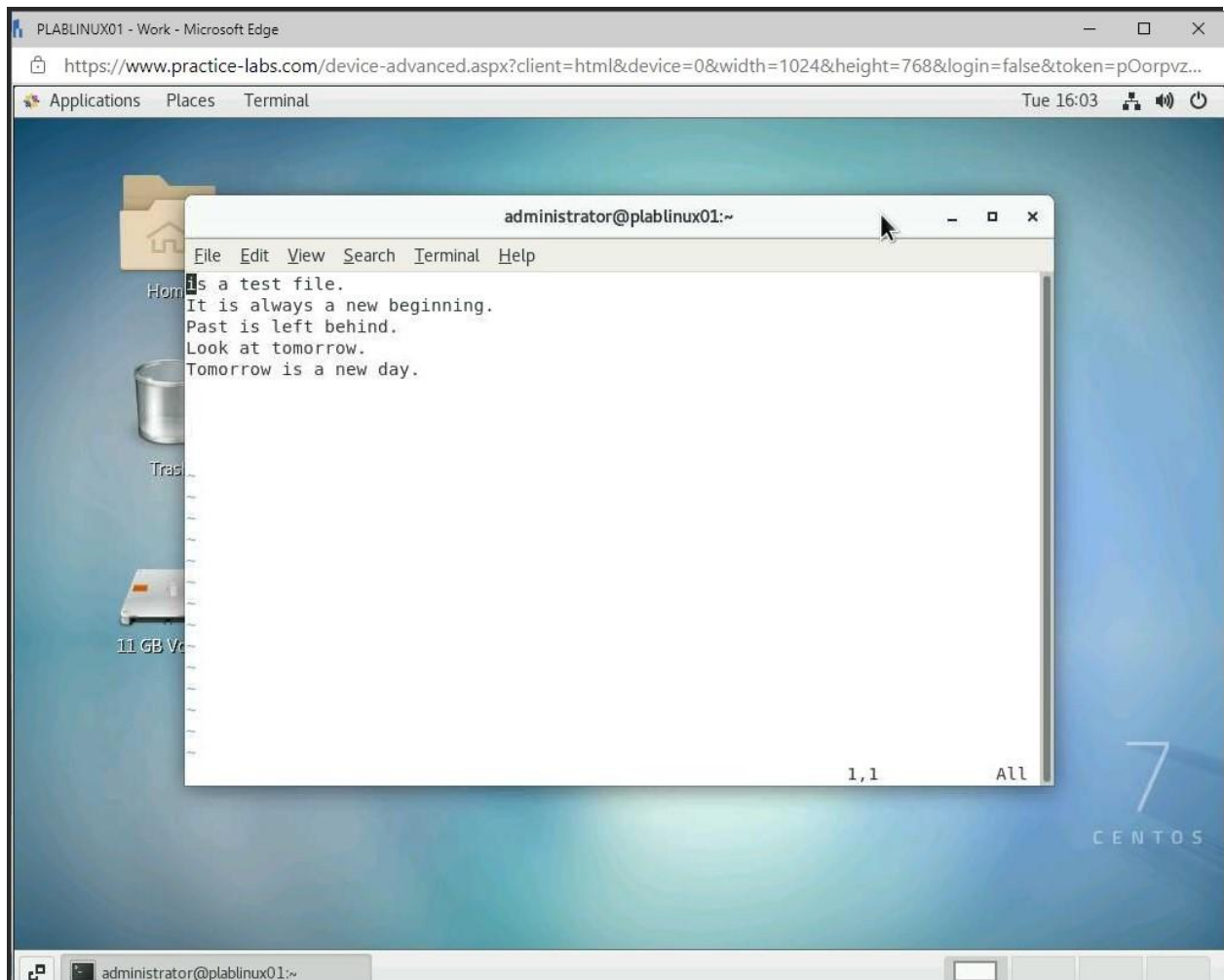Note that the first word of the first sentence is now deleted.

Figure 1.37 Screenshot of PLABLINUX01: Deleting the word on which the cursor is placed.

Step 13

To delete text from here to the end of the current line, enter d$.
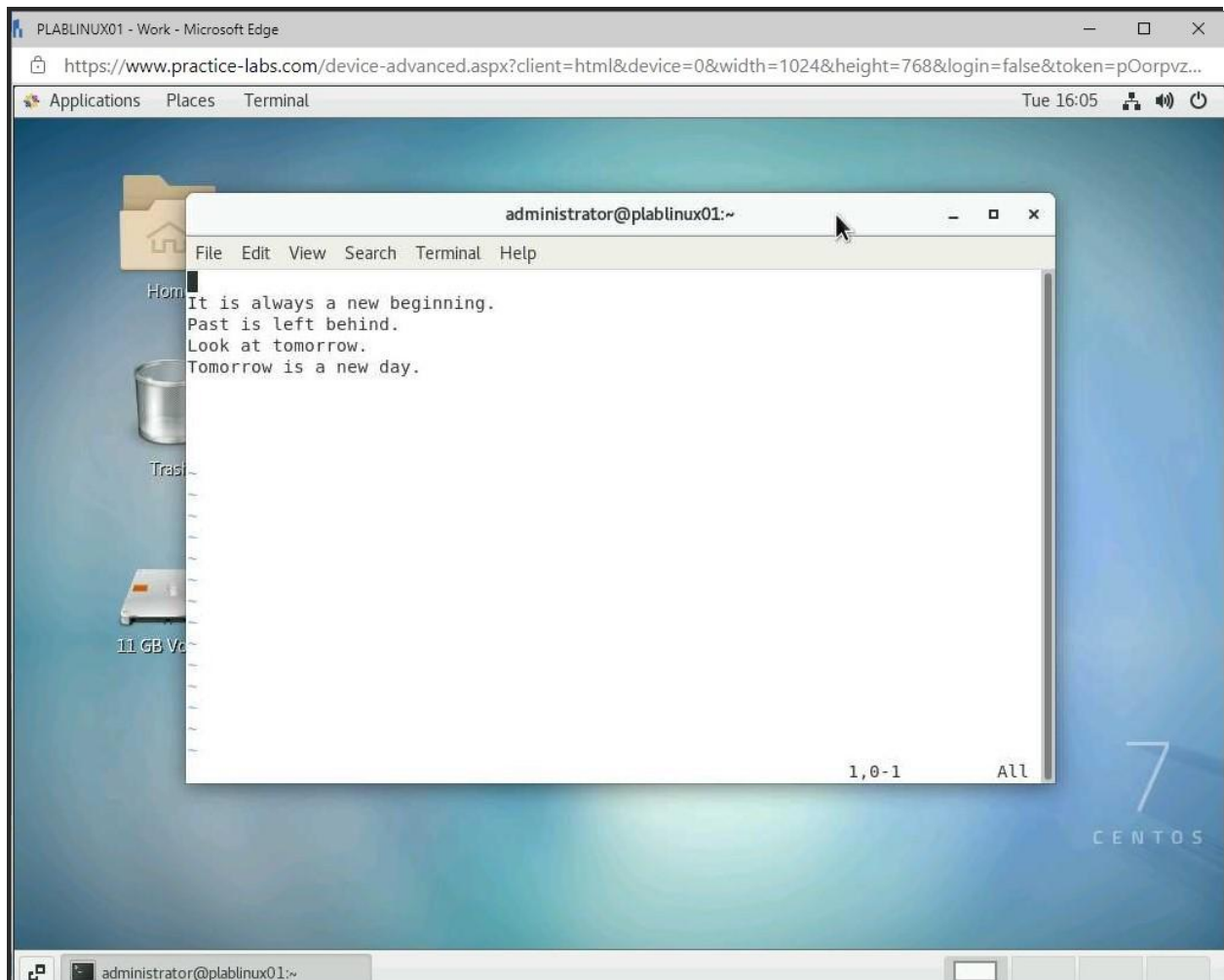
Figure 1.38 Screenshot of PLABLINUX01: Deleting text from the current cursor position to the end of the line.

Step 14

Enter the following command to close the file without saving :q!
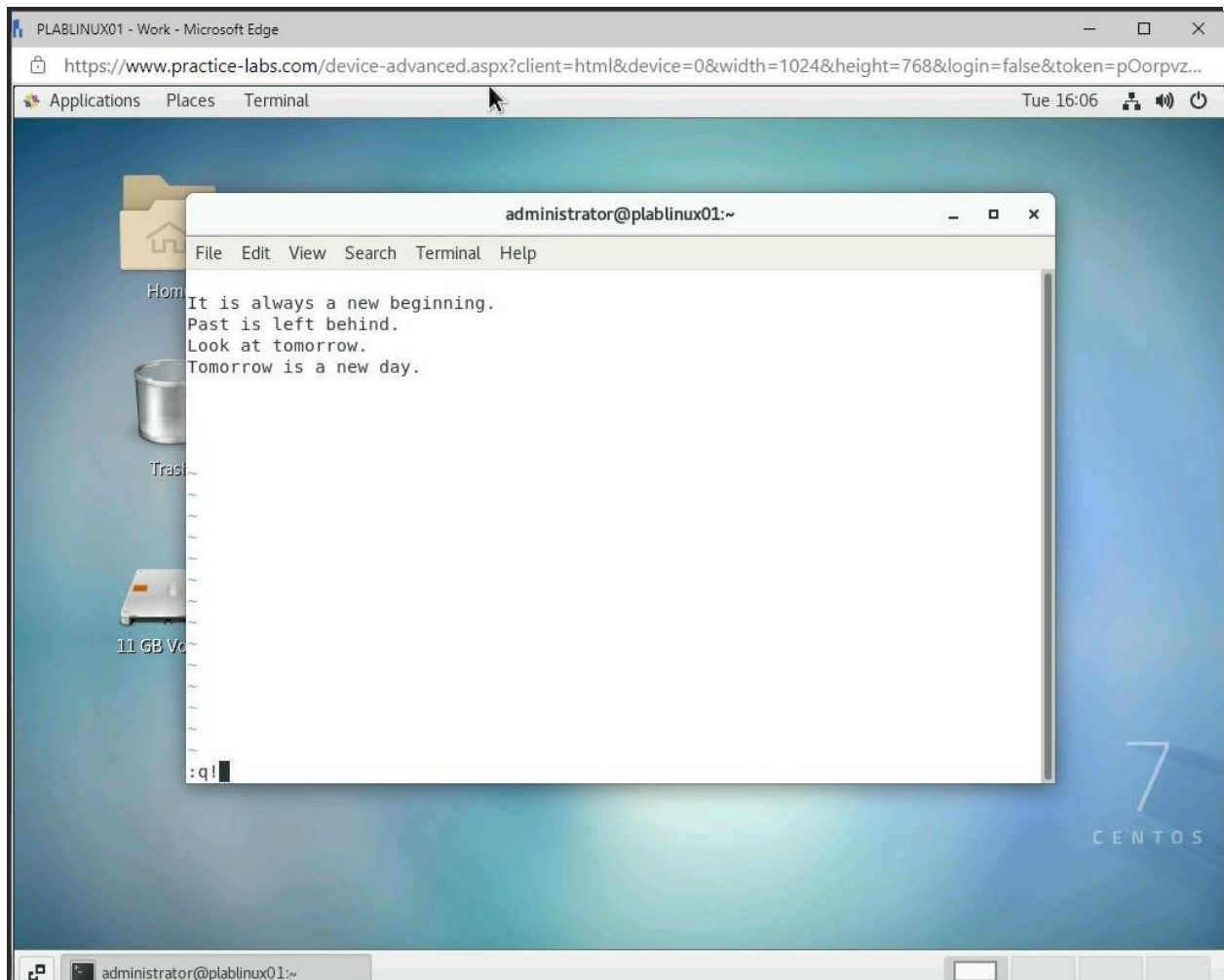
Press Enter.

Figure 1.39 Screenshot of PLABLINUX01: Closing the file without saving.

Step 15

You are back on the command prompt.

Open the file using the following command:
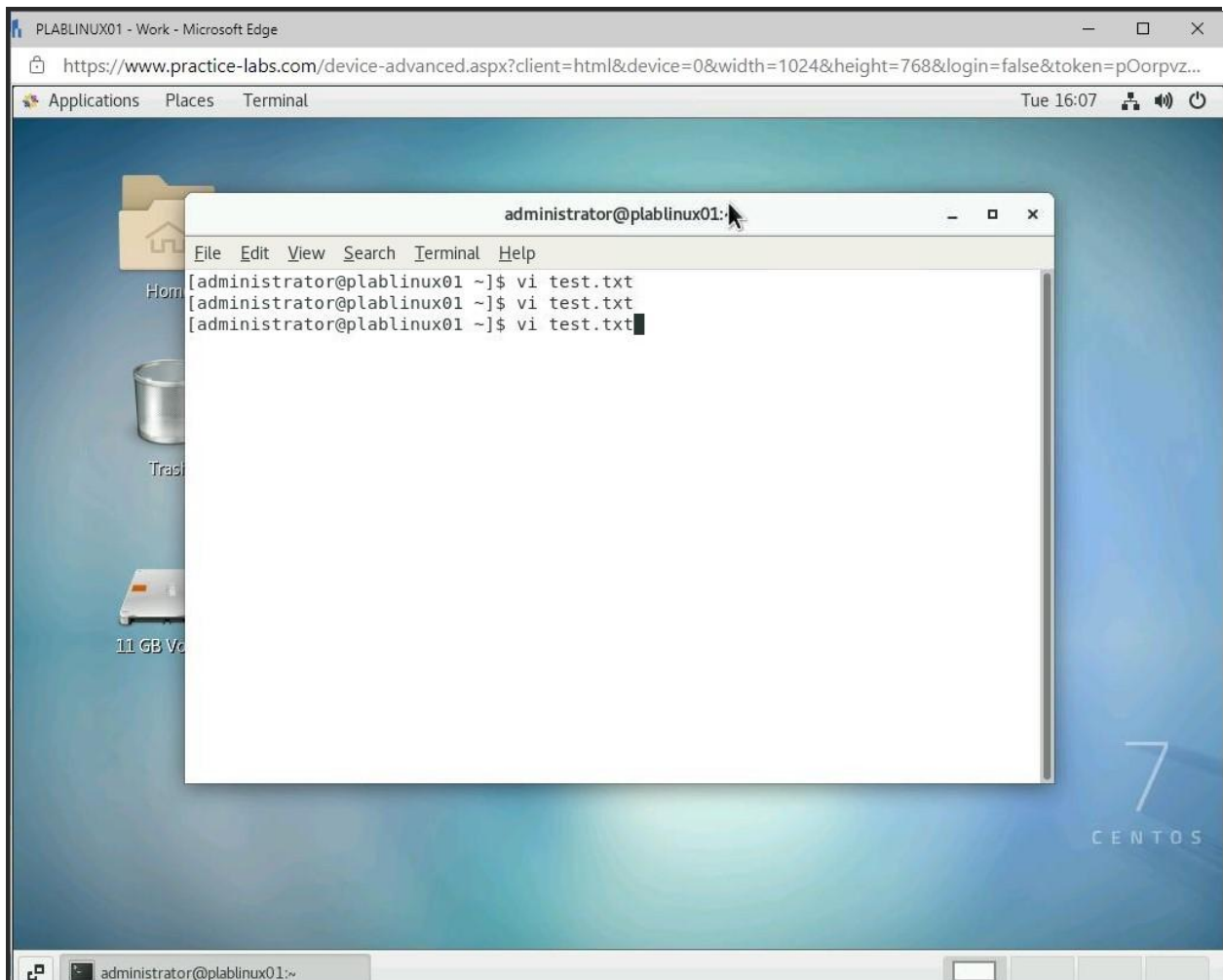
```
vi test.txt
```

Figure 1.40 Screenshot of PLABLINUX01: Opening the file again.

Step 16

Press Enter. If prompted, press R, then press Enter again.

The command d} is useful when there are multiple lines of text to delete from a certain point.

To delete text from the point of your cursor to the end of the current line use the d$ command.

To delete text from the point of your cursor to the end of the current paragraph use the d} command.

Ensure your cursor is on the very first letter of your paragraph.

Try one of these commands by typing d then SHIFT +}.

Note: Notice all text, which is considered a paragraph, is deleted. If however, you had moved your cursor down a line and entered d}, only the text from your cursor downwards would be deleted and the top line would remain.
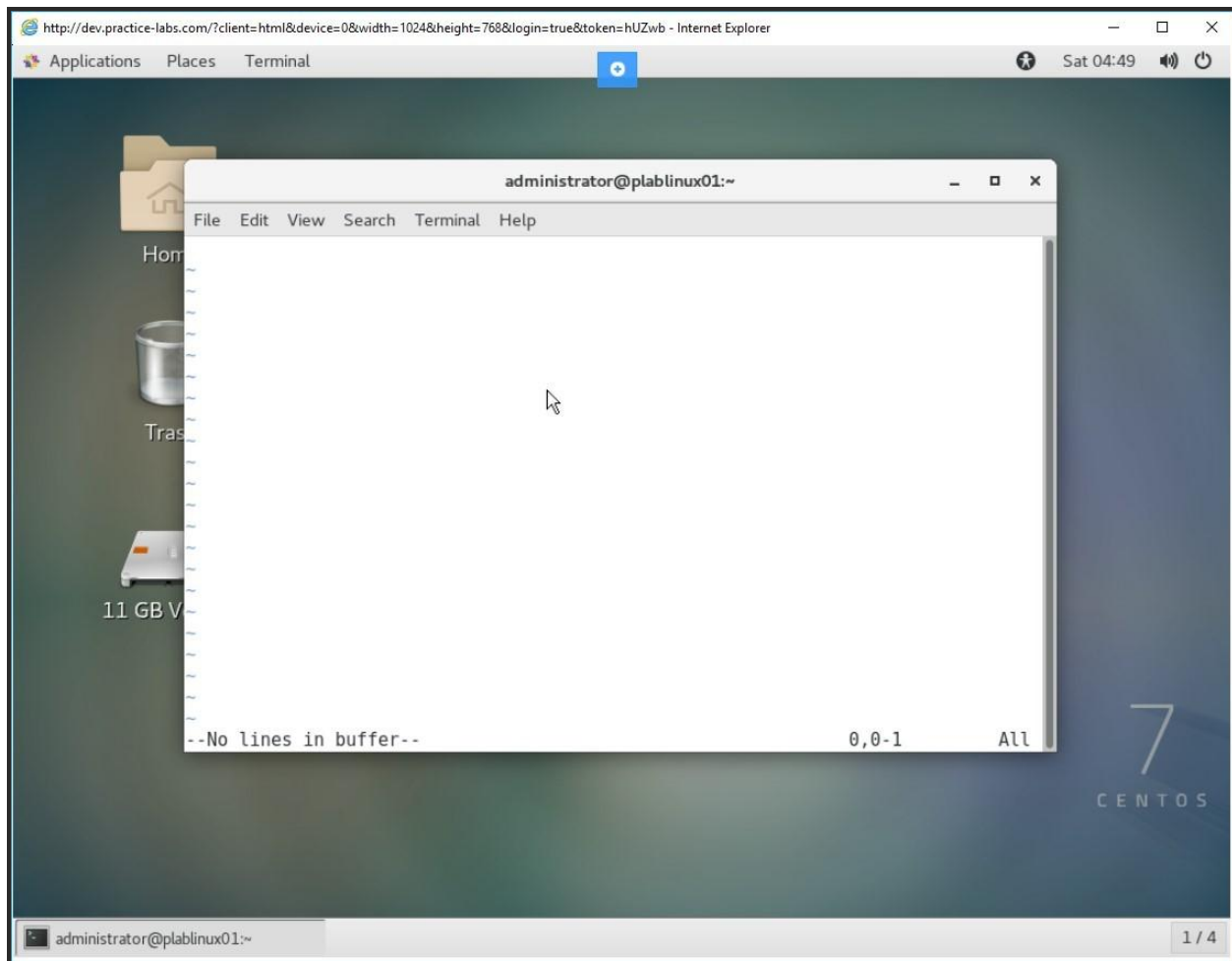
Figure 1.41 Screenshot of PLABLINUX01: Deleting text from the current cursor position to the end of the current paragraph.

Step 17

Close the file without saving and then open the file once again.

To copy the text from here to the end of the current line, enter yy

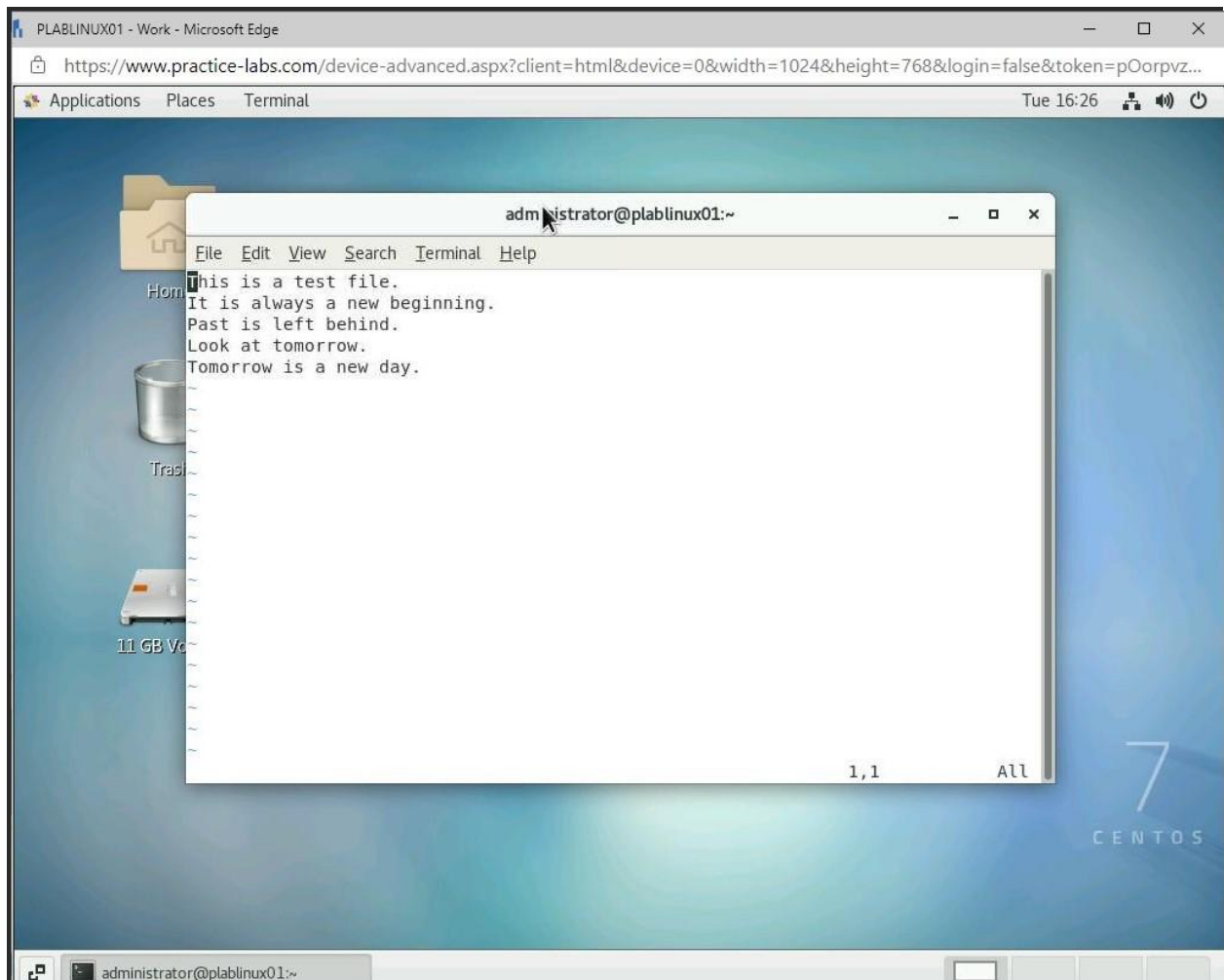*Note: You will not see any changes on the vi editor.*

Figure 1.42 Screenshot of PLABLINUX01: Copying the line from the current cursor position to the end of the line.

Step 18

To paste the line, press p.

Use the p command a few times to paste the line multiple times.

To copy a specific number of lines, enter the number of lines to copy, along with lowercase yy.

Ensure your cursor is on the first character of the first line and then enter 1yy. 1yy is similar to yy.

Note: To copy two lines, you can press 2yy, and so on. Typing 2yy will copy the first and second line. pressing p will then paste both lines where the cursor is.
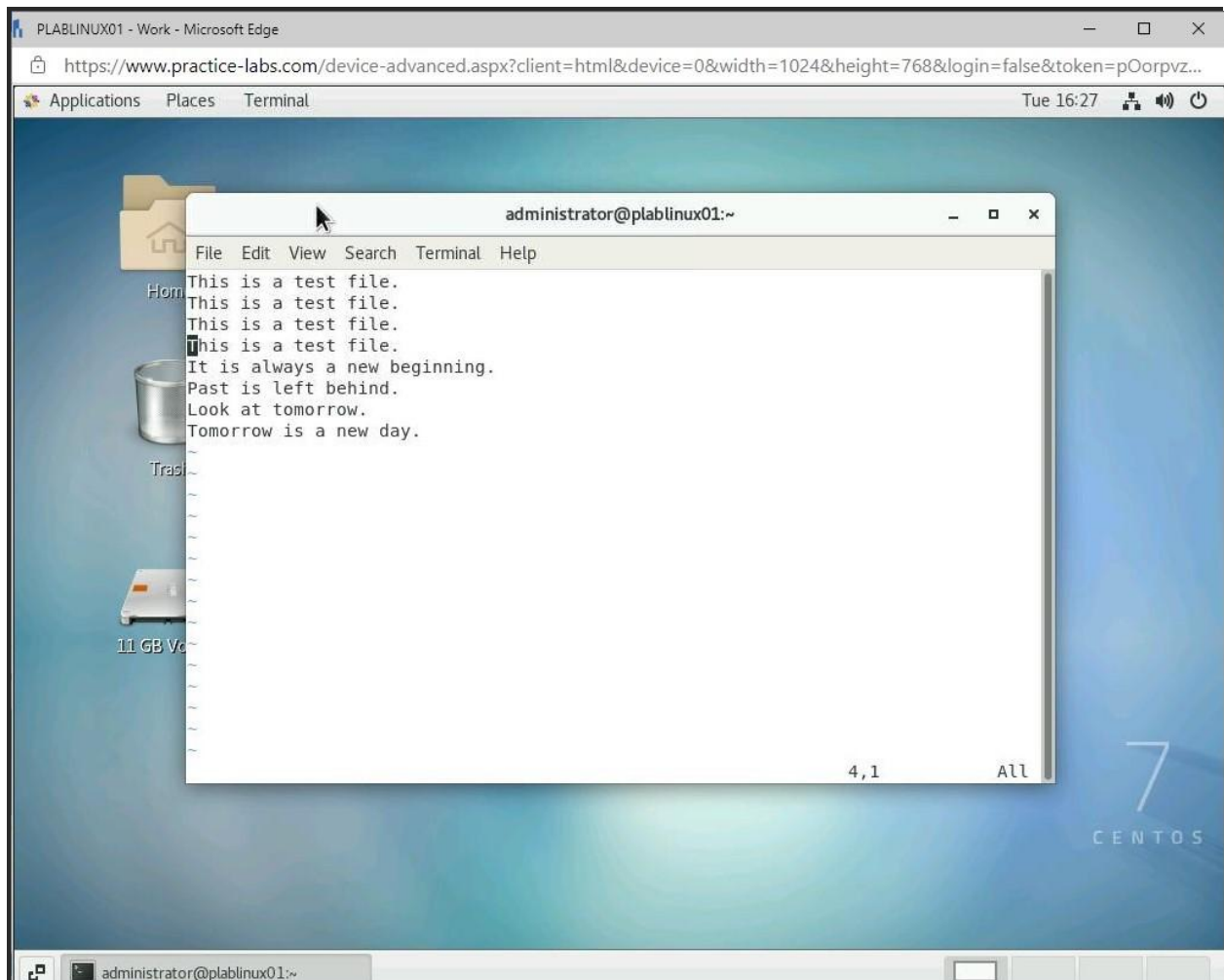
Figure 1.43 Screenshot of PLABLINUX01: Pasting the copied line multiple times.

Step 19

Move to the fourth This is a test file line of the document. To delete and leave the line blank, press capital D.

You can also press dd to delete the entire line you are on. This will also remove the blank line for you.

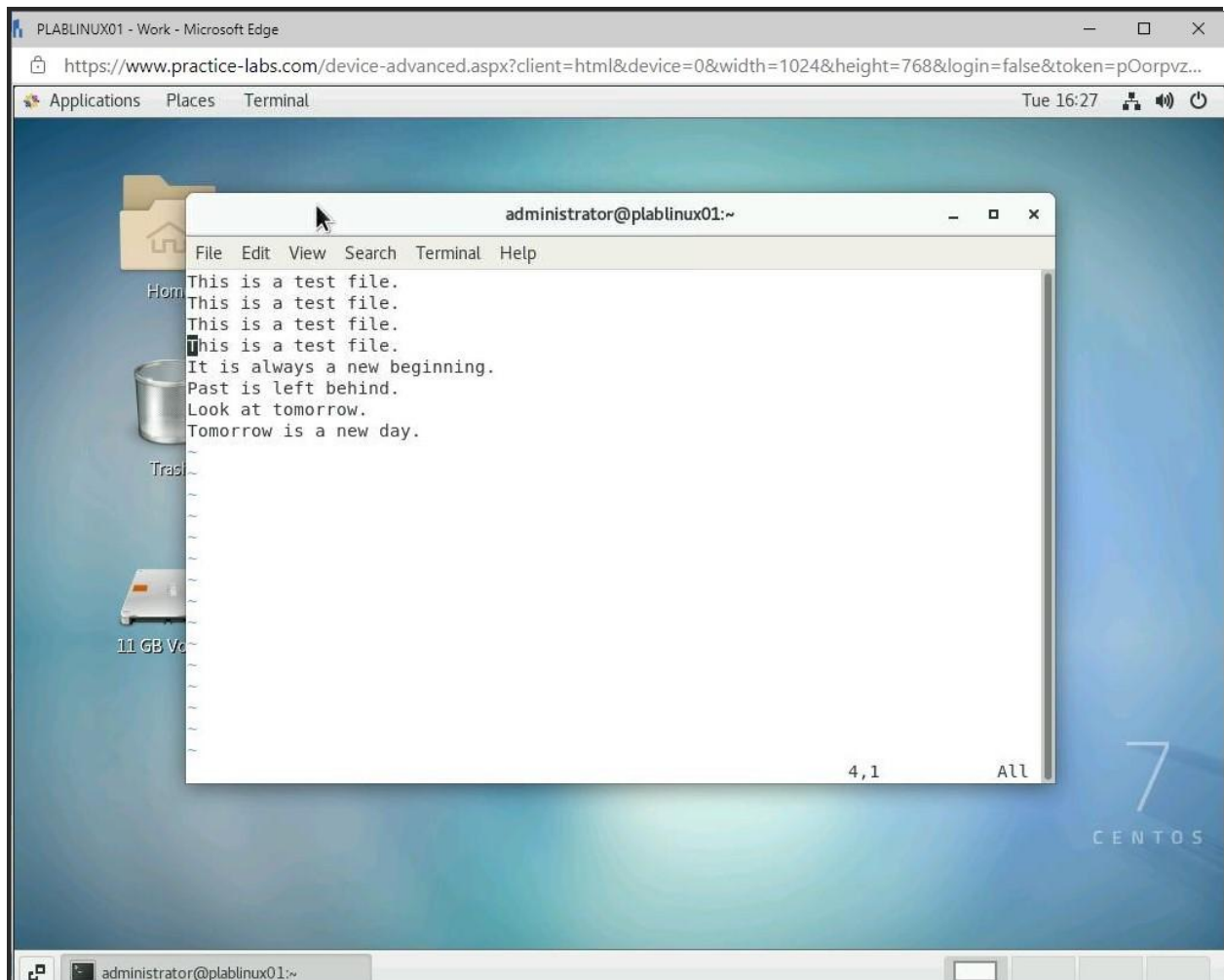*Note: You can also use D$ to delete all or part of a line from where your cursor is.*

Figure 1.44 Screenshot of PLABLINUX01: Deleting the line from the current cursor position.

Step 20

Now, paste the line by pressing p.

Note: There is a difference between p and P. When you use capital P, it will paste the line before the current cursor position. When you use lowercase p, it will paste the line after the current cursor position.
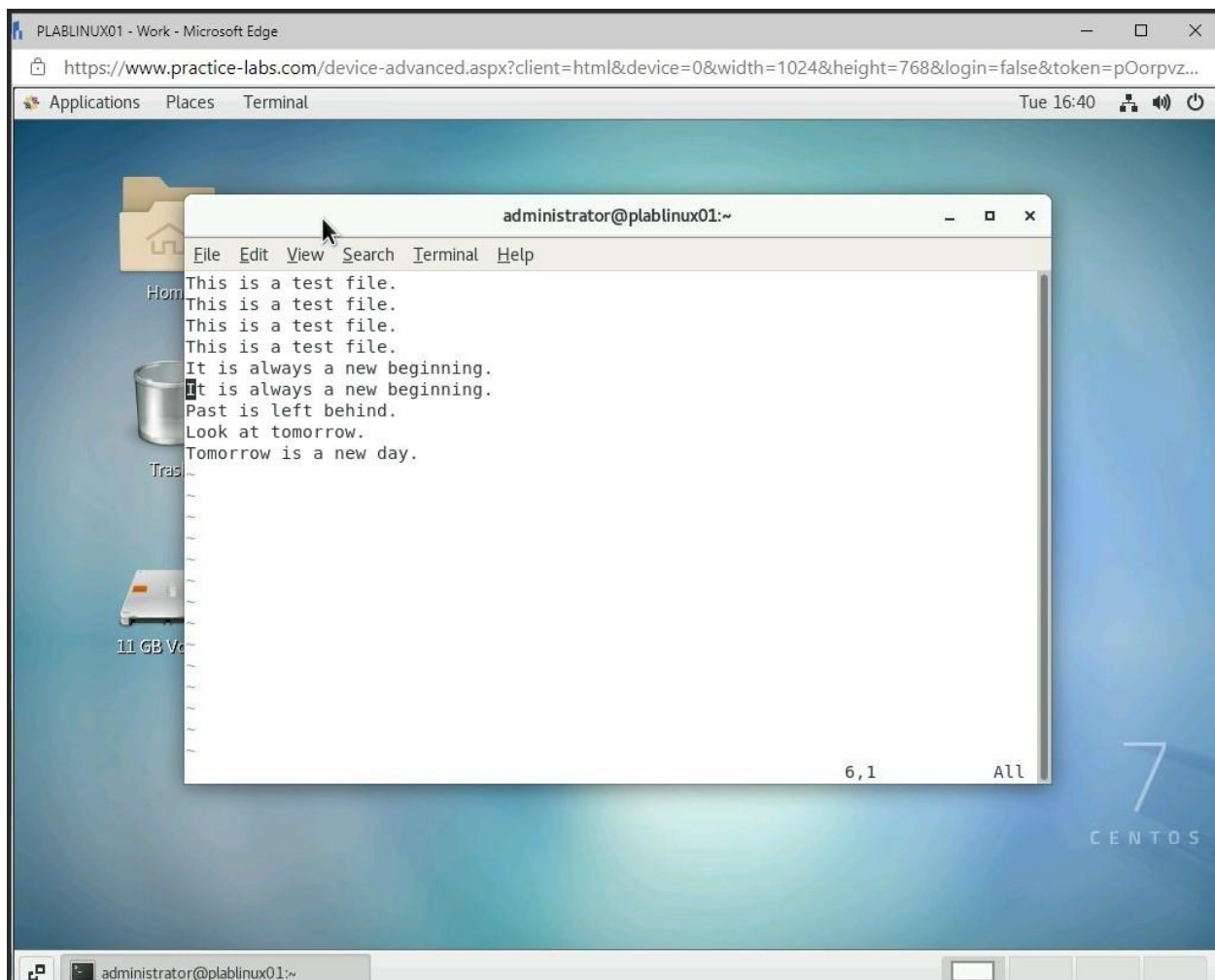
Figure 1.45 Screenshot of PLABLINUX01: Pasting the deleted line.

Step 21

Press ZZ to save the file and exit.

The file is now closed.

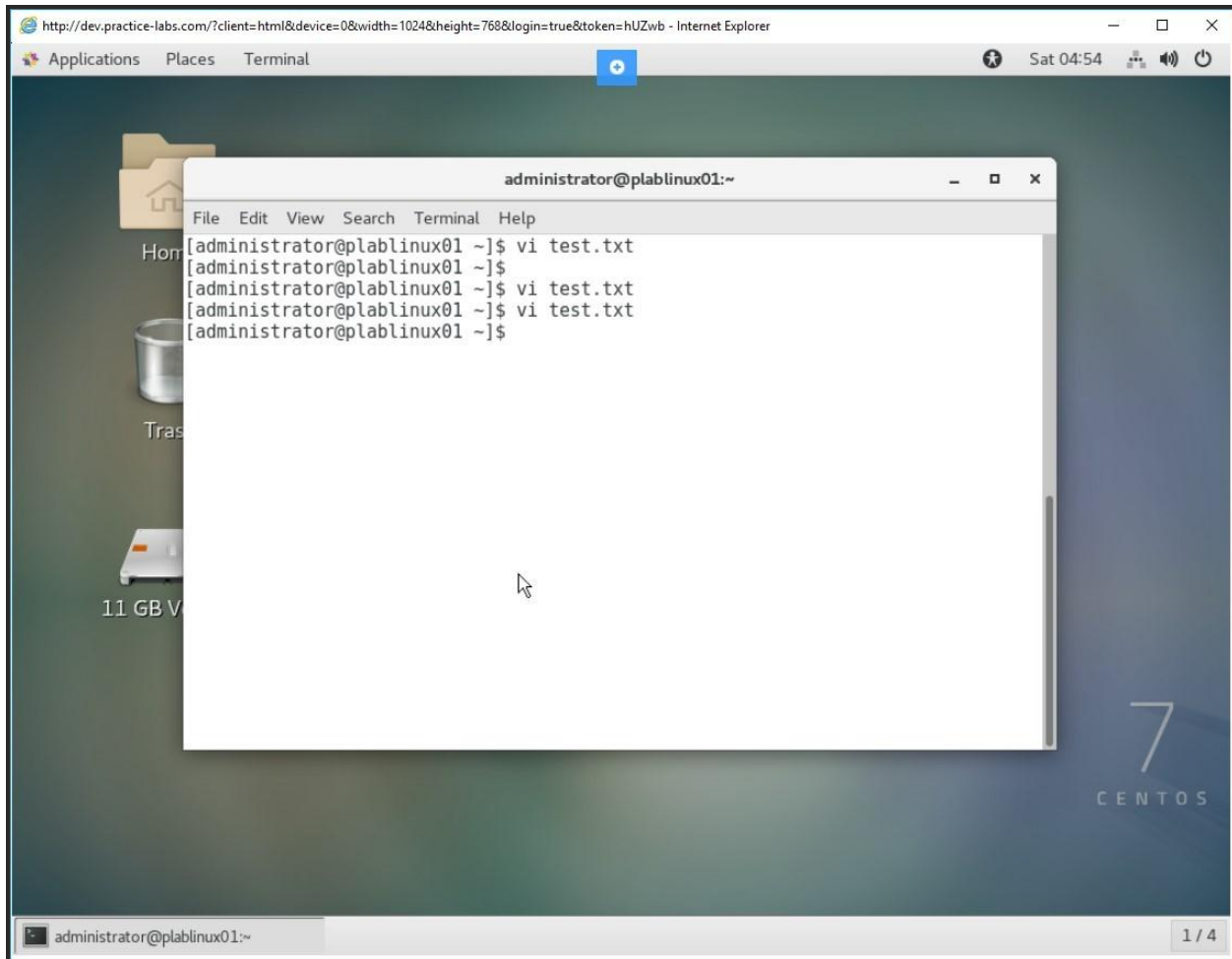You can open the file again to see that all the contents of the file are intact.

Figure 1.46 Screenshot of PLABLINUX01: Saving and exiting the file.

Step 22

The vi editor enables you to create or load another file from within an existing file. Using the command :e! forces the vi editor to exit the current file and open a new one.

For example, to open a new file by the name of Newfile.txt from within the test.txt file, type the following command:

```
:e! Newtest.txt
```
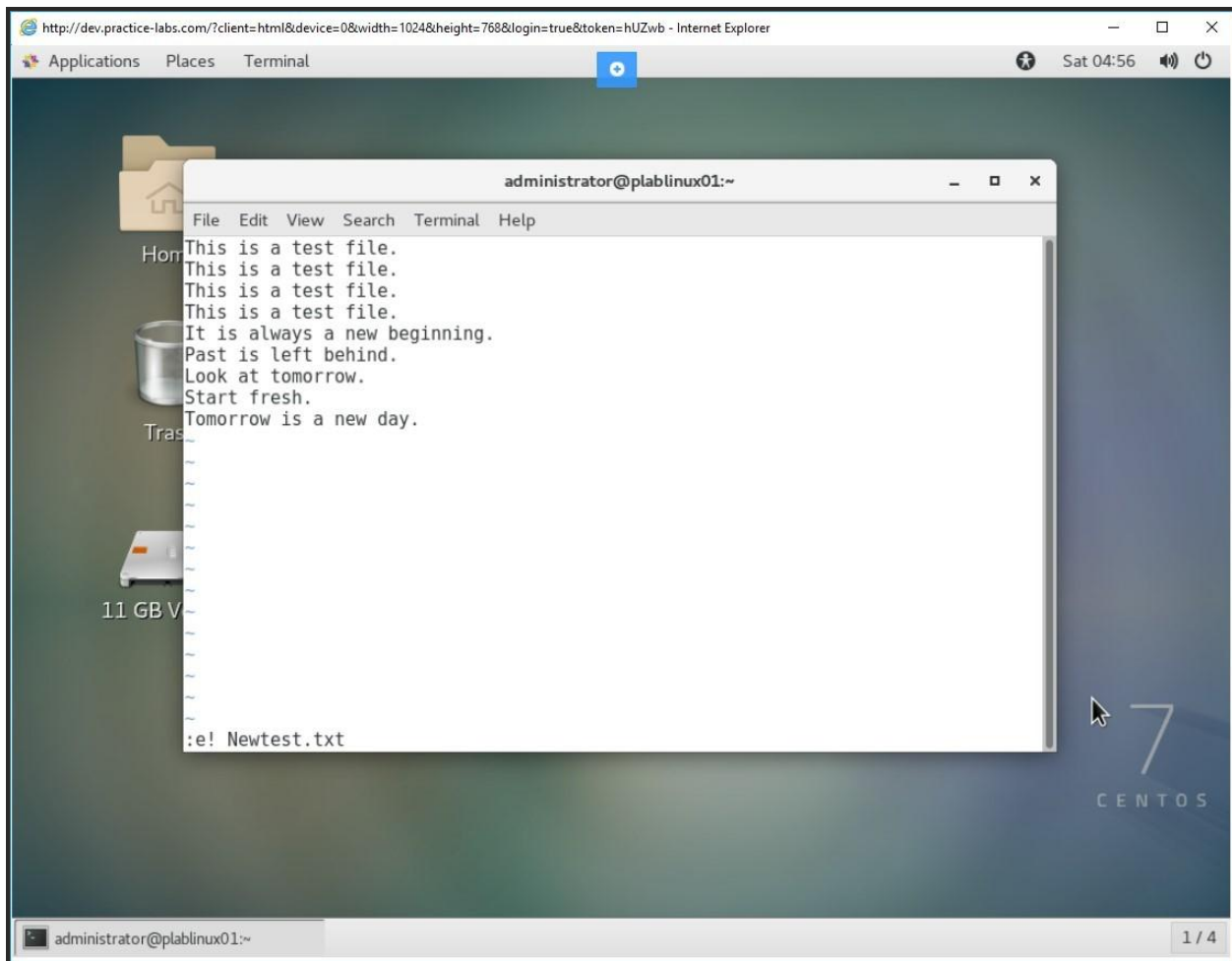
Press Enter.

Figure 1.47 Screenshot of PLABLINUX01: Creating another file within an existing file.

Step 23

Notice the new file is now opened.

Note: ! (exclamation mark) is used to force the action of the command.
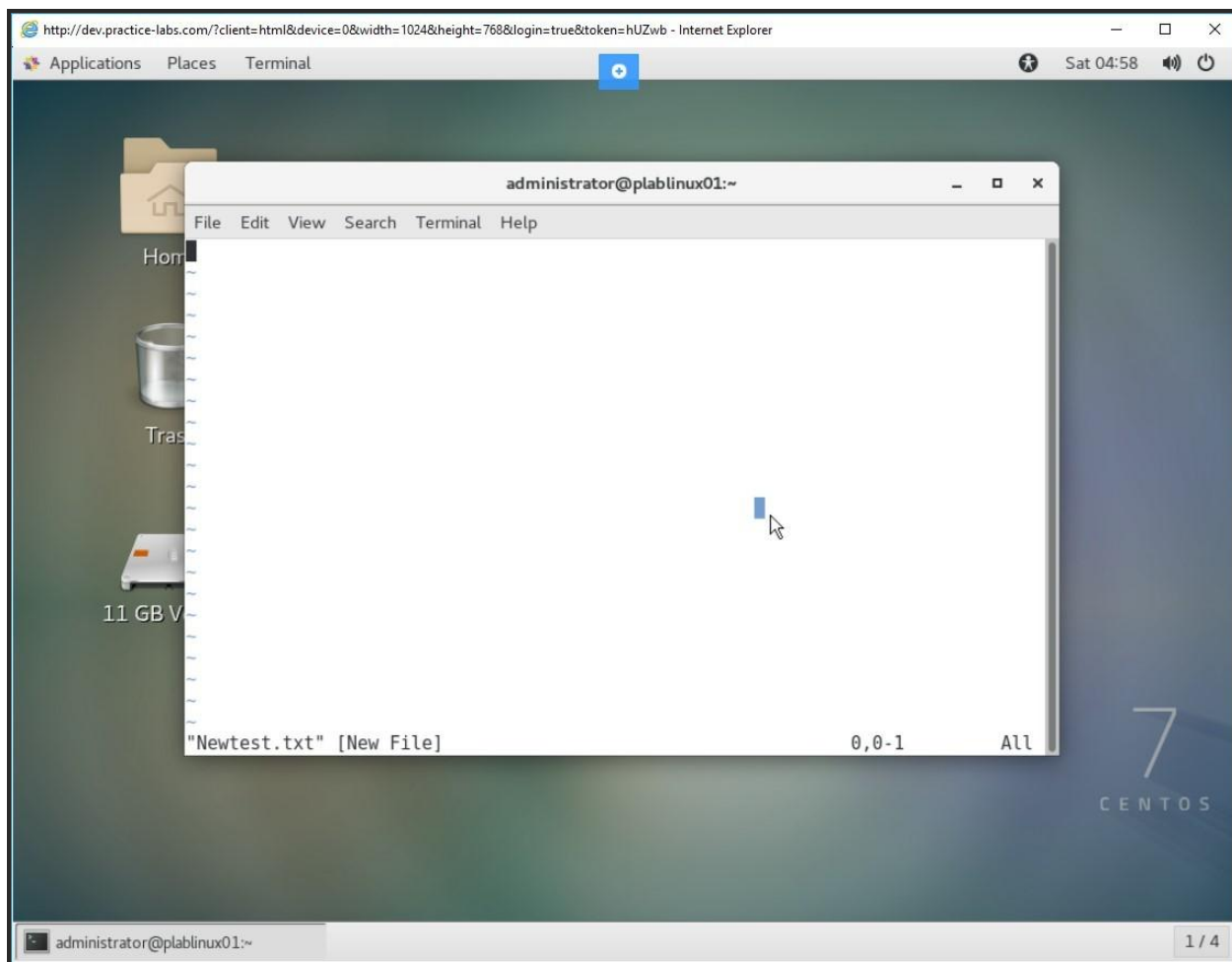
Figure 1.48 Screenshot of PLABLINUX01: Displaying the newly created file.

Step 24

Exit the file by using the following command:
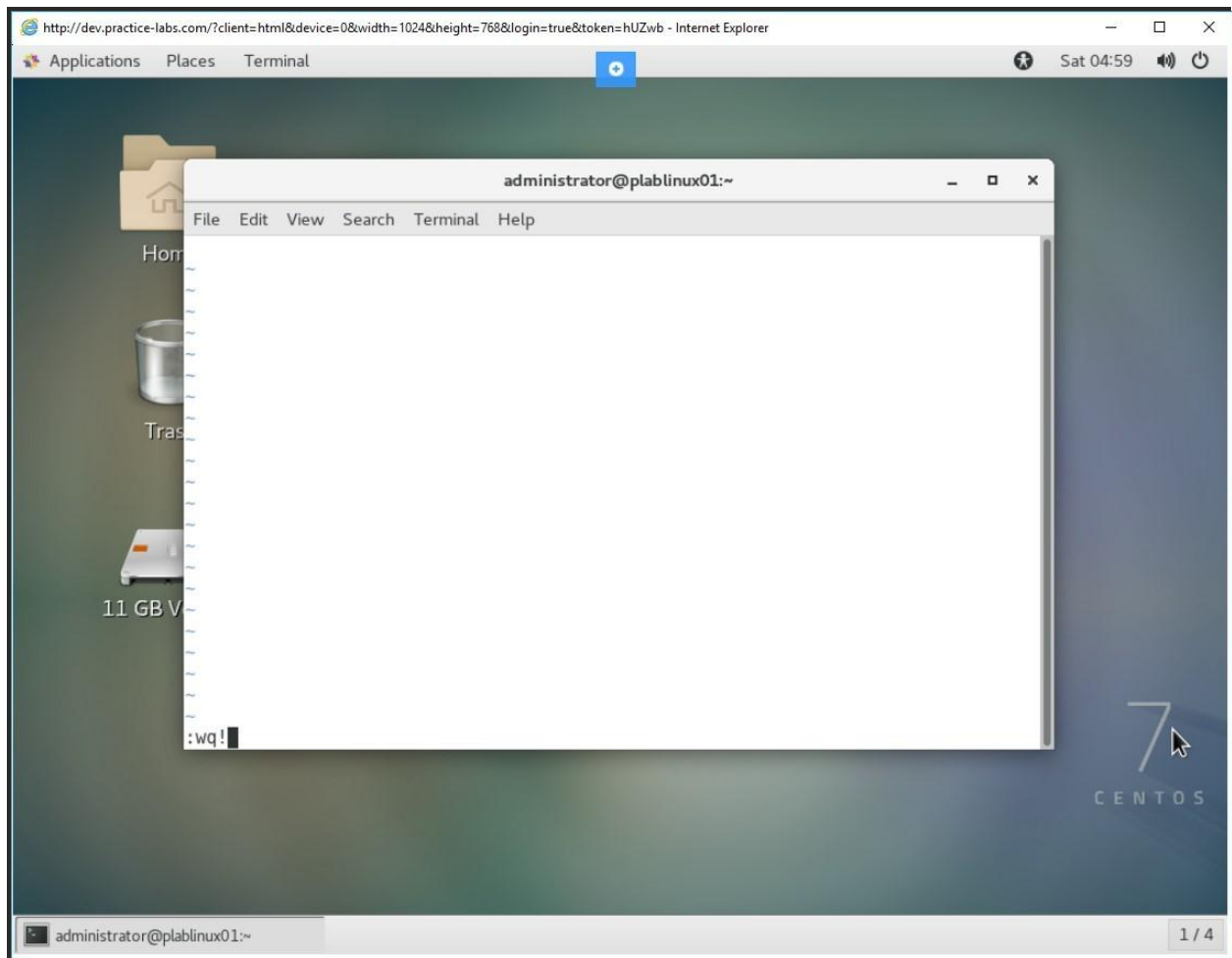
```
:wq!
```

Press Enter.

Figure 1.49 Screenshot of PLABLINUX01: Closing the current file without saving.

Step 25

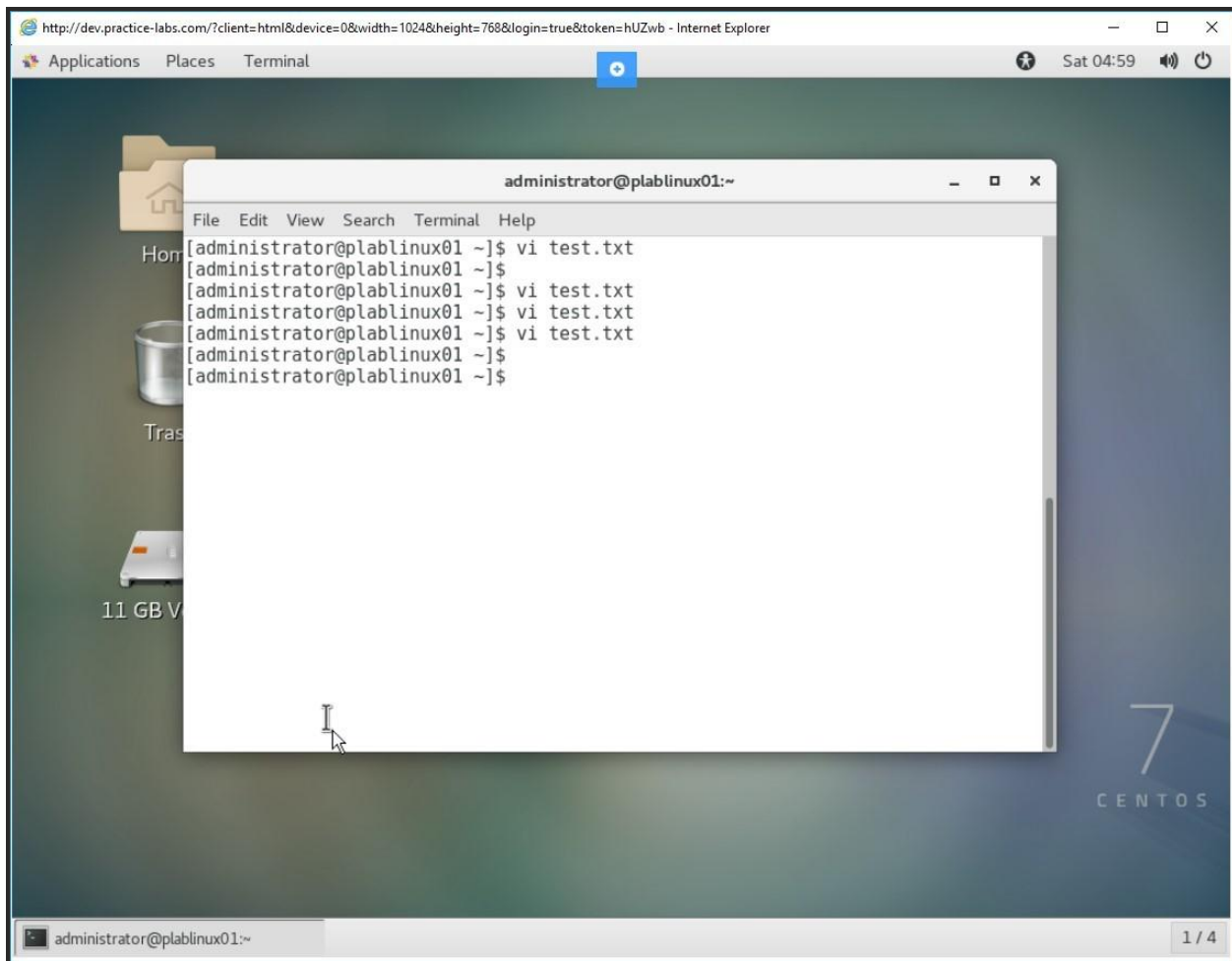You are back on the command line.

Figure 1.50 Screenshot of PLABLINUX01: Navigating back to the terminal window.

Step 26

Open the test.txt file once again. In the vi editor, you can search for specific words, lines, and characters within a file.

Note: The / is for forward (downward) search and ? is for backward (upward) search.

For example, open the test.txt file.

To perform a forward search of lines starting with the letter P, type the following command:
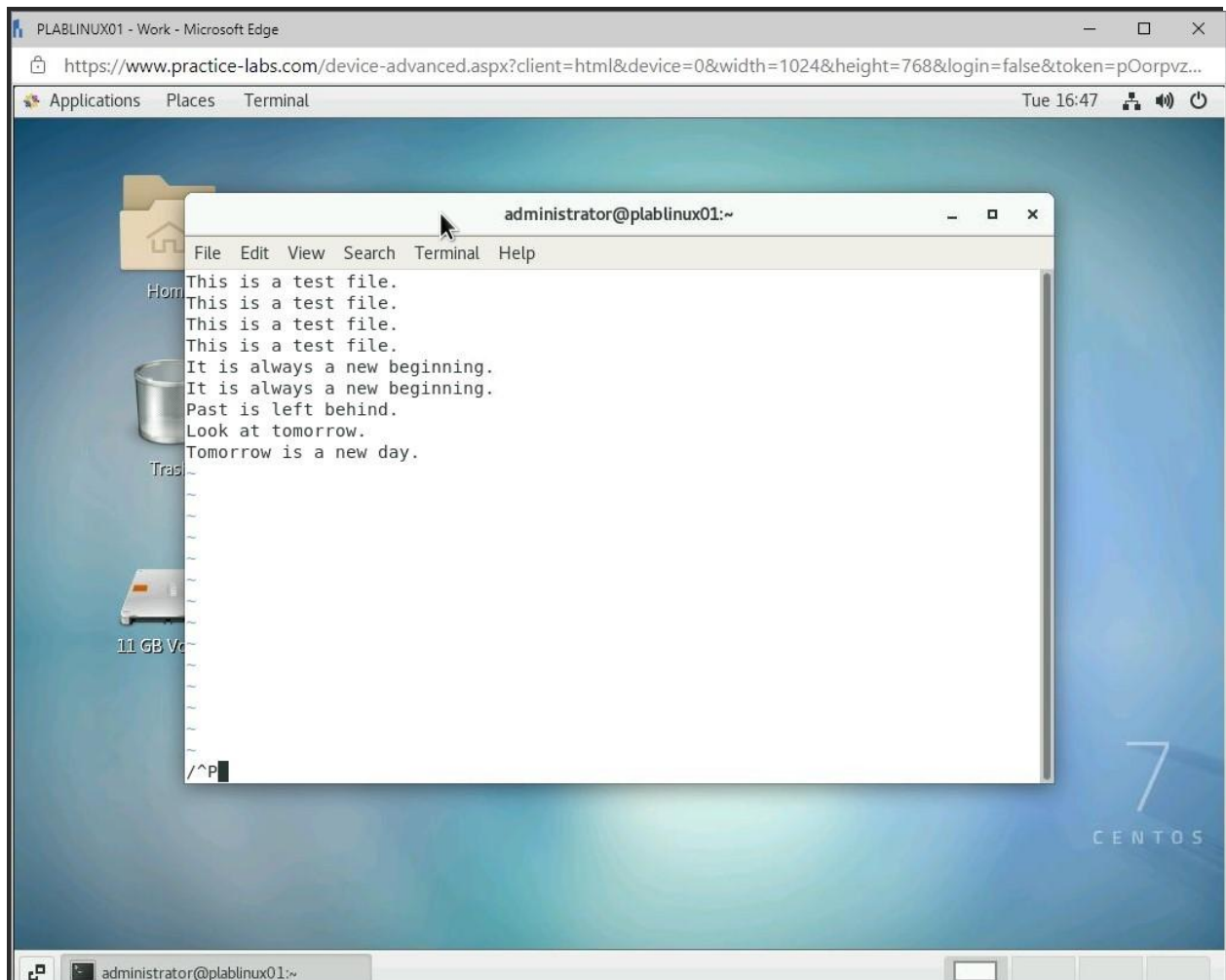
/^P

Press Enter.

Figure 1.51 Screenshot of PLABLINUX01: Searching for lines starting with a specific character.
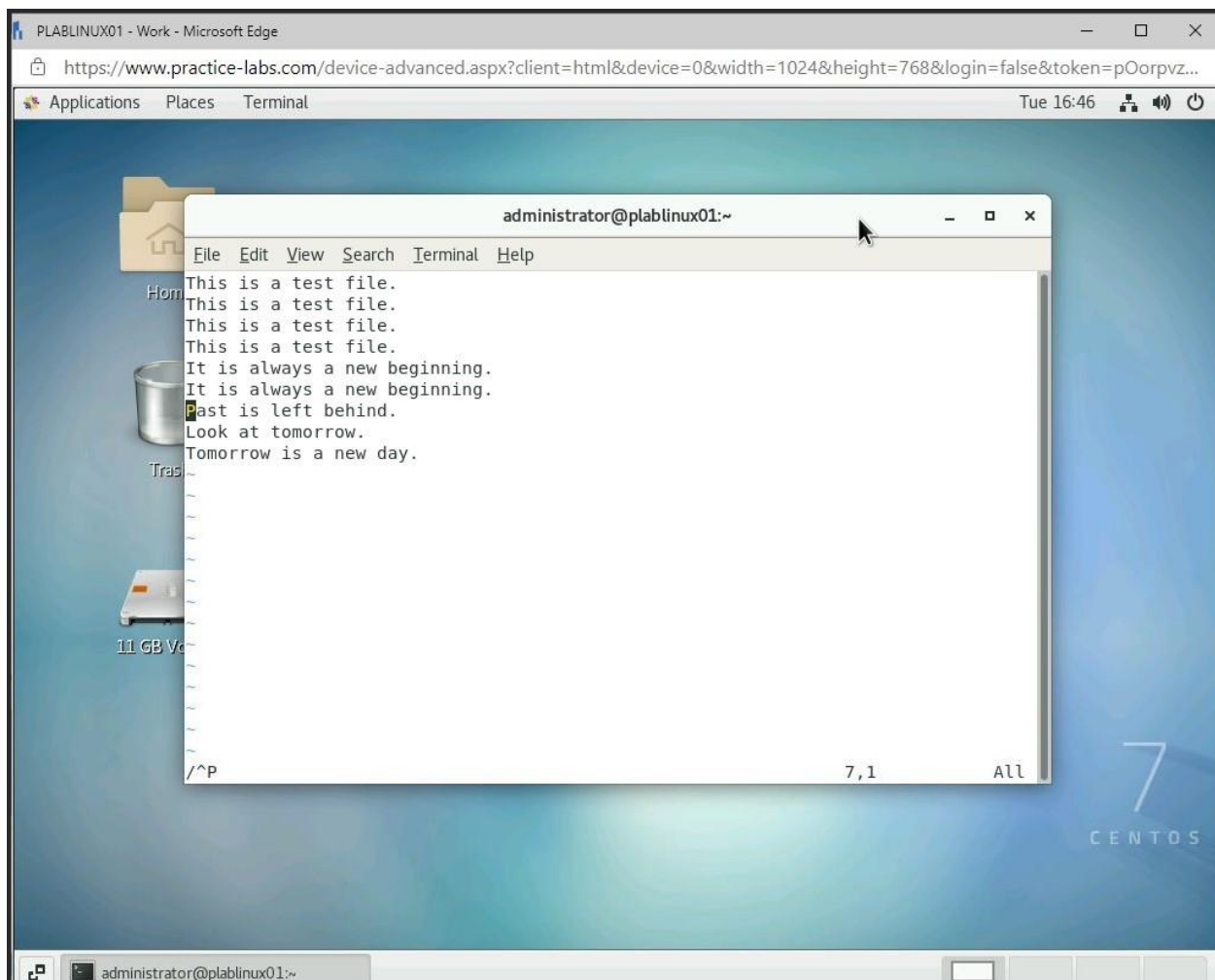
Note the output is now highlighted.

Figure 1.52 Screenshot of PLABLINUX01: Highlighting the searched output.

Step 27

You can also search for specific words. For example, to search for the word left, type the following command:
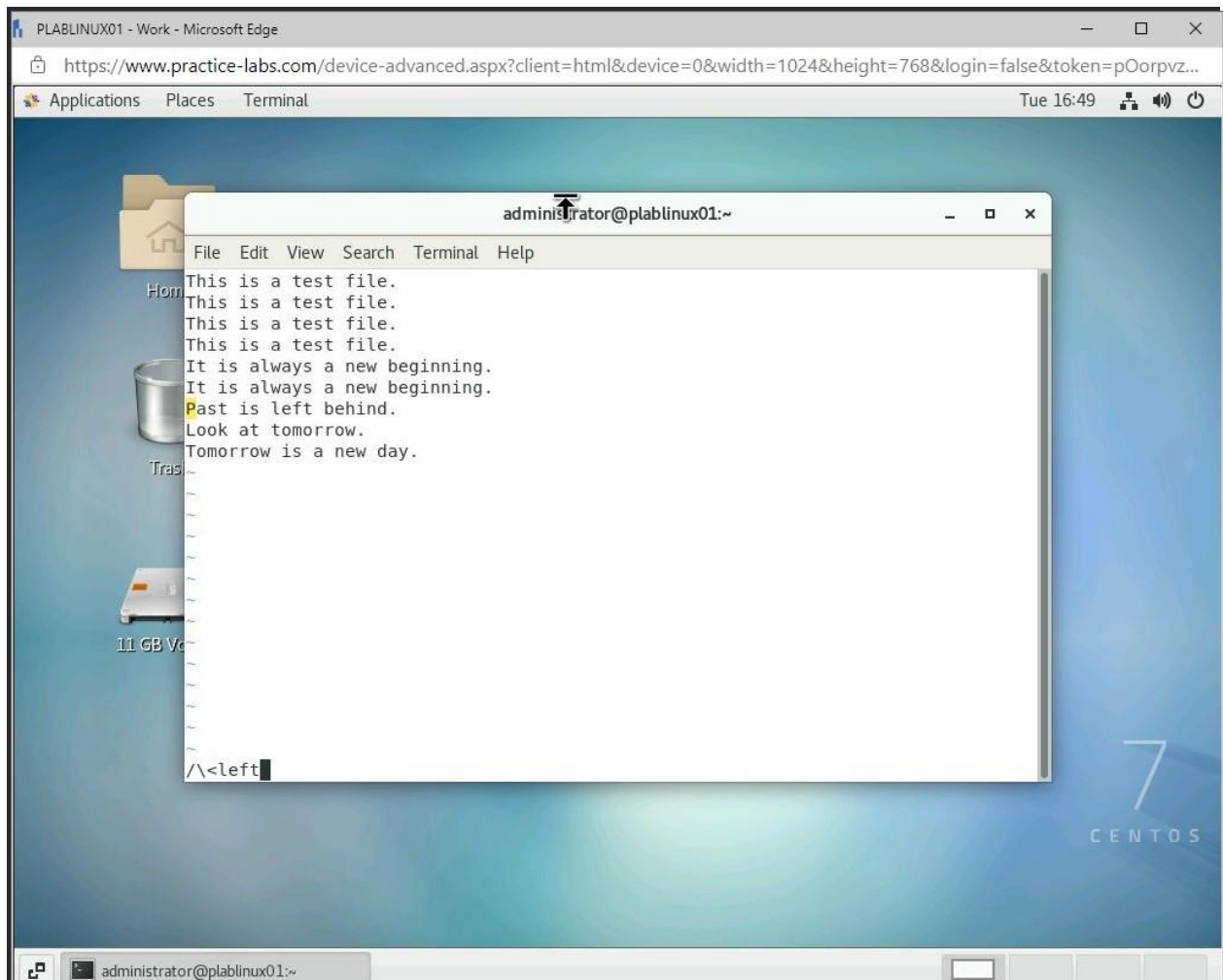
```
/\<left
```

Press Enter.

Figure 1.53 Screenshot of PLABLINUX01: Searching for specific words.
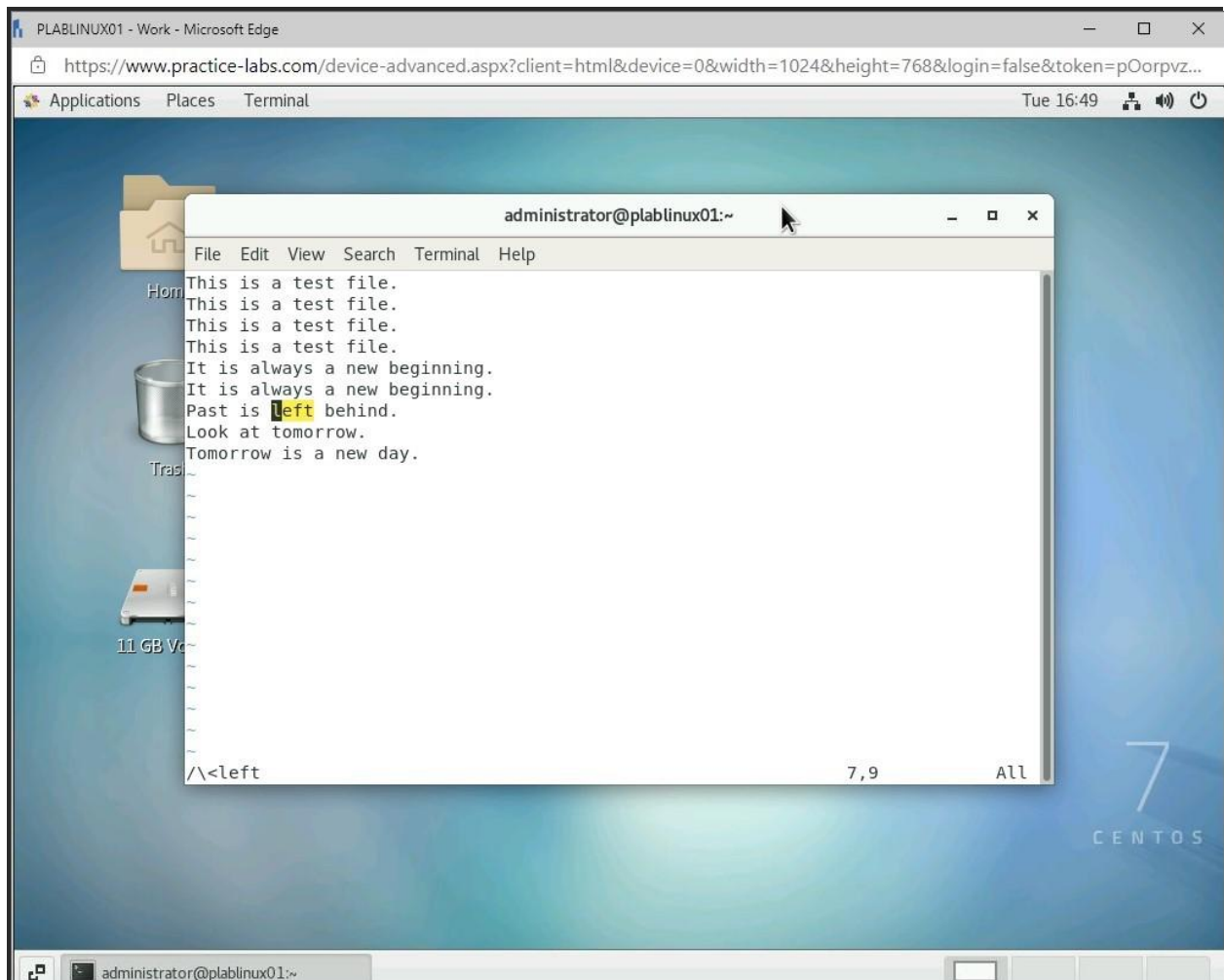
The output is now displayed.

Figure 1.54 Screenshot of PLABLINUX01: Highlighting the searched word.

Step 28

To search and replace a word, type the following command:
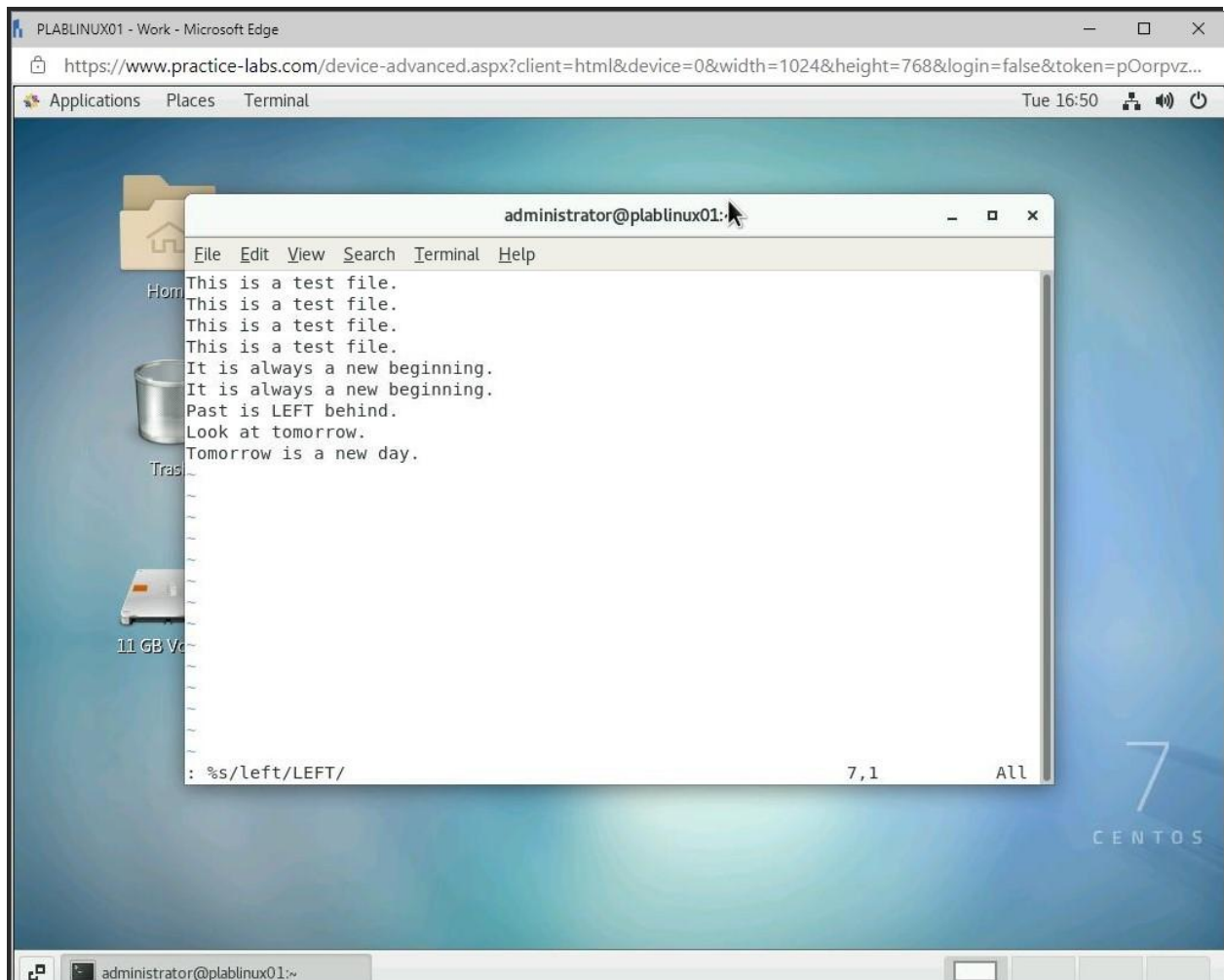
```
: %s/left/LEFT/
```

Press Enter.

Figure 1.55 Screenshot of PLABLINUX01: Searching and replacing a word.

Step 29

In the vi editor, you can undo the last changes.

For example, to change the word LEFT back to lowercase, ensure that you are in the command mode and press u.

Note: LEFT which you replaced in the last command, is now changed back to left.
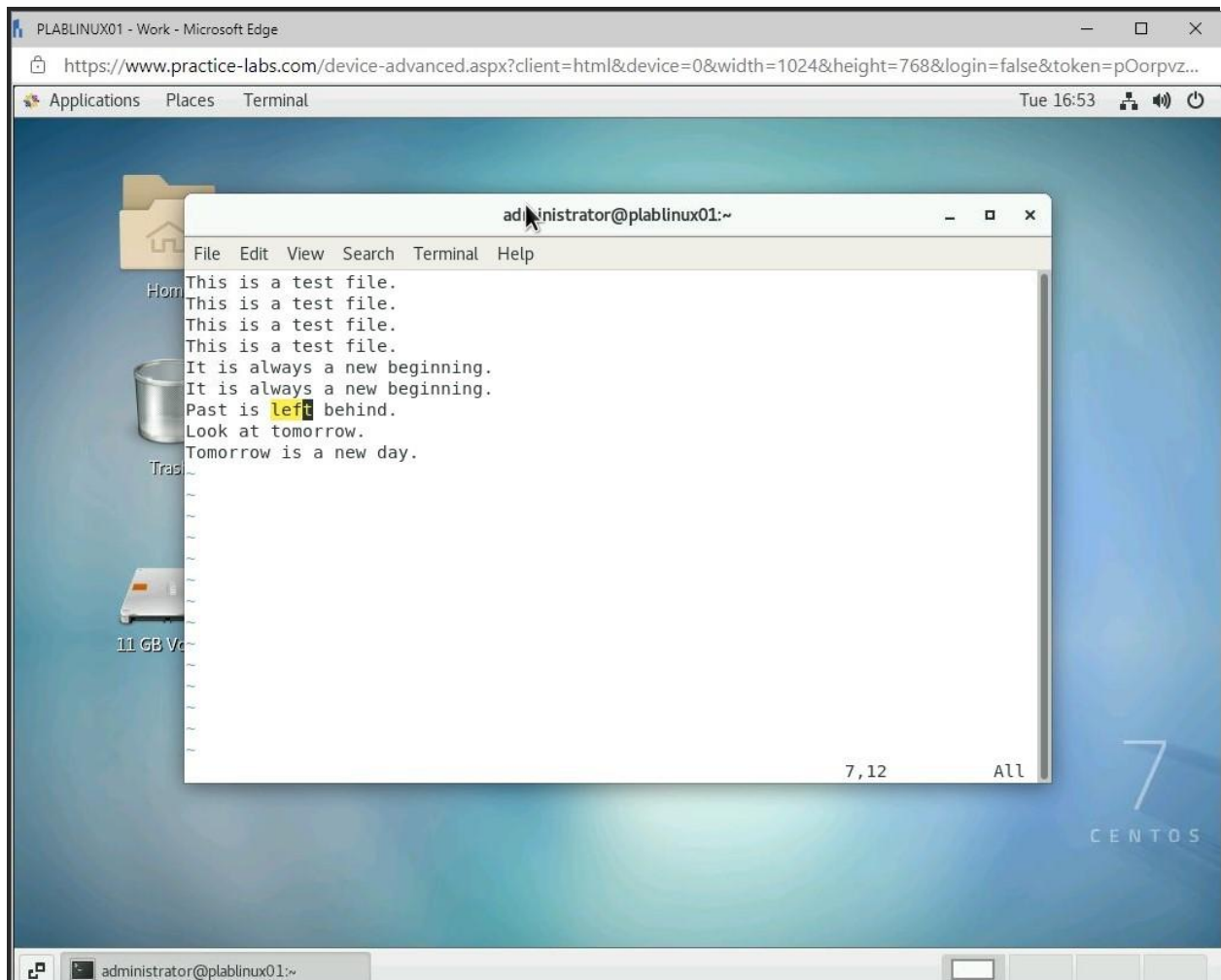
Figure 1.56 Screenshot of PLABLINUX01: Reversing the changed word to its original word.