

ΜΥΥ106 - Introduction to Computer Science

4th Lab

The vi text editor

In this lab we will use the text editor **vi** to create files and manage their contents (without opening the applications **Files** or **pluma**).

Open a terminal, go to the **myy106** directory and create a new directory **lab4** there (commands **cd**, **mkdir**).



In the following queries you will modify the contents of files, using commands in the **vi** text editor.

When editing a file in **vi**, we **always** follow a specific procedure:

- **Switch to text input mode** (e.g. with "i", "a" or "o")
- **Modify the text**
- **Return to command mode** ("Esc" key)

For your convenience, remember that the above procedure will be applied to **each** query. This means, at the end of each modification we will return to command mode (by pressing "Esc").

Finally, remember that during any editing in **vi**, you can undo the last change by pressing the **u** key.

1. Go to the **lab4** directory, and open the **vi** text editor to create the file **answers-lab4.txt**.
2. Save the file into the **lab4** directory using the appropriate command via **vi**, and then exit the **vi**.
3. Use the **wget** command to download the file **data.txt** from the address <https://www.cse.uoi.gr/~myy106/files/data.txt> to the current directory (**lab4**).
4. Open the file **data.txt** with **vi** and use the appropriate command to save it with a new name **lab4-data.txt** in the current directory (**lab4**).
5. Exit **vi** and issue the appropriate shell command to confirm that there are two files: **data.txt** and **lab4-data.txt**. Display the contents of each file separately using the appropriate command without using **vi**.
6. Open the file **answers-lab4.txt** with **vi** and
 - α'. Write your name and registration number on the first line of the file.
 - β'. On the second line, write only the command you just used to save the file **data.txt** with the new name **lab4-data.txt**.
 - γ'. In the third line, record only the key you pressed to switch from command mode to text input mode so you can add these three lines.
 - δ'. In the fourth line, record the key you need to press to switch from text input mode to command mode.

Save the file and exit **vi**.

7. Open the two files **lab4-data.txt** and **answers-lab4.txt** together with **vi** using a single command.
8. Through **vi** you should see the contents of the file **lab4-data.txt** you opened.
 - α'. With the appropriate command, go to the next file, namely **answers-lab4.txt**.
 - β'. Move with the appropriate keys to the fourth line and enter text entry mode by adding a blank line at the end of the file (line 5) with a key.

γ'. In the sixth line, record the keys you used to move to the fourth line, and in the seventh line, record the key you pressed to move to text entry mode.

δ'. In the eighth line of the file, record the command that transferred you from the file `lab4-data.txt` to `answers-lab4.txt`.

Save the file.

9. With the appropriate command within `vi`, display the line number so that it is easy to locate each line. Add a new line to the file `answers-lab4.txt`, and record the command that displays the line number, and save the file.

10. Go back to the file `lab4-data.txt` using the command that takes you back to the first file we opened with `vi`.

11. The file `lab4-data.txt` contains several errors that you should fix. On line 23 there are two consecutive words "even".

α'. Move directly to line 23 using the appropriate command.

β'. Then use the appropriate key to move to the beginning of the next word within line 23, until you reach the first word "even" and the cursor is at the first "e".

γ'. Delete the duplicate word.

12. Save the file `lab4-data.txt` and move to `answers-lab4.txt`.

α'. Move directly to the last line of the file (with a key, not a command).

β'. Add a blank line #10 with the appropriate key and on the same line write down which command you gave in the previous step to take you directly to line 23 of the file `lab4-data.txt`.

γ'. Add a new line #11 and record which key you pressed to move the cursor to the beginning of the next word until you reach the word **even** that you deleted.

δ'. Add a new line #12 and record the key combination with which you deleted the first word **even**.

ε'. Add a new line #13 and record the key you pressed to move to the last line of the file `answers-lab4.txt`.

Save the changes and move to the file `lab4-data.txt`.

13. Move to line 23, and from there give the command to move directly to line 27 (i.e. 4 lines below).

α'. Delete the second consecutive word "many" at the beginning of the sentence by using the same key 5 times, 4 for many and once for the space that follows.

β'. Save the changes and move to the `answers-lab4.txt` file to record on a new line at the end of the file (it should be line #14) the key combination with which you moved from line 23 to line 27 in one move, and on another line (it will be #15) the key you used 5 times to delete the 5 characters.

Save the changes and return to the `lab4-data.txt` file.

14. Go to line #7 "Without hardware, ..." and delete the entire line using the appropriate key combination.

α'. Then go to line #5 and paste the text you deleted, just before line 5.

β'. Record the keys for deleting and pasting on line #16 in the response file.

Save the changes and move to the `lab4-data.txt` file.

15. Move to line #22 "It was small, clean, and easy to build on." and copy it.

α'. Move to line #23 and paste the copied line using the appropriate key so that the new line is #24.

β'. Using just one key, delete the first character of line #24, the capital "I", and insert the text "Because i" without having to switch from command mode to text input mode with an additional key. Line #24 should now be "Because it was small, clean, and easy to build on.".

γ'. Record the key you used on line #17 in the response file.

16. Using the method that requires the colon ":" and line breaks, move (i.e. delete and paste) lines 26-33 of the file `lab4-data.txt` to the end of the file. Navigate to the response file to record the command you used to delete lines 26-33 on line #18. Save the changes and move to the file `lab4-data.txt`.

17. Correct the word "Comptuers" on line #1 and the word "copmuter" on line #10 and save the changes. Move to the beginning of the file with a key. Search within `vi` for the word "computer" (all lowercase) and use the appropriate key to display the next result. Notice how many results the search returns for the word `computer`. Record the following in the response file:

- α'. In line #19 the key you used to move to the first line of the file,
- β'. in line #20 how did you search for the word "computer",
- γ'. in line #21 the button to display the next search result, and
- δ'. in line #22 the number of results it showed you.

18. Go to the `lab4-data.txt` file and

- α'. use the appropriate command to make the search case-insensitive.
- β'. Repeat the search for the word "computer" and count how many results there are.
- γ'. Record in the response file on line #23 the command you used to make the search case insensitive, and on line #24 record the number of results returned by the search.

Save the changes and move to the `lab4-data.txt` file.

19. On line #15, use the appropriate key to convert the words "COMPUTER SCIENTIST" to "computer scientist", using the same key multiple times to change from uppercase to lowercase for each letter. Do not use substitution. Record the key you used on line #25 of the answer file and save the changes.

20. Go to the file `lab4-data.txt` and replace the word "computer" with the word "computer" in all occurrences of the file. What do you notice? Record the command you used on line #26 of the response file and explain what you observed on line #27. Save the changes and move to the file `lab4-data.txt`.

21. Use the same key multiple times to merge all the lines in the file into one. Save the changes. Record the key you used in the response file on line #28 and save the changes.

22. Exit `vi`.

23. Run the appropriate command to display the number of lines in the `lab4-data.txt` file. There should only be one line due to the concatenation of all the lines you performed.

Submit answers: Click on the link below to open the form to submit your answers. **Copy** all the contents of the file `answers-lab4.txt` and **paste** them into the corresponding textbox.

<https://forms.office.com/e/HNRXQJmv0n>