Astroinformatics

Project Practice 2

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1 Objective

In this report our objective is put in practice what we learned in class, using different methods to achieve the different goals, using the latter csv file we will learn how; to change the delimiter from ',' to ' ', change the file extension, remove columns in our documents, also we are going to code the spectra for a star and return a julian date.

2 Introduction

In this project practice 2 we are going to develop the first task in terminal because is more easily to management files and changes extension with basic command lines or scripts, in the first task we faced several challenges but with persistence and a deep search we could overcoming the challenges.

The second and third task was develop with a basic python script code.

3 Task1

3.1 Change delimiters

In the first task we was ask to change the delimiter from our latter csv file from ”,” to ” ” this can be easily done with the command sed

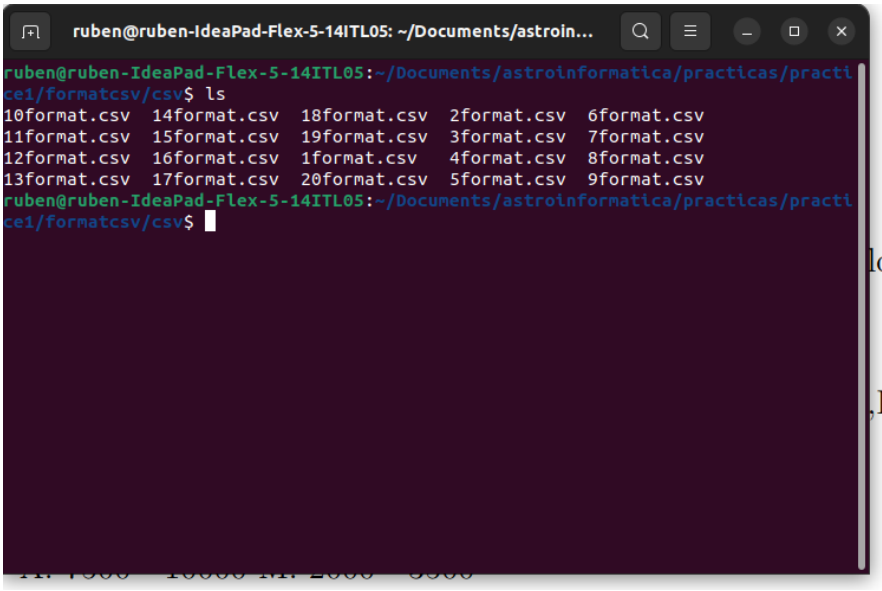

Figure 1: Csv files.

A error who i found is put ***sed ’/ ,/ \ / g’ format1.csv*** because this will change the delimiter of the file just when you are reading but this not save the changes, the correct way that file can save the changes is with ***sed -i -e $’/s/ ,\ / g’ format1.csv*** as we can see in 2 [2].
Of course we check the file if they got a changes in the delimiter and the changes was save it.

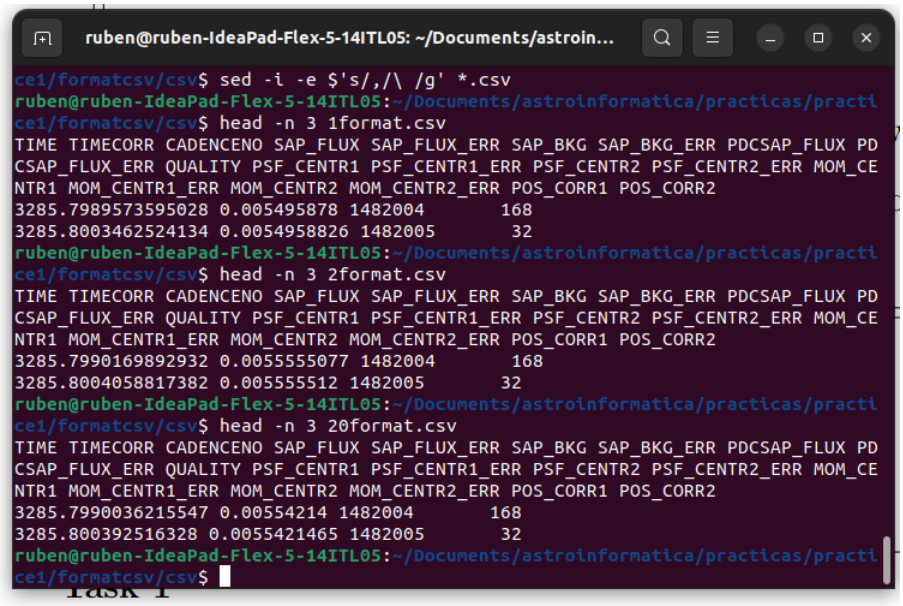

Figure 2: A different way to change the delimiters

3.2 Change the file extension

We have to be careful when going to change the extension, because is easily to get confused in add extension instead of changing it like 3 so to avoid this error we need to add ***"${f%.csv}".lc*** [1]in order to change the file extension like 4

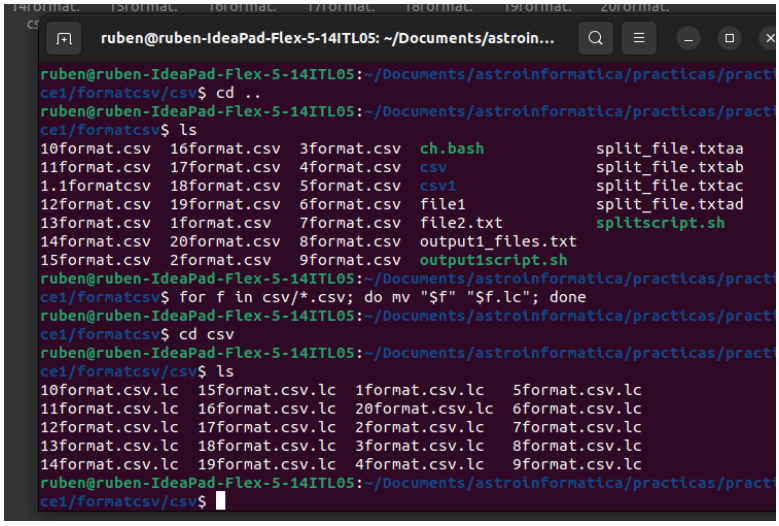

Figure 3: Common error in adding extension

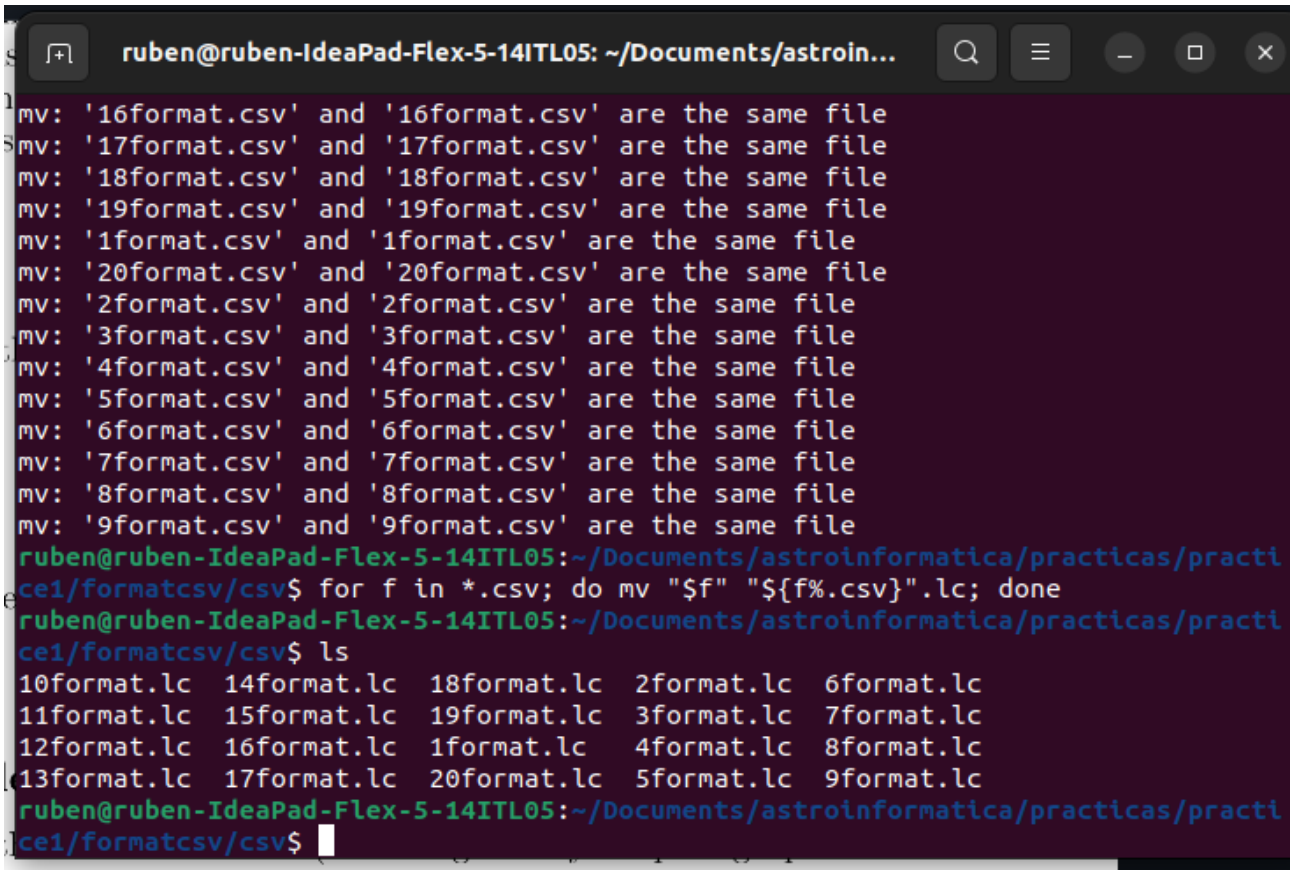

Figure 4: Changing extension

3.3 Remove all columns that are not part of the light curve

To remove the columns that do not need we can use the command cut, but we need to do i t with all 20 files so do it one by one is a harder task so for that reason we will use a for loop we write ***for file in *.lc; do cut -d\ -f1,4,5,8,9 "$file" > new_"$file"; done*** so we need to remember the *.lc is refer that we want all files with extension .lc and the -f1,4,5,etc are the columns we want to keep it and will save it in a new file call new format, we check with command head to verify if the columns were remove like 5

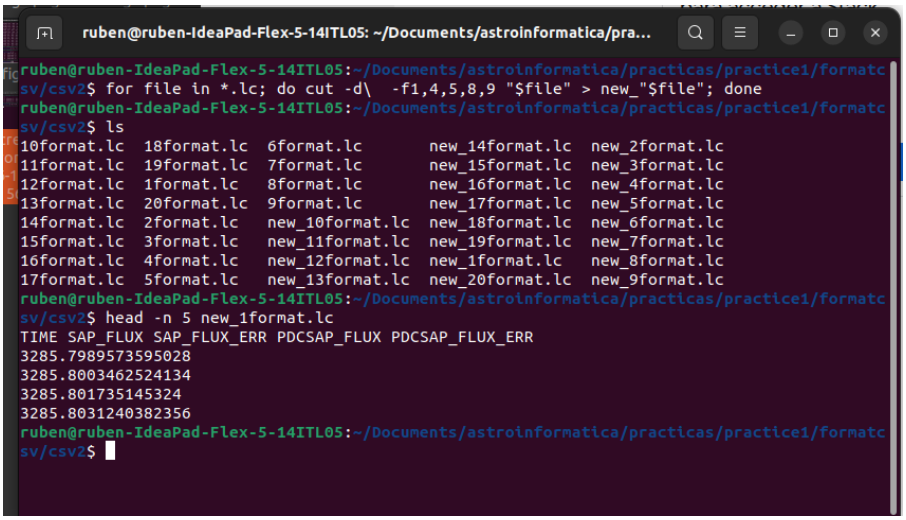

Figure 5: Removing columns

4 Task 2

To solve this task we will support of python in this task ask about spectra classification so in order to do this we need to use the condition if else and elif of python to distinguish the wavelength, so we name a variable 'temp' that is the temperature that user will enter, the variable 'esp' was defined to put the corresponding spectra like O,B,A, etc, so after that we use if conditional to achieve the task.

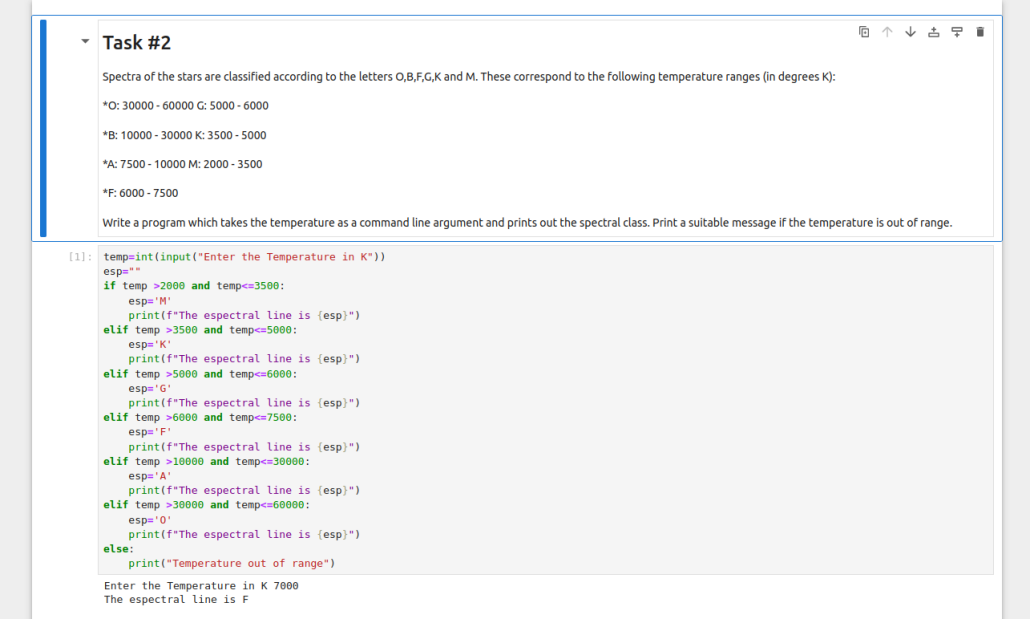

Figure 6: Conditions if in spectra wavelength

5 Task 3

For the task three we use dictionary cause we need to relate month with number to make a calculation of the julian date, to achieve this we create 3 variables corresponding to the date(day, month, year) that is the user will enter, beside that we are going to create a dictionary to relate the number 13,14,etc to the corresponding month, after that wil put the julian date formula and will print the julian date corresponding to the latter data.

Figure 7: Using dictionary in python

6 Conclusion

In this practice we learned how to delimiter, change extension and delete columns this will help us to sort astronomy data in larger survey, in python we use different methods to solve the task like conditional and dictionary.

References

[1] https://www.unix.com/unix-for-dummies-questions-and-answers/79091-changing-extension-

[2] https://www.youtube.com/watch?v=iyXCzAYNmSs.

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