Astrophysics Lab Work – Linux Basics Week 2

Passwords and machine/session numbers have been provided to you in the "intro"-lab.

Please log all your commands (not the results) from the exercise to a file `YourName_logfile.txt` within your working directory (see below). Log only successful commands.

Exercise

- Login in to the account `numprakt` on the USM-hosts asigned to you.
- Find all the pdf files in the home directory, including subfolders. What does this do? Add a comment to your logfile starting with `#`.
- Add a `#` at the very beginning of the last command. What does this do? Add a comment to your logfile starting with `#`.
- In the file `/home/moon/paech/ubung0/linux.txt` find all the lines that contain the word 'auf' as well as 'das' by first using `grep` to search for lines with 'auf', then piping it to a grep for the word 'das'.
- In the previous command, add the option `-n --color` to the command.
- Look at the file `/home/moon/paech/AM2223-0100_output_detections.cat` by using `more`. It contains detection information for some galaxy clusters found in data from the Dark Energy Survey. Among other information, it contains information about the redshift in the column Zphys (column 7) and the signal to noise ratio of the detection (column 8).
- Use the commands `head -5 /home/moon/paech/AM2223-0100_output_detections.cat` and `head -9 /home/moon/paech/AM2223-0100_output_detections.cat` - what does it do (also check out the man page for head). Add a comment to your logfile starting with `#`.
- You can sort the contents according to redshift with the command `sort -n -k 7 /home/moon/paech/AM2223-0100_output_detections.cat`.
- Try the command `/usr/bin/grep -v ^# /home/moon/paech/AM2223-0100_output_detections.cat`. What does this do? Add a comment to your logfile starting with `#`.
- Now select the lines with the 5 highest singal to noise ratios. In order to do so, use the previous 3 commands with the right options and combine them with the help of pipes `|`. First discard the comment lines starting with `#`, then sort the file from highest to lowest signal to noise (use the option `-r` for sorting) and then filter the first 5 lines of that output.

Finalizing the exercise

When you are finished with all your exercises, please check your log-file carefully and email it to your supervisor in text format (no pdf, no MS Word docs, etc.).