

## Exercise sheet 3 – Shell: files and in/out redirect

### Goals:

- Usage of file commands
- In/out redirect

### Exercise 3.1: List commands

- Where do you find important user commands?
- Show the content of the directory in detailed form screen by screen!
- Create the file `cmdlist` which contains the names of the important user commands! (Important: Only the names!)
- How many user commands are existing?
- Where do you find the commands for the `sysadmin`?
- Show the content of the directory in detailed form screen by screen!
- Create the file `syscmdlist` which contains the names of the commands for the `sysadmin`! (Important: Only the names!)
- How many commands for the `sysadmin` are existing?
- Write the content of `cmdlist` and `syscmdlist` into `allcmdlist`! The content of `cmdlist` should be before the content of `syscmdlist`.
- Print all commands on the screen in alphabetical order!

### Exercise 3.2: Work with the command lists

- Create the file `header` with the content "All commands:"! (Hint: `echo`)
- Create the file `trailer` with following content:  
"A total of  
*count \*Insert count of commands here\**  
commands"
- Put the content of `header`, `allcmdlist` and `trailer` into one file `summary`!
- Print the first 10 lines of `summary` onto the screen!
- Print the first 12 lines of `summary` onto the screen!
- Print the last 10 lines of `summary` onto the screen!
- Print the last 20 lines of `summary` onto the screen!
- Print the lines 100 - 150 of `summary` screen by screen! (Hint: Use a combination of `head` and `tail`.)
- Show the content of `summary` in reverse order screen by screen!
- How many letters, words and lines does `header` contain?
- Rename `header` into `HEADER`!

- (l) Create the directory `testdir` inside the home directory!
- (m) Move `summary` into `testdir`!
- (n) Create inside the home directory a copy `summary.save` of `summary`!
- (o) Is it possible to create a copy of `summary` from `testdir` with the same name `summary` into the home directory?
- (p) Create a hardlink `summary2` of `summary`!
- (q) What happens with `summary2` if you remove `summary`?
- (r) Create a softlink `summary.s` of `summary2`! Can you access `summary.s`? How is `summary.s` displayed when using `ls -l`?
- (s) Remove `summary2`! Can you now access `summary.s`?

### Exercise 3.3: Cleanup

- (a) Remove `testdir` and its content with one single command!
- (b) Remove the rest of the files which were created during this exercise! You have to do it with one command.

### Exercise 3.4: Make backups

- (a) Update the `BS_exercises` repository with `git pull`
- (b) Make a full backup of `BS_exercises/sheet_03_files/test_data` into `backup` directory. Make sure that all attributes like access and modification date, and access rights are copied.
- (c) Delete a file from `BS_exercises/sheet_03_files/test_data`.
- (d) Create a file in `BS_exercises/sheet_03_files/test_data`.
- (e) Backup `BS_exercises/sheet_03_files/test_data` into `backup`. Make sure that the changes from `BS_exercises/sheet_03_files/test_data` are also made in `backup`.

### Exercise 3.5: Syntax highlight

- (a) Let you show the contents of `BS_exercises/sheet_03_files/main.c` with `cat` or `less`.
- (b) Let you show the contents of `BS_exercises/sheet_03_files/main.c` with syntax highlighted.