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Tutorials for “Unix for Advanced Users”
Exercise sheet 1

Recapitulation Exercise:

What do the commands `echo`, `cat`, `cd`, `pwd`, `sort`, `uniq`, `wc` do? Which operation does the command

```
sort data* | cat pre - post >> out
```

perform?

Recapitulation Exercise:

Using your favourite editor, how do you move the cursor (using only the keyboard)

- 60 characters forward?
- to the beginning of the line?
- to line 251?
- one word backward? (and what is a word in this context?)

How do you delete

- the next three words?
- everything until the end of the line?
- everything from the beginning of the file until the cursor position?

Which other movement and deletion operations does your editor offer (such as: move to end of paragraph, delete until matching parenthesis, delete white space, ...).

Exercise 1.1:

Give for each of the following pairs of commands one scenario where the two commands have different effects.

- (a) `cat original > copy`
- (a') `cp original copy`

- (b) `cp original copy`
- (b') `rm -f copy; cp original copy`

- (c) `rm -f copy; cp original copy`
- (c') `echo > copy; rm -f copy; cp original copy`
- (d) `cp original copy`
- (d') `mv original copy; cp copy original`

(Hint: For command (a), the shell opens first the file `copy` for writing and executes then `cat original` in such a way that standard output of this command is redirected to `copy`.

Exercise 1.2:

What does the following command do?

```
find . -name '*.tex' -mtime -10 -print
```

(Hint: `man find`).

Exercise 1.3:

How do you use `find` to discover all regular files in `/home/usr/eva` or below where at least one further directory entry refers to? (Why does this work only for hard links and not for symbolic links?)

Exercise 1.4:

If both files `b` and `a/../b` exist, then they should be identical. Here this is not the case:

```
klaus(42)% ls -l a/../b b
-rw-r--r--  1 klaus    group3    37452 Apr 21 16:10 a/../b
-rwx-----  1 klaus    group3      248 May  4 19:06 b
```

How can this happen?

Do not submit your solution. Test (and revise, and test, ...) it on some Unix system and bring your solution (or solution attempt) to the tutorial We will use the tutorial to present working solutions and to have a look at problems you could not fix yourself.