

2019 oplossingen labo 0 - Lars Lemmens

Met dank aan de [Github van Martijn](#) en natuurlijk Lars Lemmens

LABO 0

Exercise 24

Create 2 files with random text.
Then create a third file containing
the contents of the two other files

```
1) echo 'some random text' > file1  
2) pwgen -n1 > file2  
3) cat file1 file2 > file3
```

- The pwgen command generates passwords which are designed to be easily memorized by humans, while being as secure as possible.
- -n stands for minimum 1 number AND -1 stands for per line 1 password.
- '>' means overwrite a file

Exercise 25

List all home directories which are open for other users (group or others should have r,w or x rights)

```
• ls -l /home/LDAP/ | grep -v 'drwx-----' | grep -v '^total' | tr -s ' ' | cut -d ' ' -f9
• ls -l /home/LDAP/ | grep -v 'drwx-----' | grep -v '^total' | awk '{print $9}'
• ls -l /home/LDAP/ | grep -vP '^(drwx-----|total)' | awk '{print $9}'
• ls -l /home/LDAP/ | awk '$1 !~ /drwx-----|total/{print $9}'
```

- grep prints lines matching a pattern.
- -v stands for inverted match.
- -P stands for perl expression
- ^ matches position just before the first character of the string.
- The tr command replaces all occurrences of a character in a file, and print the result.
- -s replaces each input sequence of a repeated character that is listed in SET1 with a single occurrence of that character
- The command cut removes sections from each line of files
- -d use DELIM instead of TAB for field delimiter
- -f(number) select only these fields
- awk '{print \$(number)}' prints the field with the matching number

Exercise 26

List all lines in the file /usr/share/dict/dutch containing the string 'rare'

```
• cat /usr/share/dict/dutch | grep rare
• grep rare /usr/share/dict/dutch
```

Exercise 27

Only show the columns with filenames and permissions of the files in your homedirectory. (tip: use ls and cut)

```
ls -l ~ | grep -v '^total' | tr -s ' ' | cut -d ' ' -f1,9
```

- grep prints lines matching a pattern.
- -v stands for inverted match.
- The tr command replaces all occurrences of a character in a file, and print the result.
- -s replaces each input sequence of a repeated character that is listed in SET1 with a single occurrence of that character
- The command cut removes sections from each line of files
- -d use DELIM instead of TAB for field delimiter
- -f(number) select only these fields

Exercise 28

Sort the lines from 27 in reverse alphabetical order

```
ls -l ~ | grep -v '^total' | tr -s ' ' | cut -d ' ' -f1,9 | sort -r -k2
```

- grep prints lines matching a pattern.
- -v stands for inverted match.
- The tr command replaces all occurrences of a character in a file, and print the result.

- -s replaces each input sequence of a repeated character that is listed in SET1 with a single occurrence of that character
- The command cut removes sections from each line of files
- -d use DELIM instead of TAB for field delimiter
- -f(number) select only these fields
- The sort command sort lines of text files
- -r reverse the result of comparisons
- -k start a key at POS1 (origin 1), end it at POS2 (default end of line).

Exercise 29

Use the command cal to find out on which day of the week your birthday is in 2050 and write your output to a newly created file

```
• ncal -m 6 2050 | grep ' 9 ' | cut -d ' ' -f1 > file  
• cal -N -m 6 2050 | grep ' 9 ' | cut -d ' ' -f1 > file
```

- The command ncal displays a calendar and the date of Easter
- The command cal displays a calendar and the date of Easter
- -m displays the specified month
- The command cut removes sections from each line of files
- -d use DELIM instead of TAB for field delimiter
- -f(number) select only these fields
- '>' means overwrite a file

Exercise 30

Append the sentence 'THE END' to the file you created in the previous exercise without opening this file in an editor (hence: use a one-liner)

- `echo 'THE END' >> file`

`>>` makes a file and saves it

Exercise 31

Create a subdirectory TEST in your homedir. Now create some files in it using this command line (and make sure you understand what happens!)

```
for foo in `seq 1 9`; do touch "file $RANDOM"; done && touch 'file keep me'
```

How can you remove all files except the file “file keep me” with just one 'oneliner'?

```
1) mkdir ~/TEST; cd ~/TEST
2) for foo in {1..9}; do touch "file $RANDOM"; done && touch 'file keep me'
```

- `rm file\ [0-9]*`
- `ls file\ [0-9]* | while read file; do rm "$file";done`
- `ls -l | grep -v 'file keep me' | xargs -d '\n' rm`
- `find . -type f ! -name 'file keep me' -delete`

- The `for` keyword indicates a for loop ==> SYNTAX : `for WORD [in WORDLIST ...] ; do ACTIONS ; done`
- The command `touch` creates a new empty file(s) or change the times for existing file(s) to current time
- The `rm` command removes files or directories
- Remove (unlink) the FILE(s)
- The `while` command continuously executes the list list-2 as long as the last command in the list-1 returns an exit status of zero.
- The command `xargs` builds and executes command lines from standard input
- `-d` stands for delimiter ==> This can be used when the input consists of simply newline-separated items, although it is almost always better to design your program to use `--null` where this is possible.
- The `find` command searches for files in a directory hierarchy
- `-f` stands for regular file
- `-delete` stands for Delete files; true if removal succeeded.

Exercise 32

List the name and permissions of the first 10 directories in `/etc`.

Sample output:

```
drwxr-xr-x /etc/
drwxr-xr-x /etc/alternatives
drwxr-xr-x /etc/apache2
drwxr-xr-x /etc/apache2/conf.d
drwxr-xr-x /etc/apache2/mods-available
drwxr-xr-x /etc/apache2/mods-enabled
drwxr-xr-x /etc/apache2/sites-available
drwxr-xr-x /etc/apache2/sites-enabled
drwxr-xr-x /etc/apt d
rwxr-xr-x /etc/apt/apt.conf.d"
```

```
• ls -l /etc | head -10 | grep -v '^total' | awk '{print $1 " " $9}'
```

- The head command prints the first 10 lines of each FILE to standard output. With more than one FILE, precede each with a header giving the file name. With no FILE, or when FILE is -, read standard input.
- grep prints lines matching a pattern
- -v stands for inverted match.
- awk '{print \$(number)}' prints the field with the matching number

Exercise 33

Same question as #32, but now also omit all error messages. "

```
• ls -l /etc 2>/dev/null | head -10 | grep -v '^total' | awk '{print $1 " " $9}'
```

- 2>/dev/null is used to redirect to a file
- The head command prints the first 10 lines of each FILE to standard output. With more than one FILE, precede each with a header giving the file name. With no FILE, or when FILE is -, read standard input.
- grep prints lines matching a pattern.
- -v stands for inverted match.
- awk '{print \$(number)}' prints the field with the matching number

Exercise 34:

List the name and permissions of all files in the /etc directory containing the word 'host' in their

name. Do this without the use of the commands grep and/or awk."

- `find /etc/ -type f -name '*host*' 2>/dev/null | xargs -d '\n' ls -l # (recursive search)`
- `find /etc/ -maxdepth 1 -type f -name '*host*' 2>/dev/null | xargs -d '\n' ls -l`
- `ls -ld /etc/*host* | tr -s ' ' | cut -d ' ' -f1,9 # (also show files of type directory)`
- `ls -ld /etc/*host* | sed -e '/^d./d' | tr -s ' ' | cut -d ' ' -f1,9`

- The find command searches for files in a directory hierarchy
- -f stands for regular file
- -name stands for the name
- 2>/dev/null is used to redirect to a file
- The command xargs builds and executes command lines from standard input
- -d stands for delimiter ==> This can be used when the input consists of simply newline-separated items, although it is almost always better to design your program to use --null where this is possible.
- -maxdepth stands for the - levels of directories below the starting point
- The command cut removes sections from each line of files
- -d use DELIM instead of TAB for field delimiter
- -f(number) select only these fields
- The tr command replaces all occurrences of a character in a file, and print the result.
- -s replaces each input sequence of a repeated character that is listed in SET1 with a single occurrence of that character

Revision #2

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