

# Exercises

## Exploring directories

open up a Linux shell, write:

```
ls -l /etc
```

Can you find executable files? Repeat this with `/usr/bin`

## Exploring files

open up a Linux shell, read a file's contents by:

```
cat /proc/cpuinfo
```

What does it show? Repeat it with `/proc/meminfo`

# Unix directory tree

compare the root directories of Windows and Linux. What could the different directories for?

# File permissions

- ▶ create the file `test.txt` in your home directory and write something in it. Give it the permissions:

```
-----rw-
```

- ▶ try to open `test.txt`. What happens? Has your partner have an access to it?
- ▶ what about with following rights?:

```
---rw-rw-
```

- ▶ can you access the files of other students? Why?

# Processes

- ▶ run the command *top* or better *htop*:

```
$ htop
```

you can exit *htop* by pressing the q key

- ▶ what do the different columns and rows tell?
- ▶ try to crash the system by killing some processes that you see using:

```
kill *process-id*
```

# Vocabulary

the lecturer will assign you one of the following words. When it is your turn, explain the word in one or two sentences:

- ▶ operating system
- ▶ system software
- ▶ process
- ▶ user, group, others
- ▶ shell
- ▶ system call
- ▶ file

## Vocabulary II

- ▶ file suffix
- ▶ file format
- ▶ directory tree
- ▶ root
- ▶ file permissions
- ▶ driver
- ▶ absolute path
- ▶ relative path



# OS Diversity

what are the advantages and disadvantages of having multiple OSes? How can we cope with the disadvantages?

# OS diversity - solution

- ▶ OSes have different designs and philosophies
- ▶ different OS have different requirements for applications
  - ▶ e.g., the API for Windows is different than Linux
- ▶ can be avoided by using software platforms like Java or Qt, or by using web applications (e.g., HTML)

Exercises Solutions Exercises Appendix

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# File Extensions

- ▶ on your Linux, download a picture from the internet
- ▶ remove its file extension, i.e., remove .jpg, .png from the filename
- ▶ does your file manager still identify the file as an image?
- ▶ try the same on Windows

# File signature

- ▶ how does Linux know if a file is really a jpg file
- ▶ compare the signature of a *jpg* or *docx* file with the [hex signature shown on Wikipedia](#)
- ▶ use the tool *hexdump*