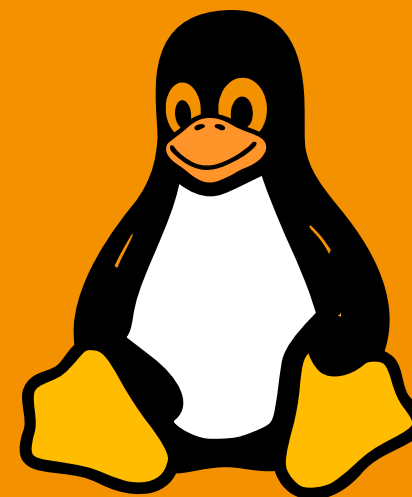**Prof. Dr. Florian Künzner**

Technical University of Applied Sciences Rosenheim, Computer Science
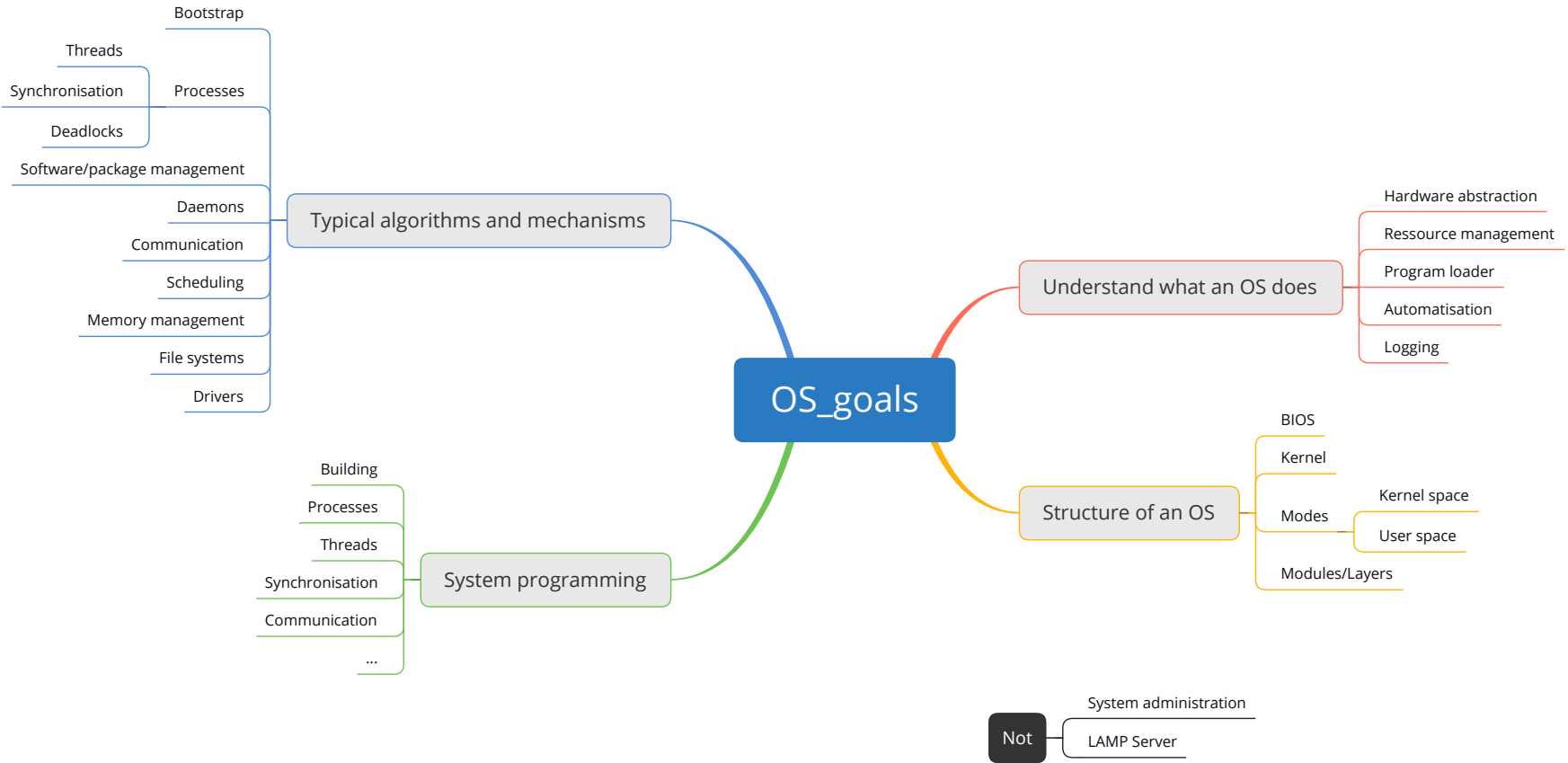
OS 14 – User Management

source: iconspng.com

The lecture is based on the work and the documents of Prof. Dr. Ludwig Frank

Goal

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Goal

OS::User Management

- User Management
- Group Management

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Intro

The management of users and groups are important tasks of an operating system.

Goal
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Intro
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User management
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Group management
○○○

Summary
○

User management

Use cases for user management?

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File overview

/etc

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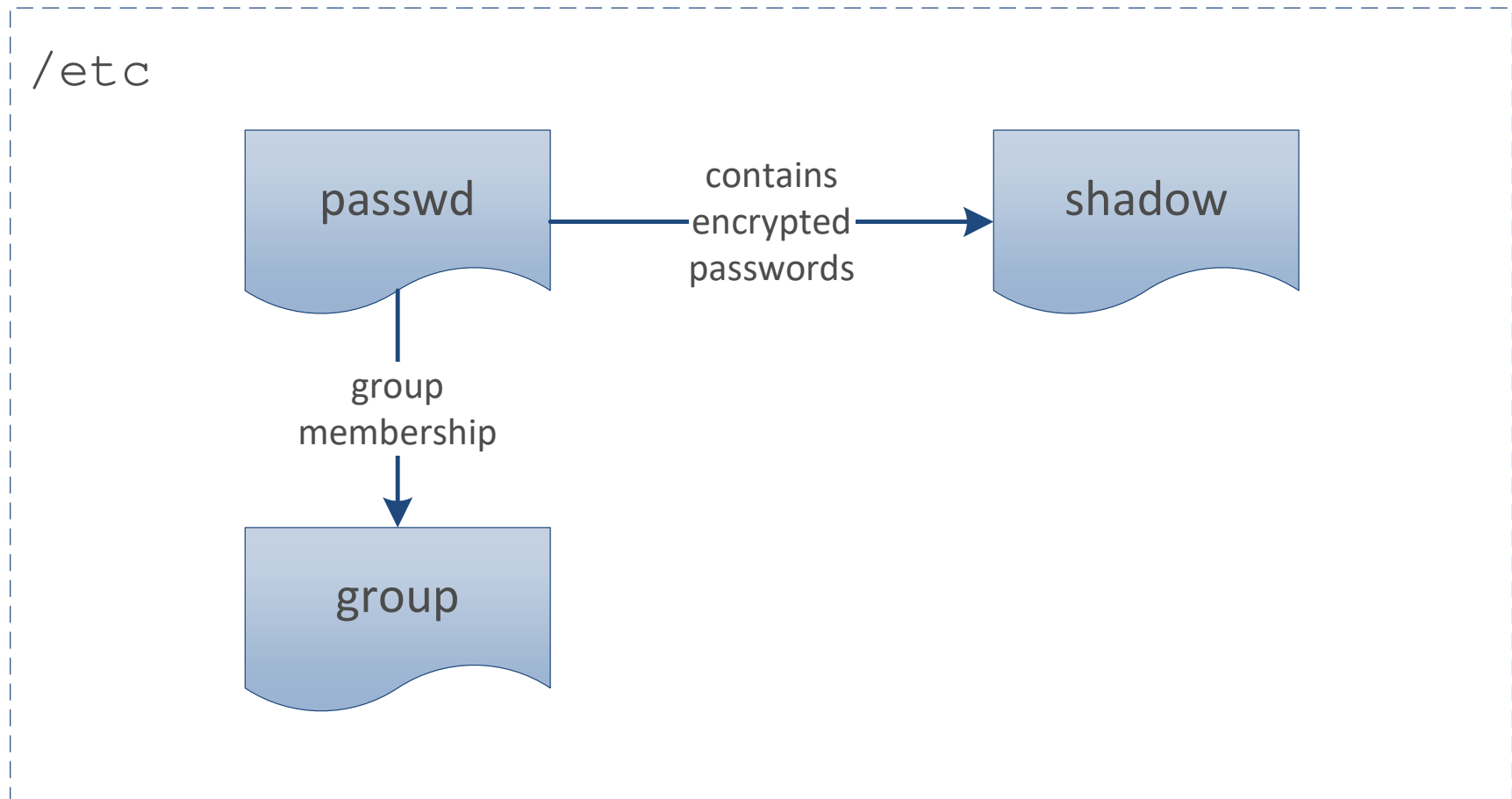
/etc/passwd

Syntax

```
1 USER:PW:UID:GID:INFO:HOME:SHELL
```

Example

```
1 root:x:0:0:root:/root:/bin/bash
2 ...
3 dev:x:1000:1000:dev,,,:/home/dev:/bin/bash
```

Field	Description
USER	Name of the user.
PW	Encrypted password of the user. **x** means the password is stored in /etc/shadow
UID	Id of the user.
GID	Primary group id. Every user has one primary group.
INFO	Text information about the user.
HOME	Path to the home directory of the user.
SHELL	Path to the shell that is used when the user logs in.

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/etc/shadow

Syntax

```
1  USER:PW:CHANGED:MIN:MAX:WARN:INACTIVE:END:RESERVED
```

Example

```
1  dev:$6$JpyBXRPX$GDgqFSSg8xSns6dSKB:17749:0:99999:7:::
```

Field	Description
USER	Name of the user.
PW	Encrypted password of the user. Algorithm: 1 is MD5, $2a$ is Blowfish, $2y$ is Blowfish, 5 is SHA-256, 6 is SHA-512
CHANGED	Last password change. Days since 01.01.1970.
MIN	The minimum number of days left before the user can change its password.
MAX	The maximum number of days until the password expires.
WARN	The number of days before the user is warned that his password is about to expire.
INACTIVE	The number of days after the user's password has expired and is therefore disabled.
EXPIRE	Days since 01.01.1970 on that the user is disabled.
RESERVED	Reserved field (for future).

User management: Linux commands

Command	Description
useradd	Creates the user information in /etc/passwd.
adduser	User friendly **frontend** for useradd.
usermod	Modifies the user information in /etc/passwd.
userdel	Deletes the user information in /etc/passwd.
deluser	User friendly **frontend** for userdel.
passwd	Change password of user.

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Group management

Use cases for group management?

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/etc/group

Syntax

```
1 GROUP:PW:GID:USER
```

Example

```
1 root:x:0:
2 vboxsf:x:999:dev,homer
3 dev:x:1000:root
```

Field	Description
GROUP	Name of the group.
PW	Encrypted password of the user (not explained in this lecture).
GID	Id of the group.
USER	Comma separated list of members (users) of the group. Unfortunately, groups can't be members of other groups.

Group management: Linux commands

Command	Description
groupadd	Creates the group information in /etc/group.
addgroup	User friendly **frontend** for adduser --group.
groupdel	Deletes the group information in /etc/group.
delgroup	User friendly **frontend** for deluser --group.
groups	Print group memberships of a user.

On Linux, the group membership is evaluated at login.

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Summary and outlook

Summary

- User Management
- Group Management

Outlook

- File systems