

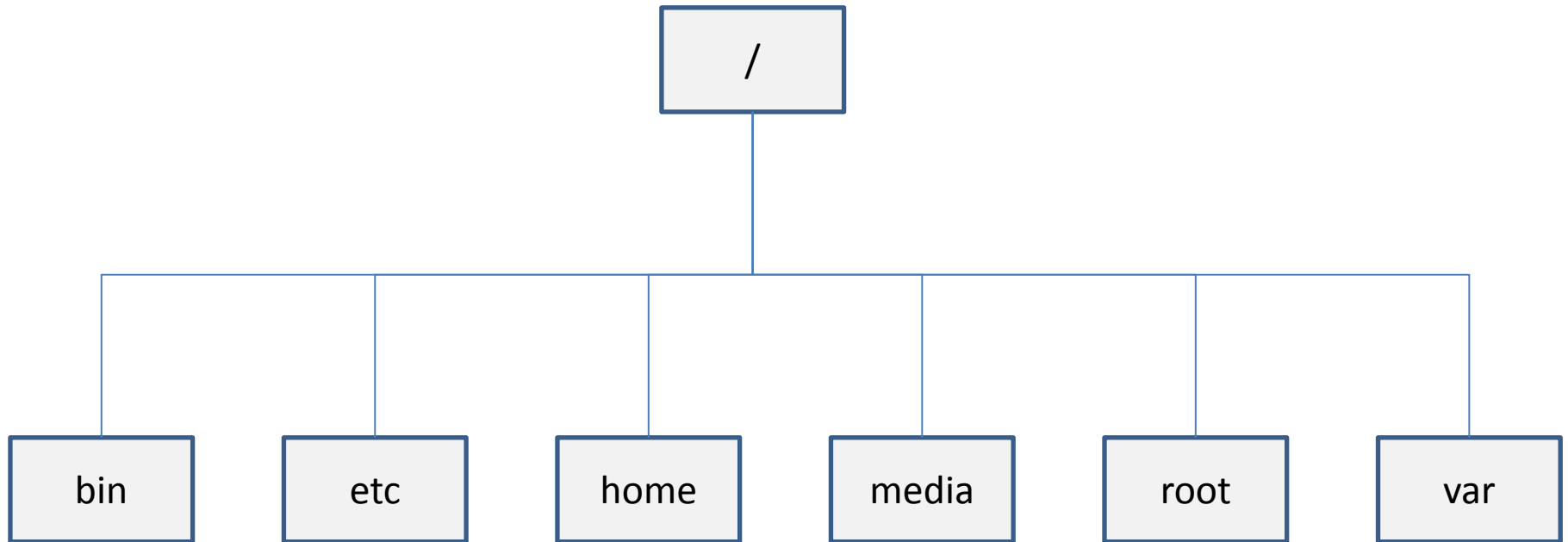
Linux Basics

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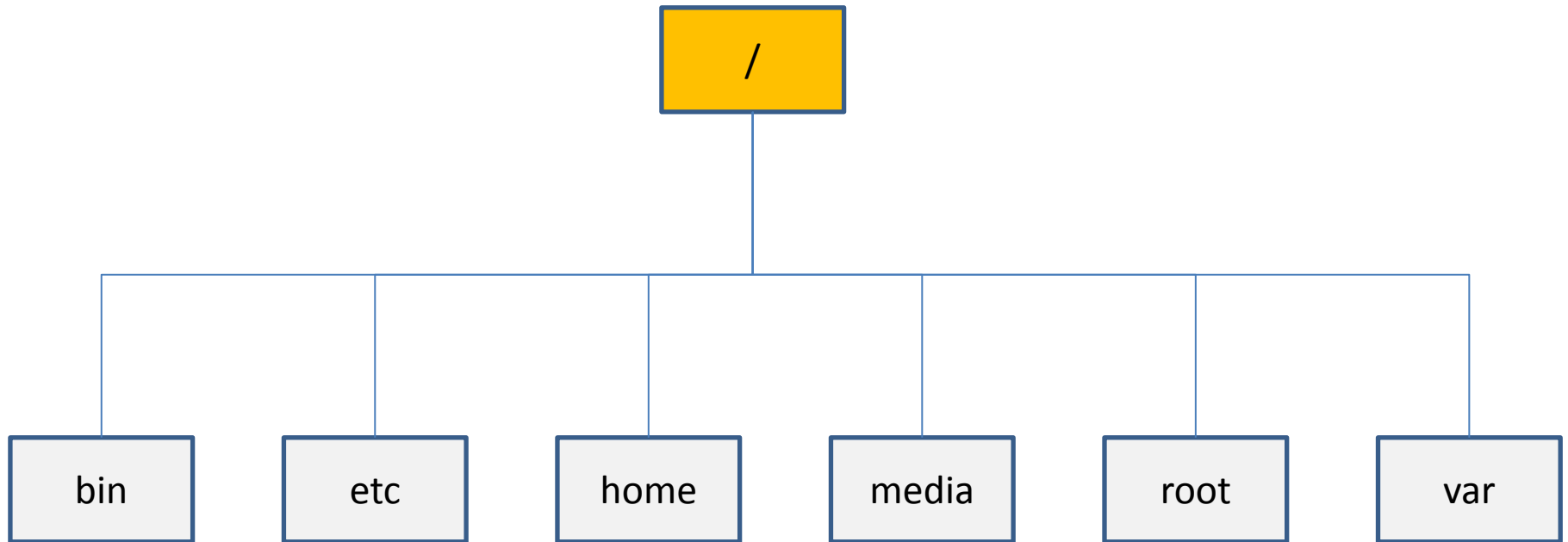
Agenda

1. Linux file system
2. Most important commands

1. Linux file system

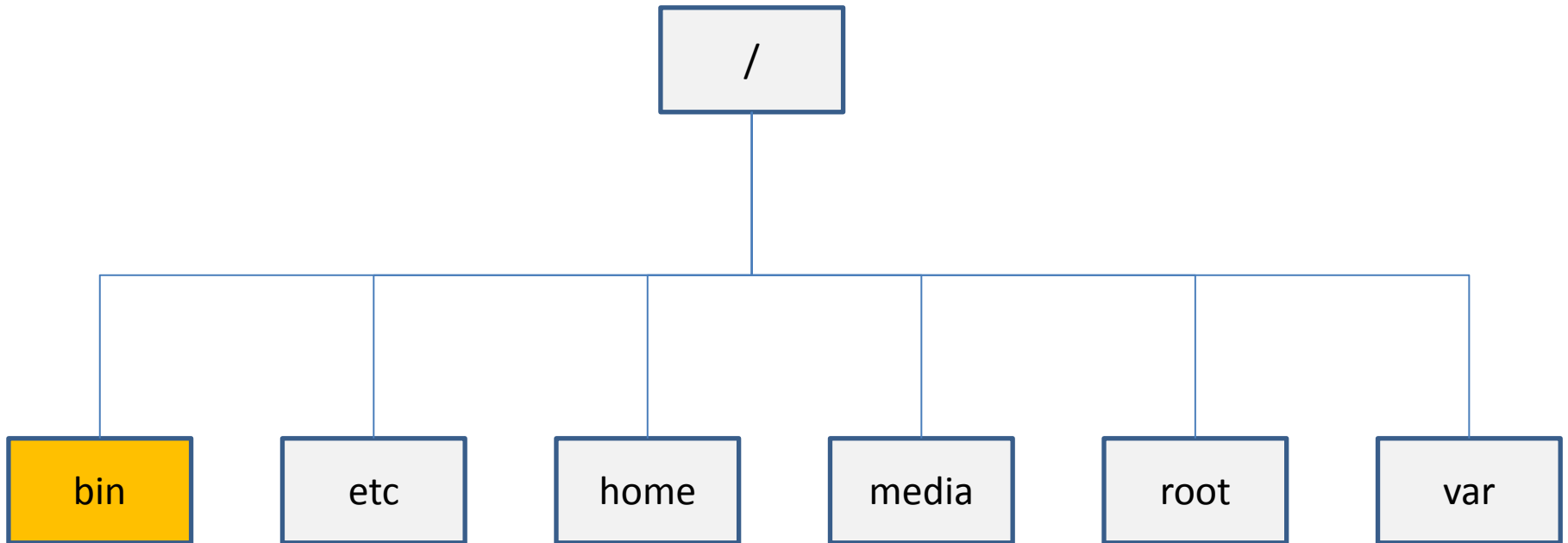


1. Linux file system



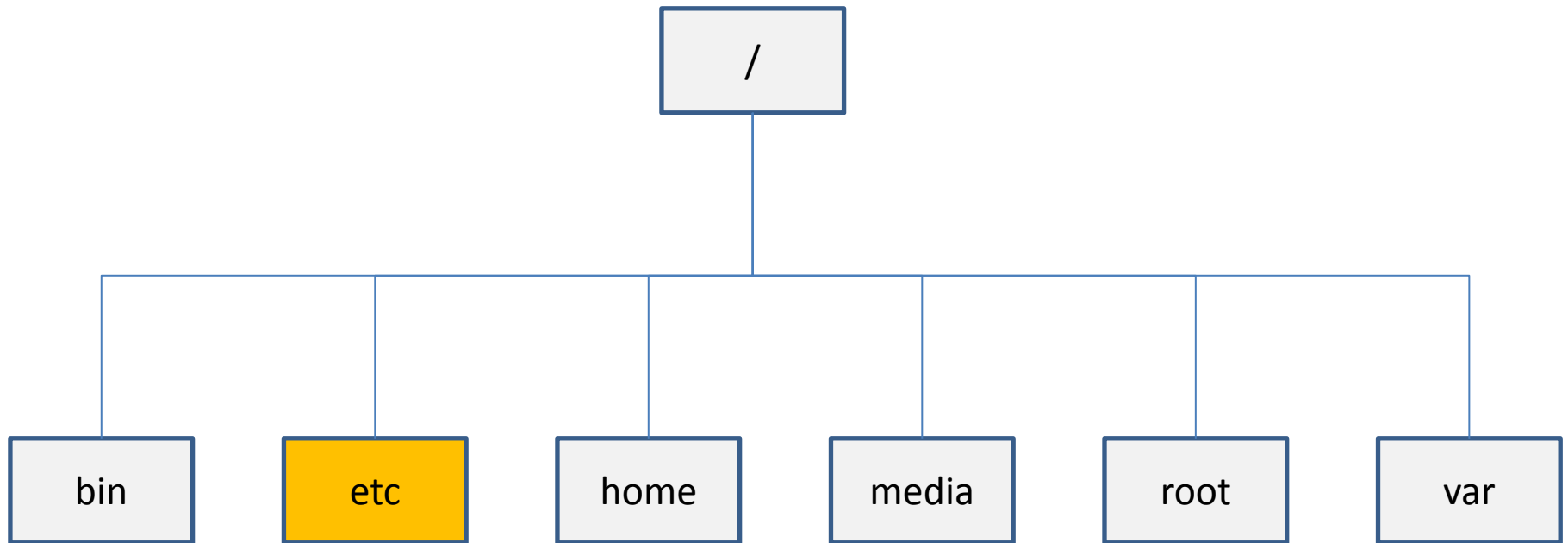
/: the root folder of linux

1. Linux file system



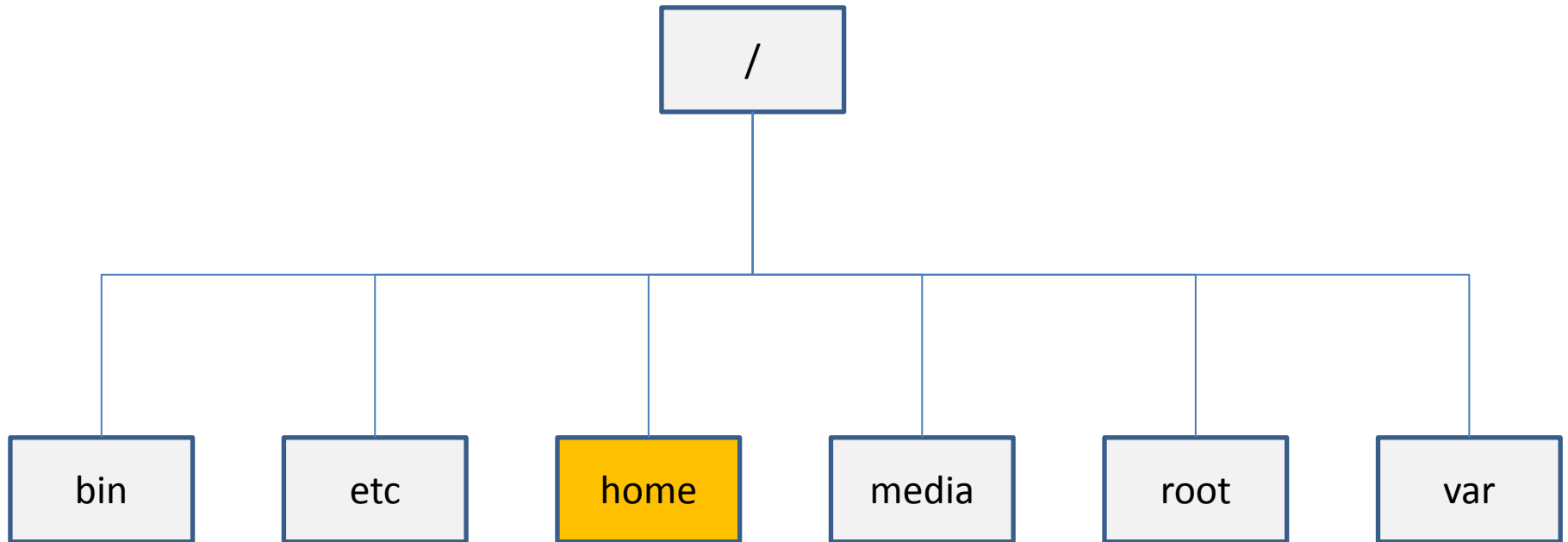
/bin: global commands

1. Linux file system



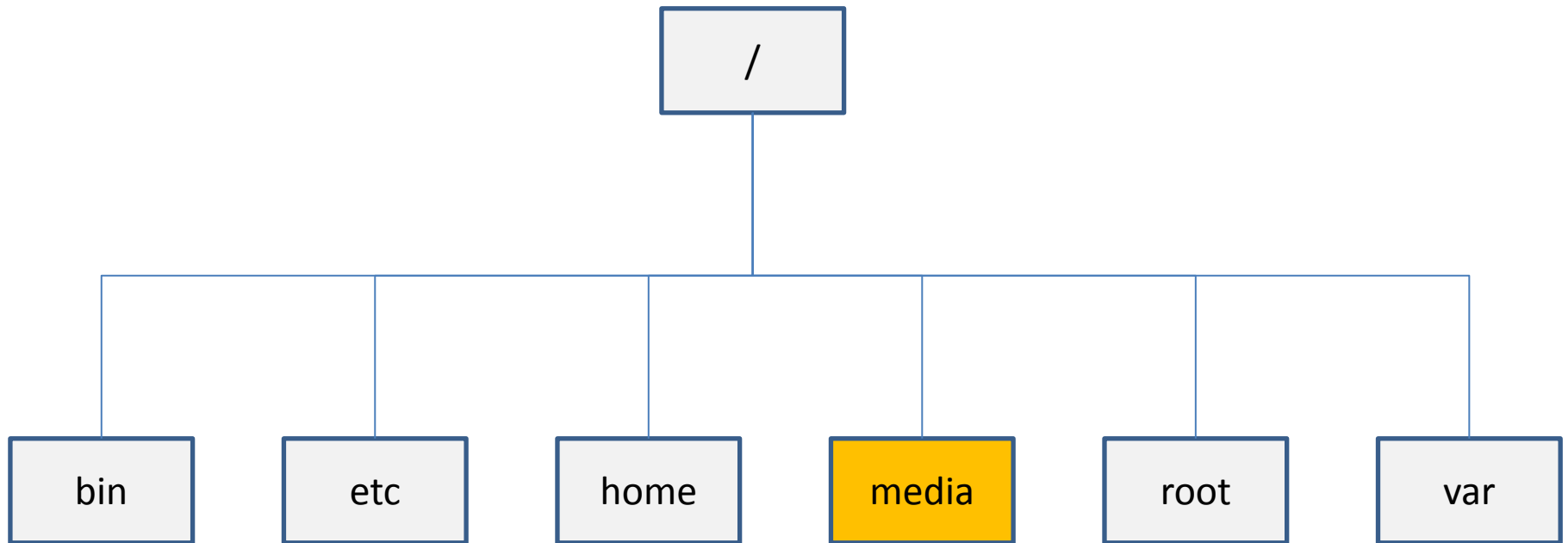
/etc: configuration files

1. Linux file system



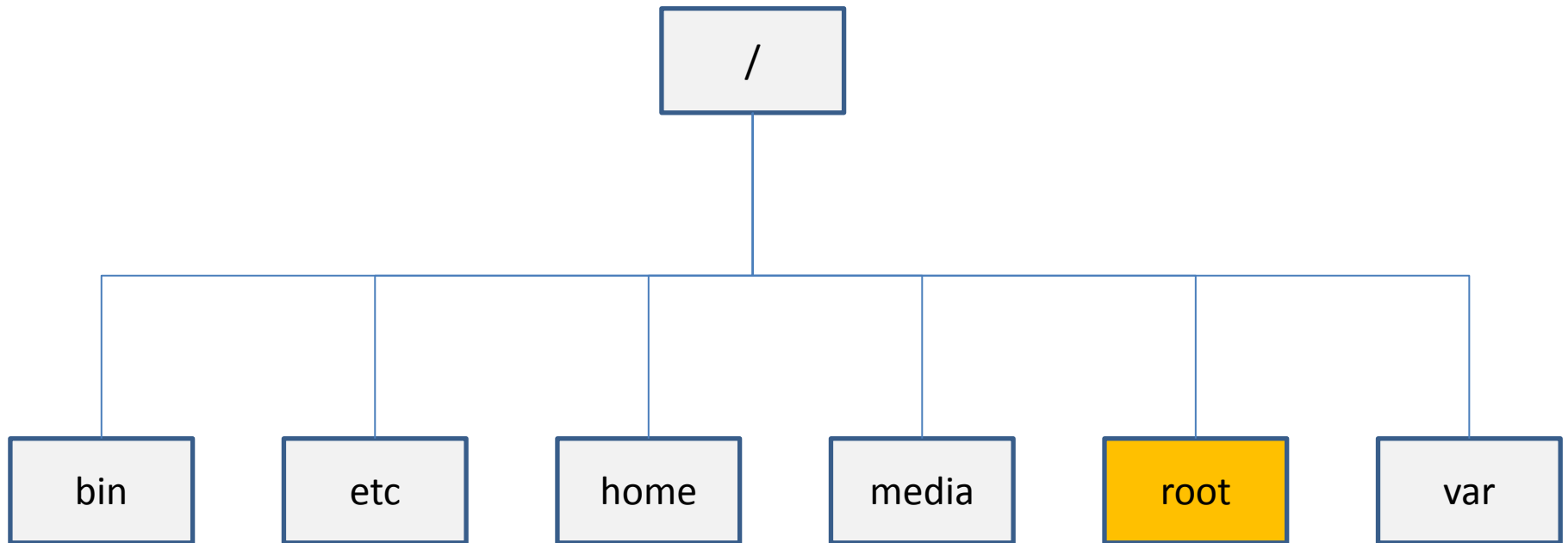
/home: the home-folders of each user

1. Linux file system



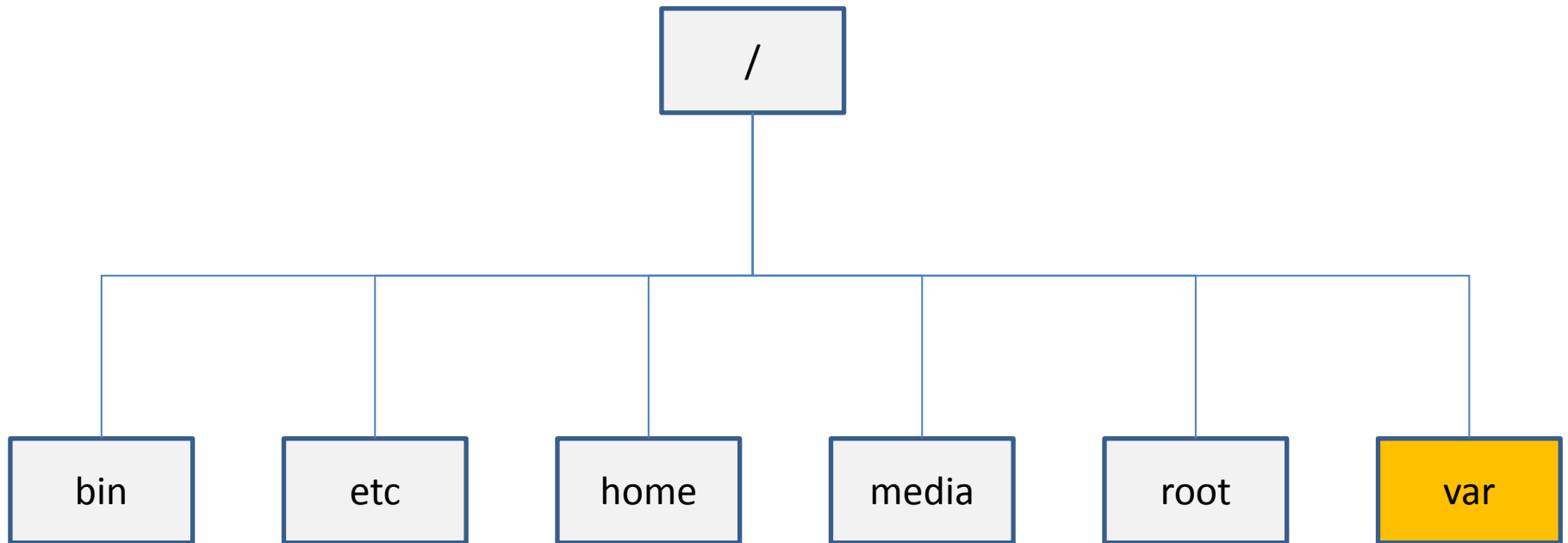
/media: mounted usb devices

1. Linux file system



/root: the home folder of the root-user

1. Linux file system



/var: temporary used files by programs

2. Most Important Commands

Command	Usage
pwd	Print working directory, shows the current folder
ls	Show folders and files of current folder or a specified folder
cd	Changes the current folder to another one
mkdir	Creates a folder in the current folder
touch	Creates a new empty file
cp	Copies a file or a folder into another folder
mv	Moves a file or a folder into another folder
rm	Removes a file or folder
rmdir	Removes a folder
cat	Shows the content of a file

2. Most Important Commands

Command	Usage
find	Searches for files
grep	Searches text in files
ps	Shows a snapshot of all processes
top	Shows all processes
kill	Kills a process
killall	Kills all processes with a given name pattern
tail	shows the end (the tail) of a file
tar	archiving/extracting files
du	filesize of files or folders
df	filesize of partitions
ln	creates a symbolic link
nano	starts terminal text-editor

3. File Permissions

-rw-rw-r-- 1 jan jan 59 Mar 13 23:55 halloworld.txt

0	1	2	3	4	5	6	7	8	
-	R	W	-	R	W	-	R	-	-
-: file d: folder l: link	jan can read	jan can write	Jan can not execute	The group „jan“ can read	The group „jan“ can write	The group „jan“ cannot execute	Anyone else can read	Anyone else cannot write	Anyone else cannot execute



User



Group



Other

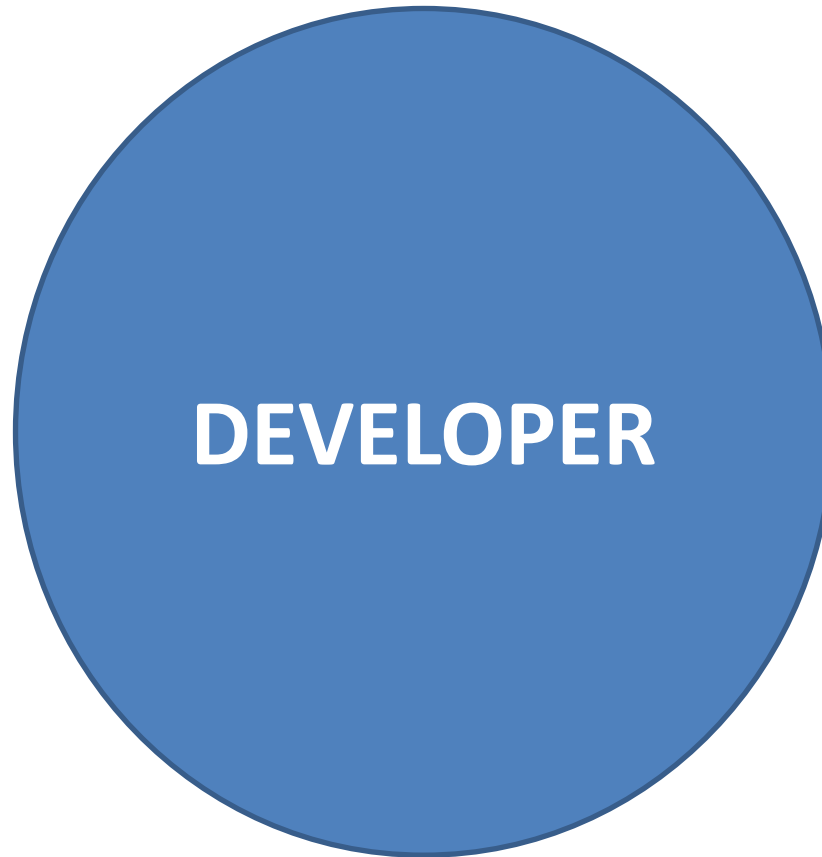
3. File Permissions

JAN

HANS

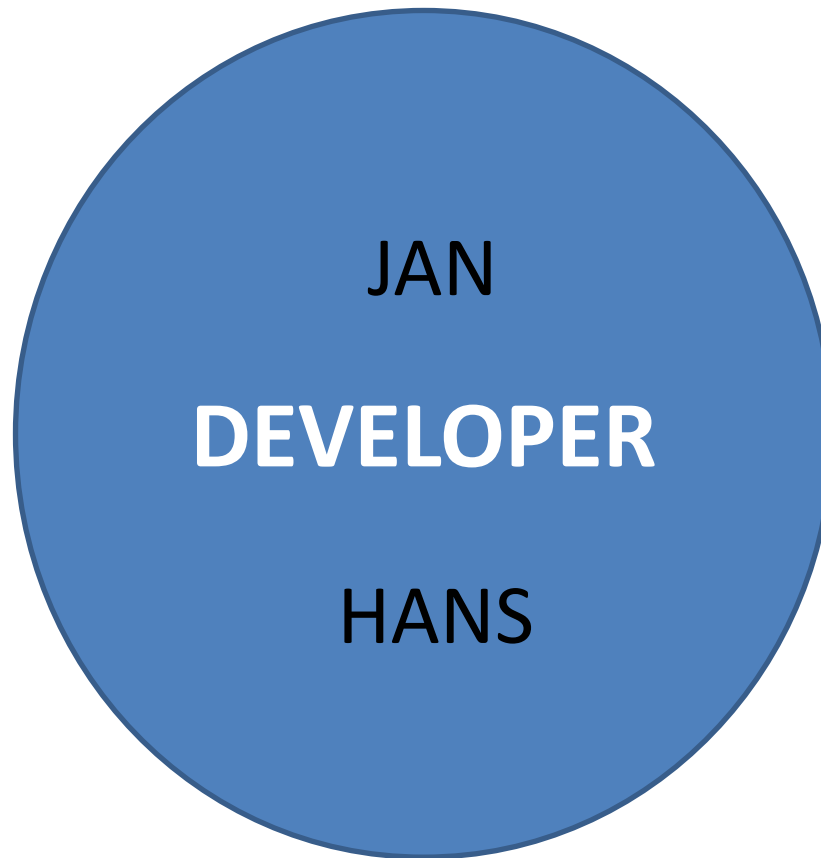
3. File Permissions

JAN



HANS

3. File Permissions



4. Package Manager

- Ubuntu/Debian/Slackware
 - .DEB Packages installed by **dpkg**
- Redhat/CentOS/SuSE
 - .RPM Packages installed by **rpm**

4. Package Manager

- .DEB Packages can be
 - Updated with **apt-get update**
 - Upgraded with **apt-get upgrade**
- **What is the difference between them?**

4. Package Manager

- .DEB Packages can be
 - Updated with *apt-get update*
 - Upgraded with *apt-get upgrade*
- **What is the difference between them?**
 - apt-get update updates the list of available packages and their versions
 - apt-get upgrade installs newer versions of packages you have
 - Therefore, run **apt-get update and apt-get upgrade together!**

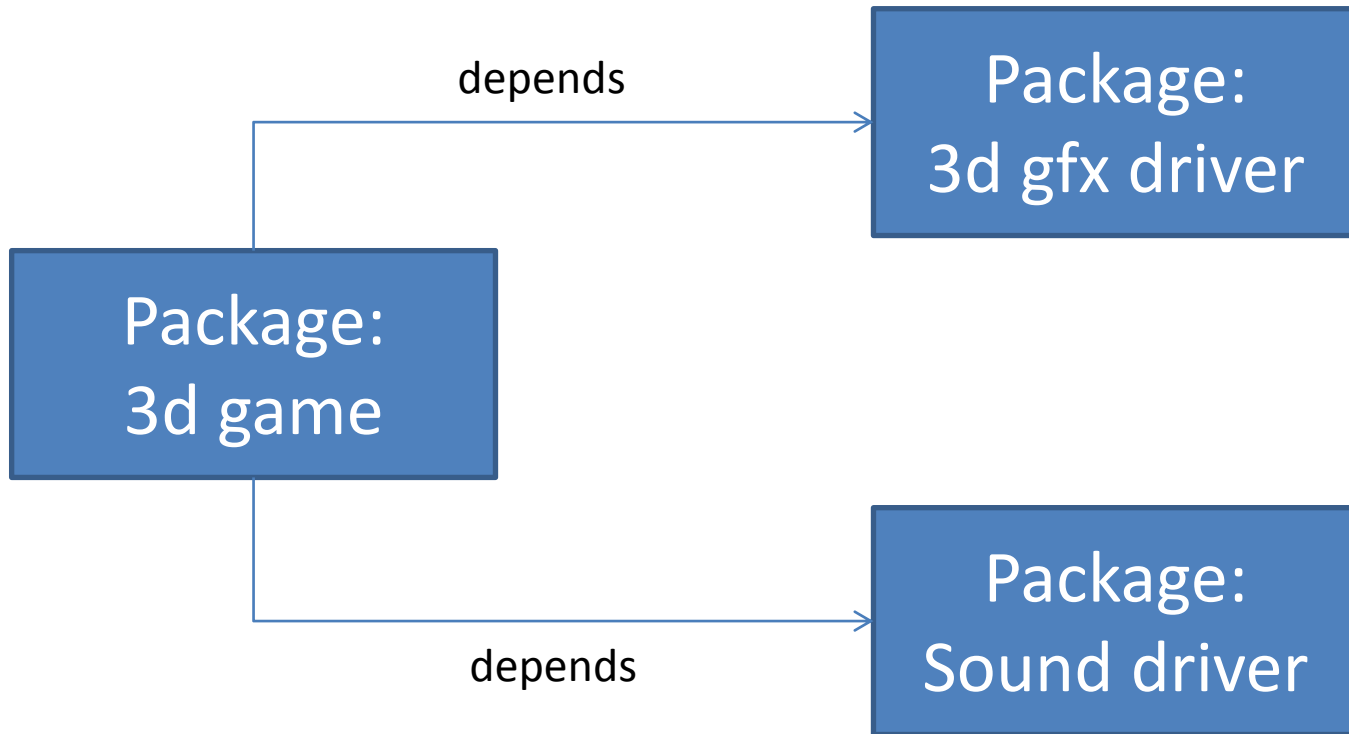
4. Package Manager

- old .DEB Packages can be removed with
 - *apt-get autoremove*
- potential .DEB packages can be found with
 - *apt-cache search*
- Installing, Updating, Upgrading and Removing packages is an exclusive operation
 - The file: */var/lib/dpkg/lock* will be created
 - Makes sure that different apts do not overwrite each other's changes

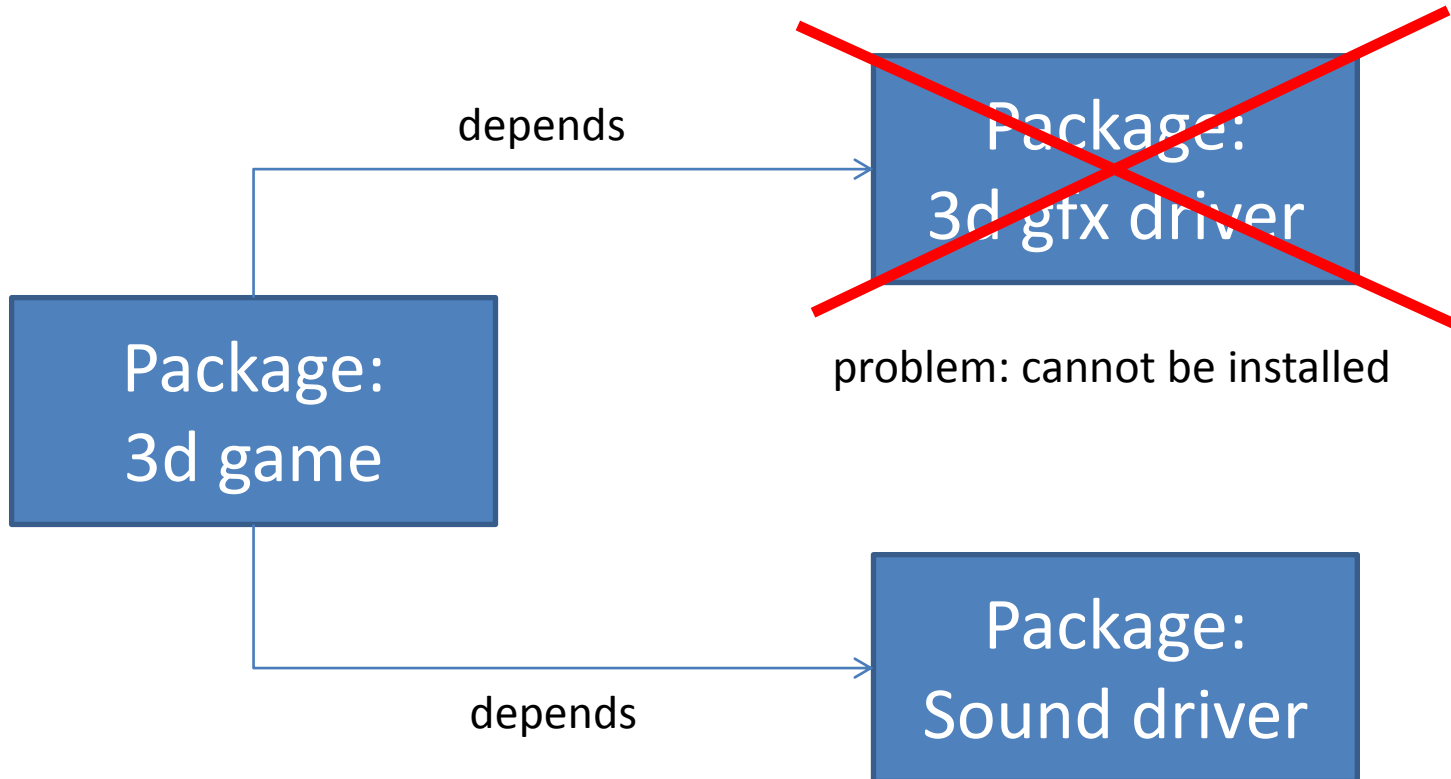
4. Package Manager

- **obsolete .DEB packages** can be
 - Removed with *apt-get remove*
 - Alternatively *dpkg -r*
- **unlisted .DEB packages** can be
 - Installed with *dpkg -i*

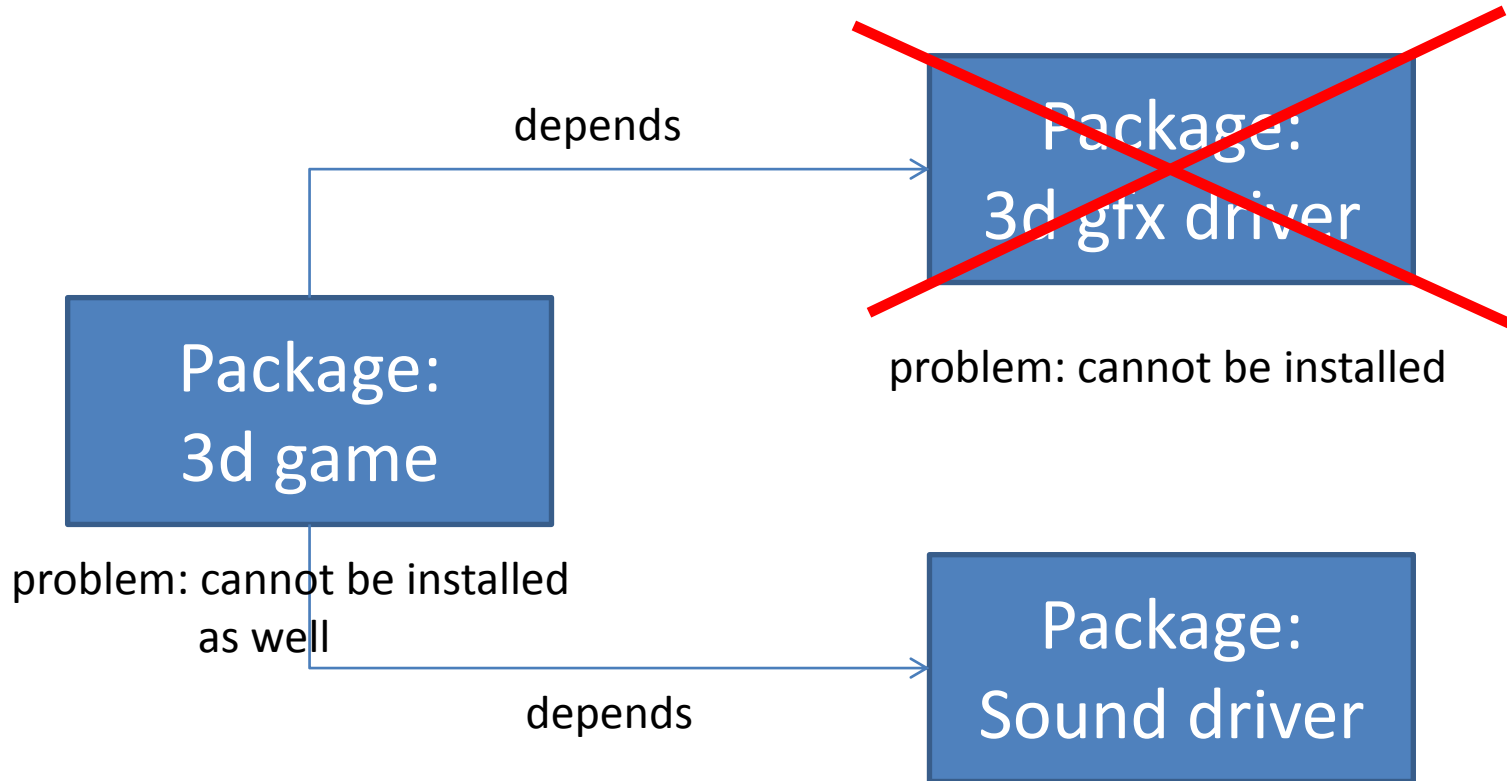
4. Package Manager



4. Package Manager



4. Package Manager



4. Package Manager

- **.DEB packages with unmet dependencies**
 - can be removed with `apt-get -f install`
- **.DEB packages with old dependencies**
 - can be optimized and upgraded with `apt-get dist-upgrade`