HT-6

1. Create regular users sulo and riku using useradd command (use options for creating home directory and sets bash as a default shell). Set passwords for both users. Then create users joonas and jani using adduser command.

```
user@AA3568-Ubuntu:~$ sudo useradd -m sulo -s /bin/bash
[sudo] password for user:
user@AA3568-Ubuntu:~$ ls /home/
sulo  ubuntu  user
user@AA3568-Ubuntu:~$ sudo useradd -m riku -s /bin/bash
user@AA3568-Ubuntu:~$ ls /home/
riku  sulo  ubuntu  user
user@AA3568-Ubuntu:~$
```

```
user@AA3568-Ubuntu:~$ sudo passwd sulo
New password:
Retype new password:
passwd: password updated successfully
user@AA3568-Ubuntu:~$ sudo passwd riku
New password:
Retype new password:
passwd: password updated successfully
user@AA3568-Ubuntu:~$
```

```
user@AA3568-Ubuntu:~$ sudo adduser joonas
Adding user `joonas' ...
Adding new group `joonas' (1005) ...
Adding new user `joonas' (1004) with group `joonas' ...
Creating home directory `/home/joonas' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for joonas
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
user@AA3568-Ubuntu:~$ ls /home/
joonas  riku  sulo  ubuntu  user
user@AA3568-Ubuntu:~$ sudo adduser jani
Adding user `jani' ...
Adding new group `jani' (1006) ...
Adding new user `jani' (1005) with group `jani' ...
Creating home directory `/home/jani' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for jani
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
```

2. Create group called testers and add this group as a primary group for all users created in previous task. Verify this by creating a file with user jani and check the owner group. In addition, test commands id and groups for any of previously created users and for your own user. In what groups does your user belong to? Find out what is the purpose of these groups.

```
user@AA3568-Ubuntu:~$ sudo groupadd testers
user@AA3568-Ubuntu:~$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,user,ubuntu
tty:x:5:syslog
disk:x:6:
```

```
testers:x:1007:
user@AA3568-Ubuntu:~$
```

```
user@AA3568-Ubuntu:~$ sudo usermod -g testers sulo
user@AA3568-Ubuntu:~$ groups sulo
sulo : testers
user@AA3568-Ubuntu:~$ sudo usermod -g testers riku
user@AA3568-Ubuntu:~$ sudo usermod -g testers joonas
user@AA3568-Ubuntu:~$ sudo usermod -g testers jani
```

```
user@AA3568-Ubuntu:~$ su - jani
Password:
jani@AA3568-Ubuntu:~$ touch testijani.txt
jani@AA3568-Ubuntu:~$ ls -l
total 0
-rw-r--r-- 1 jani testers 0 Feb 15 14:09 testijani.txt
jani@AA3568-Ubuntu:~$
```

```
user@AA3568-Ubuntu:~$ id sulo
uid=1002(sulo) gid=1007(testers) groups=1007(testers)
user@AA3568-Ubuntu:~$ groups
user adm cdrom sudo dip plugdev lxd
user@AA3568-Ubuntu:~$ groups sulo
sulo : testers
user@AA3568-Ubuntu:~$ id
uid=1000(user) gid=1000(user) groups=1000(user),4(adm),24(cdrom),27(sudo),30(dip),46(plugdev),116(lxd)
```

adm: Group adm is used for system monitoring tasks. Members of this group can read many log files in /var/log, and can use xconsole. Historically, /var/log was /usr/adm (and later /var/adm), thus the name of the group.

users: While Debian systems use the private user group system by default (each user has their own group), some prefer to use a more traditional group system, in which each user is a member of this group.

cdrom: This group can be used locally to give a set of users access to a CDROM drive and other optical drives.

sudo: Members of this group can execute any command with sudo or pkexec.

dip: The group's name stands for "Dial-up IP", and membership in dip allows you to use tools like ppp, dip, wvdial, etc. to dial up a connection. The users in this group cannot configure the modem, but may run the programs that make use of it.

plugdev: Allows members to mount (only with the options nodev and nosuid, for security reasons) and umount removable devices through pmount.

lxd: is a management API for dealing with LXC containers on Linux systems. It will perform tasks for any members of the local lxd group.

3. Create group called coders and set it as the primary group for user joonas, but let joonas still be a member of testers group.

```
user@AA3568-Ubuntu:~$ sudo addgroup coders
[sudo] password for user:
Adding group `coders' (GID 1008) ...
Done.
```

```
user@AA3568-Ubuntu:~$ sudo usermod -g coders -G testers joonas
```

4. Remove the user riku (remove also user's home directory) and remove also user jani without removing user's home directory. In addition, remove the group called coders.

```
user@AA3568-Ubuntu:~$ sudo userdel -r riku
userdel: group riku not removed because it is not the primary group of user riku.
userdel: riku mail spool (/var/mail/riku) not found
```

```
user@AA3568-Ubuntu:~$ sudo userdel jani
[sudo] password for user:
userdel: group jani not removed because it is not the primary group of user jani.
user@AA3568-Ubuntu:~$ cd /home
user@AA3568-Ubuntu:/home$ ls
jani  joonas  sulo  ubuntu  user
user@AA3568-Ubuntu:/home$ cd
user@AA3568-Ubuntu:~$ su - jani
su: user jani does not exist
```

5. Lock the password for user sulo. Verify the changes. After this, set the password as expired and login with user sulo (remember to remove the password lock before login). What happens?

```
user@AA3568-Ubuntu:~$ sudo passwd -l sulo
passwd: password expiry information changed.
user@AA3568-Ubuntu:~$ su - sulo
Password:
su: Authentication failure
user@AA3568-Ubuntu:~$
```

```
user@AA3568-Ubuntu:~$ sudo passwd -eu sulo
passwd: password expiry information changed.
user@AA3568-Ubuntu:~$ su - sulo
Password:
You are required to change your password immediately (administrator enforced)
Changing password for sulo.
Current password:
su: Authentication token manipulation error
user@AA3568-Ubuntu:~$ su - sulo
Password:
You are required to change your password immediately (administrator enforced)
Changing password for sulo.
Current password:
New password:
Retype new password:
Bad: new and old password are too similar
New password:
Retype new password:
sulo@AA3568-Ubuntu:~$
```

Salasana piti vaihtaa uuteen kirjautumisen yhteydessä.

6. Below is the presentation of a directory structure from fictional company including users from different groups. Create the presented directory structure, users and groups for the filesystem of your Ubuntu. Set file permissions for files and directories as described in the figure (Tip: use material from the next course title: File permissions). Verify that permissions work as intended and take screenshot from several different situations with different users. Important: Owner and group permissions can be set to be equal and other users should have permissions if needed (check the image for other permissions)!

```
user@AA3568-Ubuntu:~$ sudo mkdir /var/shares/projects
user@AA3568-Ubuntu:~$ sudo mkdir /var/shares/management
user@AA3568-Ubuntu:~$ sudo mkdir /var/shares/marketing
user@AA3568-Ubuntu:~$ cd /var
user@AA3568-Ubuntu:/var$ ls
backups  cache  crash  lib  local  lock  log  mail  opt  run  shares  snap  spool  tmp
user@AA3568-Ubuntu:/var$ cd shares
user@AA3568-Ubuntu:/var/shares$ ls
management  marketing  projects
```

```
user@AA3568-Ubuntu:/var/shares/projects$ sudo touch period_1_report.txt period_2_report.txt project_schedule.txt
```

```
user@AA3568-Ubuntu:/var/shares/management$ sudo touch list_of_emplyees.txt
```

```
user@AA3568-Ubuntu:/var/shares/marketing$ sudo touch seminars.txt marketing_policy.txt
```

Users added:

```
user@AA3568-Ubuntu:~$ sudo adduser mike
```

Groups:

```
user@AA3568-Ubuntu:~$ sudo groupadd managers
user@AA3568-Ubuntu:~$ sudo groupadd projects
user@AA3568-Ubuntu:~$ sudo groupadd marketing
```

```
user@AA3568-Ubuntu:/var/shares$ sudo chown jonathan:projects projects
user@AA3568-Ubuntu:/var/shares$ sudo chown nicky:marketing marketing
user@AA3568-Ubuntu:/var/shares$ ls
management  marketing  projects
user@AA3568-Ubuntu:/var/shares$ ls -l
total 12
drwxr-xr-x 2 mike     managers  4096 Feb 22 14:46 management
drwxr-xr-x 2 nicky    marketing 4096 Feb 22 14:46 marketing
drwxr-xr-x 2 jonathan projects  4096 Feb 22 14:44 projects
```

Permissions:

```
user@AA3568-Ubuntu:/var/shares$ sudo chmod 770 -R management
```

```
user@AA3568-Ubuntu:/var/shares$ sudo chmod 575 projects
```

```
user@AA3568-Ubuntu:/var/shares$ sudo chmod 557 marketing
```

```
user@AA3568-Ubuntu:/var/shares/projects$ sudo chmod 464 period_1_report.txt
user@AA3568-Ubuntu:/var/shares/projects$ sudo chmod 464 project_schedule.txt period_2_report.txt
```

```
user@AA3568-Ubuntu:/var/shares/marketing$ sudo chmod 464 seminars.txt
user@AA3568-Ubuntu:/var/shares/marketing$ sudo chmod 644 marketing_policy.txt
```

Examples

Nicky cannot read the management directory

```
mike@AA3568-Ubuntu:/var/shares/management$ ls -l
total 0
-rwxrwx--- 1 root root 0 Feb 22 14:46 list_of_emplyees.txt
```

```
nicky@AA3568-Ubuntu:~$ cd /var/shares/management/
-bash: cd: /var/shares/management/: Permission denied
```

Nicky cannot edit the seminars.txt because he only has a reding permission

```
nicky@AA3568-Ubuntu:/var/shares/marketing$ ls -l
total 0
-rw-r--r-- 1 root root 0 Feb 22 14:46 marketing_policy.txt
-r--rw-r-- 1 root root 0 Feb 22 14:46 seminars.txt
```

```
  [ File 'seminars.txt' is unwritable ]
^G Help    ^K Cut Text    ^J Justify     ^C Cur
```