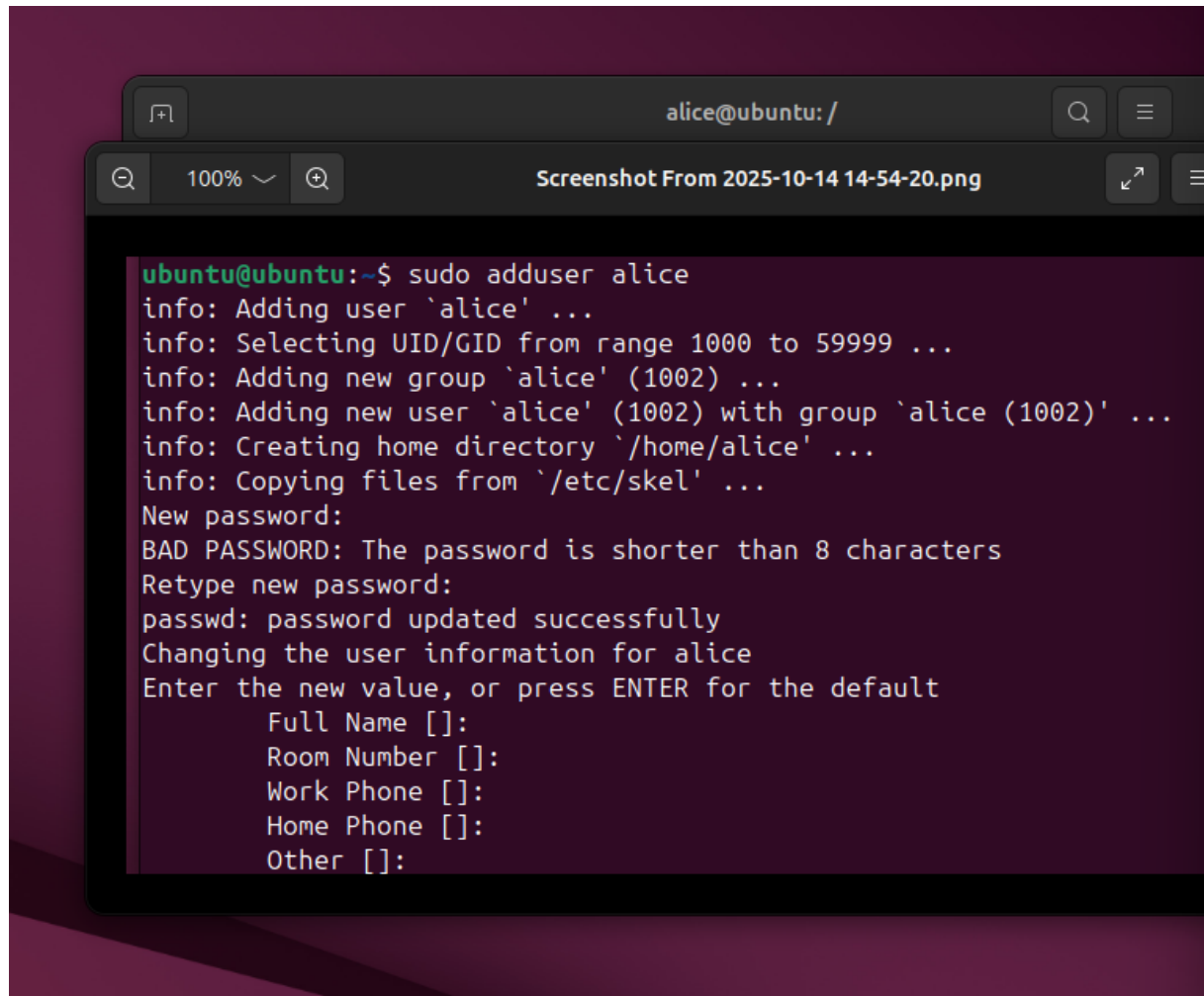


Task 1

1-alice (interactive creation with full prompts)

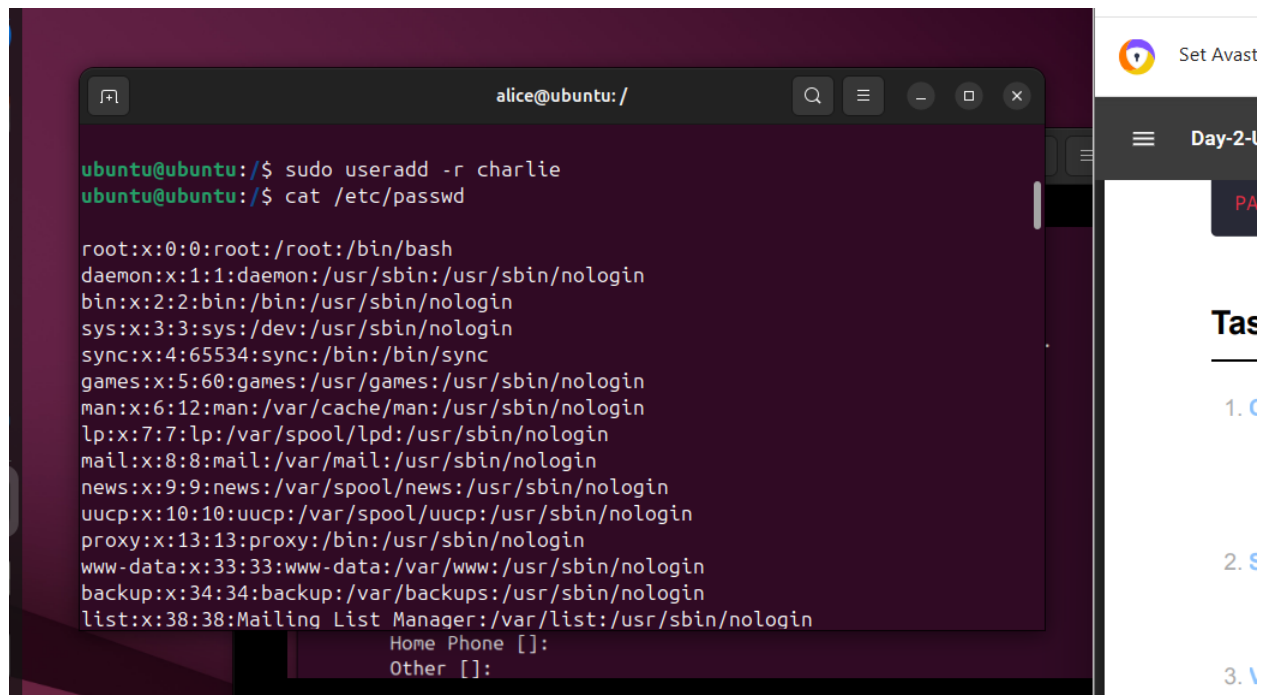
A screenshot of a terminal window titled 'Screenshot From 2025-10-14 14-54-20.png'. The terminal shows the command 'sudo adduser alice' being executed. The output includes several informational messages: 'info: Adding user `alice` ...', 'info: Selecting UID/GID from range 1000 to 59999 ...', 'info: Adding new group `alice` (1002) ...', 'info: Adding new user `alice` (1002) with group `alice (1002)` ...', 'info: Creating home directory `/home/alice` ...', and 'info: Copying files from `/etc/skel` ...'. It then prompts for a 'New password:', which is rejected as 'BAD PASSWORD: The password is shorter than 8 characters'. The user retypes the password, and the system confirms 'passwd: password updated successfully'. Finally, it prompts to 'Changing the user information for alice' and asks to 'Enter the new value, or press ENTER for the default' for fields: Full Name [], Room Number [], Work Phone [], Home Phone [], and Other [].

```
alice@ubuntu: /  
ubuntu@ubuntu:~$ sudo adduser alice  
info: Adding user `alice` ...  
info: Selecting UID/GID from range 1000 to 59999 ...  
info: Adding new group `alice` (1002) ...  
info: Adding new user `alice` (1002) with group `alice (1002)` ...  
info: Creating home directory `/home/alice` ...  
info: Copying files from `/etc/skel` ...  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
Retype new password:  
passwd: password updated successfully  
Changing the user information for alice  
Enter the new value, or press ENTER for the default  
Full Name []:  
Room Number []:  
Work Phone []:  
Home Phone []:  
Other []:
```

2-bob (with custom home directory /opt/users/bob)

```
alice@ubuntu: /  
-o, --non-unique          allow to create users with duplicate  
                           (non-unique) UID  
-p, --password PASSWORD  encrypted password of the new account  
-r, --system              create a system account  
-R, --root CHROOT_DIR    directory to chroot into  
-P, --prefix PREFIX_DIR  prefix directory where are located the /etc/* f  
iles  
-s, --shell SHELL        login shell of the new account  
-u, --uid UID             user ID of the new account  
-U, --user-group          create a group with the same name as the user  
-Z, --selinux-user SEUSER use a specific SEUSER for the SELinux user mapp  
ing  
    --selinux-range SERANGE use a specific MLS range for the SELinux user m  
apping  
    --extrausers           Use the extra users database  
ubuntu@ubuntu:/home$ sudo useradd -d /opt/users/bob bob
```

3-charlie (system user for services)



```
installer:x:1001:1001:Ubuntu:/home/installer:/usr/bin/subiquity-shell
alice:x:1002:1002:,,,:/home/alice:/bin/bash
bob:x:1003:1003::/opt/users/bob:/bin/sh
charlie:x:997:983::/home/charlie:/bin/sh
```

set password for alice and bob

```
alice@ubuntu:/$ su ubuntu

ubuntu@ubuntu:/$
ubuntu@ubuntu:/$ sudo passwd alice
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
ubuntu@ubuntu:/$ sudo passwd bob
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
ubuntu@ubuntu:/$
```

Home Phone []:
Other []:

Force alice to change password at next login

```
ubuntu@ubuntu:~$ sudo passwd -e alice
passwd: password changed.
ubuntu@ubuntu:~$ sudo su alice
You are required to change your password immediately (administrator enforced).
Changing password for alice.
Current password:
New password:
Retype new password:
Sorry, passwords do not match.
New password:
Retype new password:
alice@ubuntu:/home/ubuntu$
```

Display alice's entry from /etc/passwd

```
Retype new password:
alice@ubuntu:/home/ubuntu$ cat /etc/passwd |grep "alice"
alice:x:1002:1002:,,,:/home/alice:/bin/bash
alice@ubuntu:/home/ubuntu$
```

Show bob's password aging information using chage
-l bob

```
alice:x:1002:1002:,,,:/home/alice:/bin/bash
alice@ubuntu:/home/ubuntu$ exit
exit
ubuntu@ubuntu:~$ sudo chage -l bob
Last password change           : Oct 14, 2025
Password expires                : never
Password inactive               : never
Account expires                 : never
Minimum number of days between password change : 0
Maximum number of days between password change : 99999
Number of days of warning before password expires : 7
ubuntu@ubuntu:~$
```

4. :
developers (regular group)

```
charlie:x:983:
ubuntu@ubuntu:~$ sudo groupadd developpers
ubuntu@ubuntu:~$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,ubuntu,installer
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:installer
fax:x:21:
voice:x:22:
cdrom:x:24:ubuntu,installer
```

project-team (using addgroup command)

```
ubuntu@ubuntu:~$ sudo addgroup project-team
info: Selecting GID from range 1000 to 59999 ...
info: Adding group `project-team' (GID 1005) ...
ubuntu@ubuntu:~$
```

```
installer:x:1001:
alice:x:1002:
bob:x:1003:
charlie:x:983:
developpers:x:1004:
project-team:x:1005:
ubuntu@ubuntu:~$
```

Add alice to both developers and project-team

```
exit
ubuntu@ubuntu:~$ sudo usermod -aG developers alice
ubuntu@ubuntu:~$ sudo usermod -aG project-team alice
ubuntu@ubuntu:~$ cat /etc/group
root:x:0:
Desktop Documents Downloads Music Pictures Public snap Templates Videos
ubuntu@ubuntu:~$ groups alice
alice : alice users developers project-team
ubuntu@ubuntu:~$
```

Add bob to developers only

```
alice : alice users developers project-team
ubuntu@ubuntu:~$ sudo usermod -aG developers bob
ubuntu@ubuntu:~$ groups bob
bob : bob developers
ubuntu@ubuntu:~$
```

Make developers alice's primary group

```
ubuntu@ubuntu:~$ sudo usermod -g developers alice
ubuntu@ubuntu:~$ cd /home
ubuntu@ubuntu:/home$ ll
total 0
drwxr-xr-x  1 root    root      100 Oct 14 13:43 ./
drwxr-xr-x  1 root    root      260 Oct 14 13:38 ../
drwxr-x---  4 alice    developers 160 Oct 14 15:08 alice/
drwxr-x---  3 installer installer 120 Oct 14 13:38 installer/
drwxr-x--- 17 ubuntu   ubuntu    440 Oct 14 15:09 ubuntu/
ubuntu@ubuntu:/home$
```

Use groups command to show alice's groups

```
ubuntu@ubuntu:/home$ groups alice
alice : developers users project-team
ubuntu@ubuntu:/home$
```

Use id command to display bob's UID and GID information

```
ubuntu@ubuntu:/home$ id alice
uid=1002(alice) gid=1004(developers) groups=1004(developers),100(users),1004(project-team)
ubuntu@ubuntu:/home$ id bob
uid=1003(bob) gid=1003(bob) groups=1003(bob),1004(developers)
ubuntu@ubuntu:/home$
```

=====

=====

=====

Part C: File Permissions and Ownership

Create directory /tmp/lab1_test

```
ubuntu@ubuntu:/tmp$ mkdir -p /tmp/lab1_test
ubuntu@ubuntu:/tmp$ cd /tmp
ubuntu@ubuntu:/tmp$ ls
lab1_test
```

Create file /tmp/lab1_test/data.txt with some content

```
ubuntu@ubuntu:/tmp$ cd lab1_test/
ubuntu@ubuntu:/tmp/lab1_test$ cat > data.txt
hello from data text
hello
hello

^C
ubuntu@ubuntu:/tmp/lab1_test$ cat data.txt
hello from data text
hello
hello

ubuntu@ubuntu:/tmp/lab1_test$
```

Create file /tmp/lab1_test/script.sh

```

ubuntu@ubuntu:/tmp/lab1_test$ vi /tmp/lab1_test/scripts.sh
ubuntu@ubuntu:/tmp/lab1_test$ ll /tmp/lab1_test/scripts.sh
-rw-rw-r-- 1 ubuntu ubuntu 0 Oct 14 15:42 /tmp/lab1_test/scripts.sh
ubuntu@ubuntu:/tmp/lab1_test$ chmod +x scripts.sh
ubuntu@ubuntu:/tmp/lab1_test$ vi /tmp/lab1_test/scripts.sh
ubuntu@ubuntu:/tmp/lab1_test$ chmod +x scripts.sh
ubuntu@ubuntu:/tmp/lab1_test$ ll /tmp/lab1_test/scripts.sh
-rwxrwxr-x 1 ubuntu ubuntu 0 Oct 14 15:42 /tmp/lab1_test/scripts.sh*
ubuntu@ubuntu:/tmp/lab1_test$ nano /tmp/lab1_test/scripts.sh
ubuntu@ubuntu:/tmp/lab1_test$

```

Set data.txt permissions to rw-r--r--

Set script.sh permissions to rwxr-xr-x

```

chmod: cannot access 'data.txt': No such file or directory
ubuntu@ubuntu:/tmp/lab1_test$ chmod 644 data.txt
ubuntu@ubuntu:/tmp/lab1_test$ chmod 755 scripts.sh
ubuntu@ubuntu:/tmp/lab1_test$ ll
total 8
drwxrwxr-x 2 ubuntu ubuntu 80 Oct 14 15:44 ./
drwxrwxrwt 17 root root 380 Oct 14 15:37 ../
-rw-r--r-- 1 ubuntu ubuntu 34 Oct 14 15:39 data.txt
-rwxr-xr-x 1 ubuntu ubuntu 26 Oct 14 15:44 scripts.sh*
ubuntu@ubuntu:/tmp/lab1_test$

```

Change owner of data.txt to alice and group to developers

Change owner of entire /tmp/lab1_test directory to bob and group to project-team

```
ubuntu@ubuntu:/tmp/lab1_test$ sudo chown alice:devellopers data.txt
ubuntu@ubuntu:/tmp/lab1_test$ ll
total 4
drwxrwxr-x  2 ubuntu ubuntu      80 Oct 14 15:52 ./
drwxrwxrwt 17 root    root      380 Oct 14 15:37 ../
-rw-rw-r--  1 alice   devellopers  0 Oct 14 15:52 data.txt
-rwxr-xr-x  1 ubuntu ubuntu     26 Oct 14 15:44 scripts.sh*
```

```
ubuntu@ubuntu:/tmp/lab1_test$ sudo chown -R bob:project-team /tmp/lab1_test
ubuntu@ubuntu:/tmp/lab1_test$ cd ..
ubuntu@ubuntu:/tmp$ ll
total 8
drwxrwxrwt 17 root    root      380 Oct 14 15:37 ../
drwxr-xr-x  1 root    root      260 Oct 14 13:38 ../
drwxrwxrwt  2 root    root       40 Oct 14 13:38 .font-unix/
drwxrwxrwt  2 root    root       60 Oct 14 13:38 .ICE-unix/
drwxrwxr-x  2 bob     project-team  80 Oct 14 15:52 lab1_test/
```

Part D: Verification and Testing

Switch to alice user (su - alice)

```
ubuntu@ubuntu:/tmp$ cd ./
ubuntu@ubuntu:/tmp$ su alice
Password:
alice@ubuntu:/tmp$
```

- Use `ls`
- Show g

Try to read data.txt

```
alice@ubuntu:/tmp$ cat > data.txt
hello
hello
hello
^C
alice@ubuntu:/tmp$ cat data.txt
hello
hello
hello
alice@ubuntu:/tmp$
```

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Try to execute script.sh

```

systemd-private-br43a0dd218d4c5d9ee1e49d7e398236-upower.service-dezmcs
alice@ubuntu:/tmp$ cd lab1_test/
alice@ubuntu:/tmp/lab1_test$ ls
data.txt  scripts.sh
alice@ubuntu:/tmp/lab1_test$ ./scripts.sh
/tmp/lab1_test
total 4
drwxrwxr-x  2 bob  project-team  80 Oct 14 15:52 .
drwxrwxrwt 17 root  root          400 Oct 14 15:59 ..
-rw-rw-r--  1 bob  project-team   0 Oct 14 15:52 data.txt
-rwxr-xr-x  1 bob  project-team  26 Oct 14 15:44 scripts.sh
hello
alice@ubuntu:/tmp/lab1_test$

```

11.

Use `ls -la /tmp/lab1_test` to show all permissions and ownership

```

alice@ubuntu:/tmp/lab1_test$ ls -la /tmp/lab1_test/
total 4
drwxrwxr-x  2 bob  project-team  80 Oct 14 15:52 .
drwxrwxrwt 17 root  root          400 Oct 14 15:59 ..
-rw-rw-r--  1 bob  project-team   0 Oct 14 15:52 data.txt
-rwxr-xr-x  1 bob  project-team  26 Oct 14 15:44 scripts.sh
alice@ubuntu:/tmp/lab1_test$

```

11.

Show group memberships for all created users

```
alice@ubuntu:/tmp/lab1_test$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,ubuntu,installer
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:installer
fax:x:21:
voice:x:22:
cdrom:x:24:ubuntu,installer
```

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11.

Document what works and what doesn't

```
alice@ubuntu:/tmp/lab1_test$ ls -la
total 4
drwxrwxr-x  2 bob  project-team  80 Oct 14 15:52 .
drwxrwxrwt 17 root  root         400 Oct 14 15:59 ..
-rw-rw-r--  1 bob  project-team   0 Oct 14 15:52 data.txt
-rwxr-xr-x  1 bob  project-team  26 Oct 14 15:44 scripts.sh
alice@ubuntu:/tmp/lab1_test$
```

data.txt -> doesnot have excute so it doesn't work
we can read the file only

scripts.sh-> have execute so it can read it and run it