

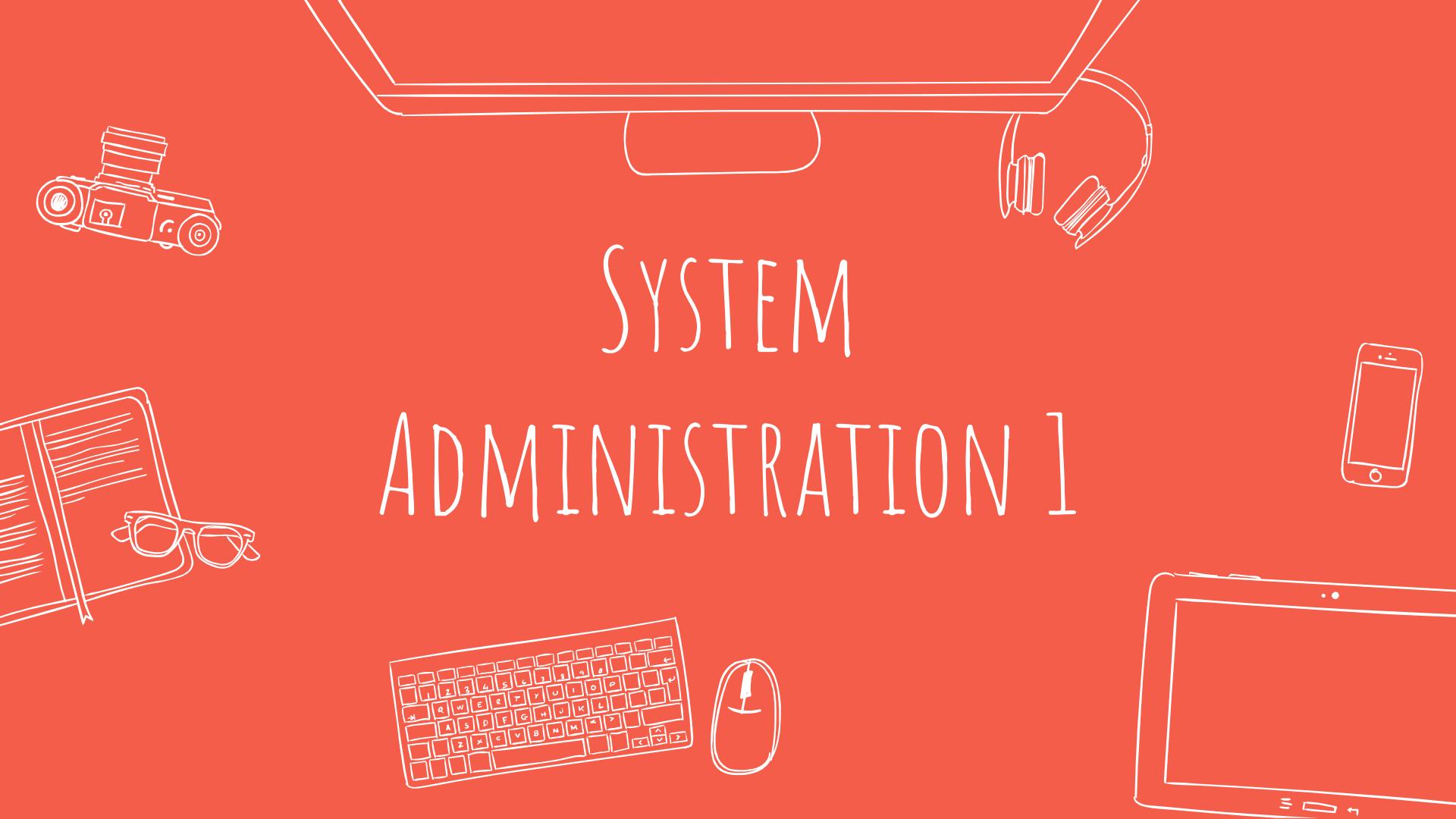


HELLO!

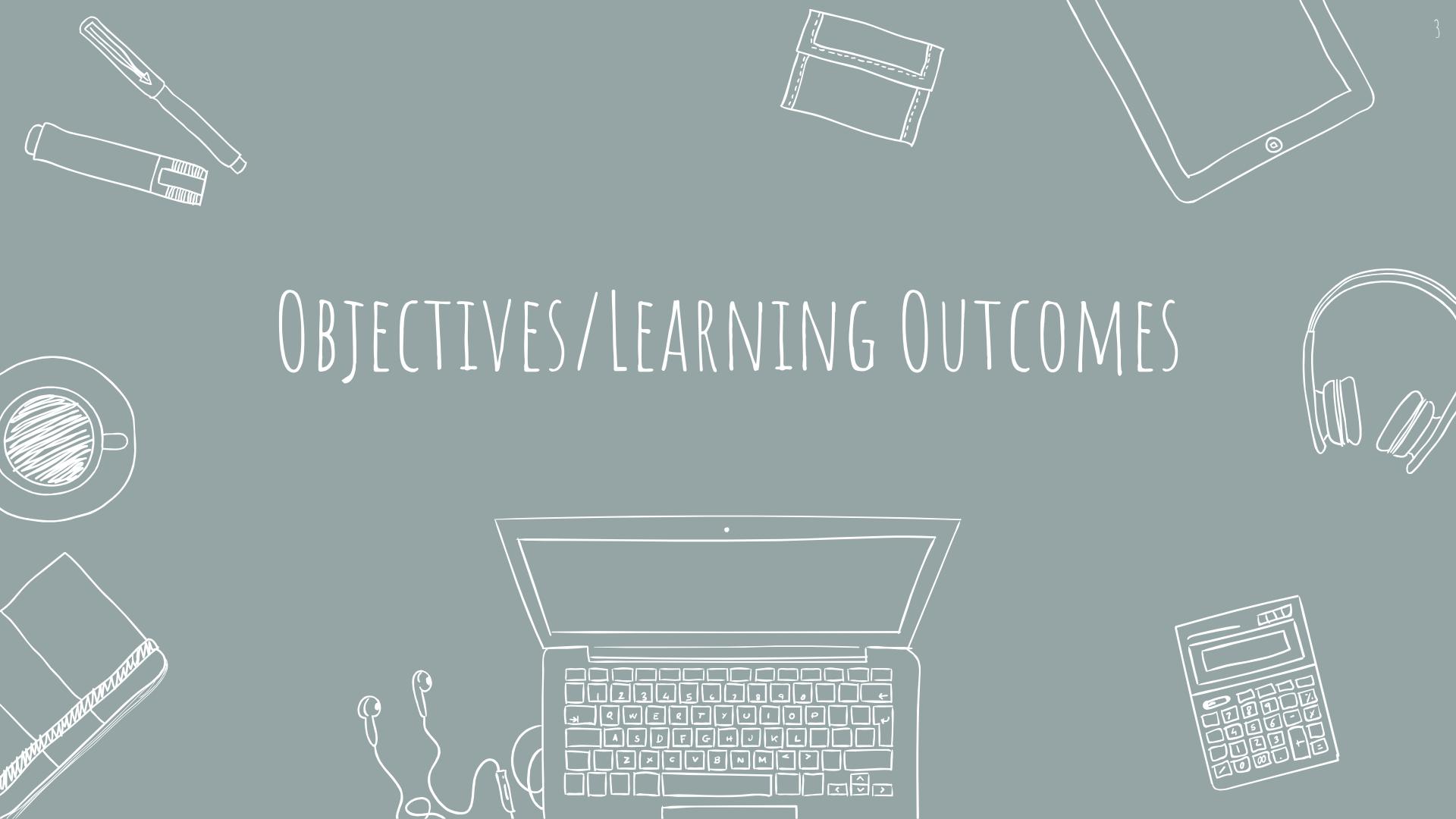
Sean Sanders

I am here because I love to give technology presentations.

SYSTEM ADMINISTRATION 1



OBJECTIVES/LEARNING OUTCOMES



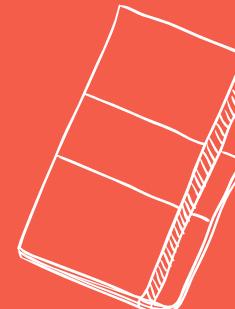
Intro To Systems Administration

1



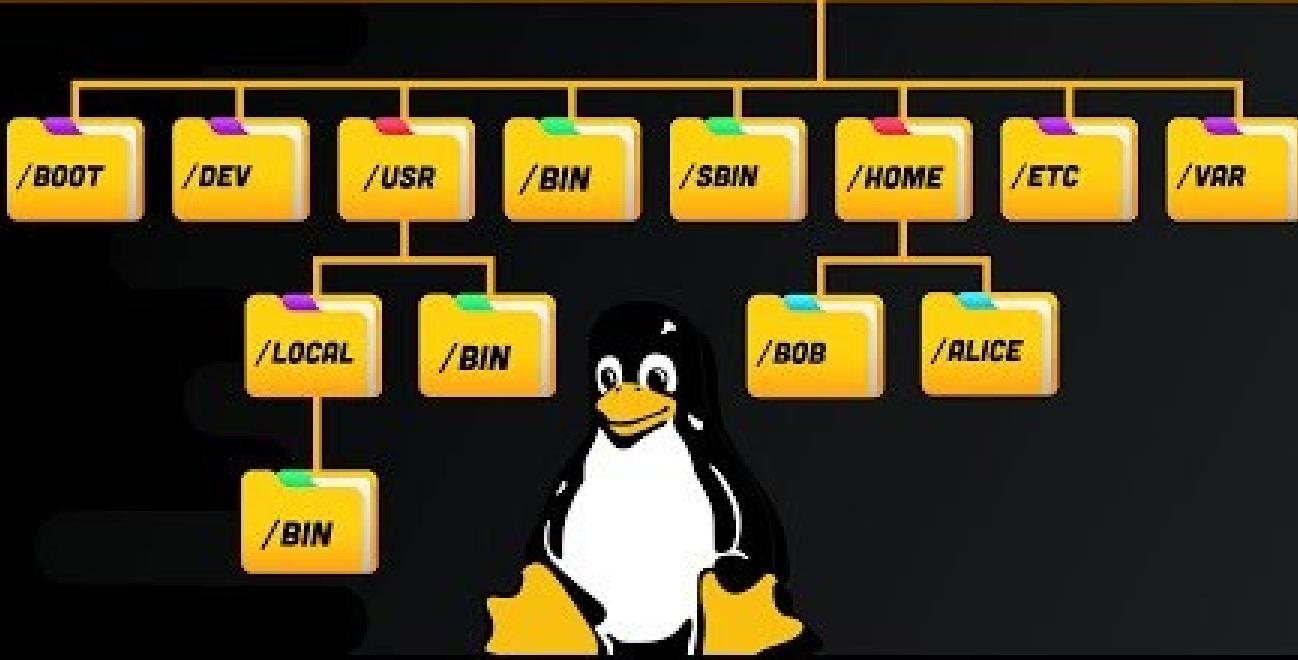


WHAT DID YOU LEARN/TAKE
AWAY FROM THE VIDEO?



LINUX FILE SYSTEM

100 SECONDS OF /





WHAT DID YOU LEARN/TAKE
AWAY FROM THE VIDEO?



WHAT TO FOCUS ON?

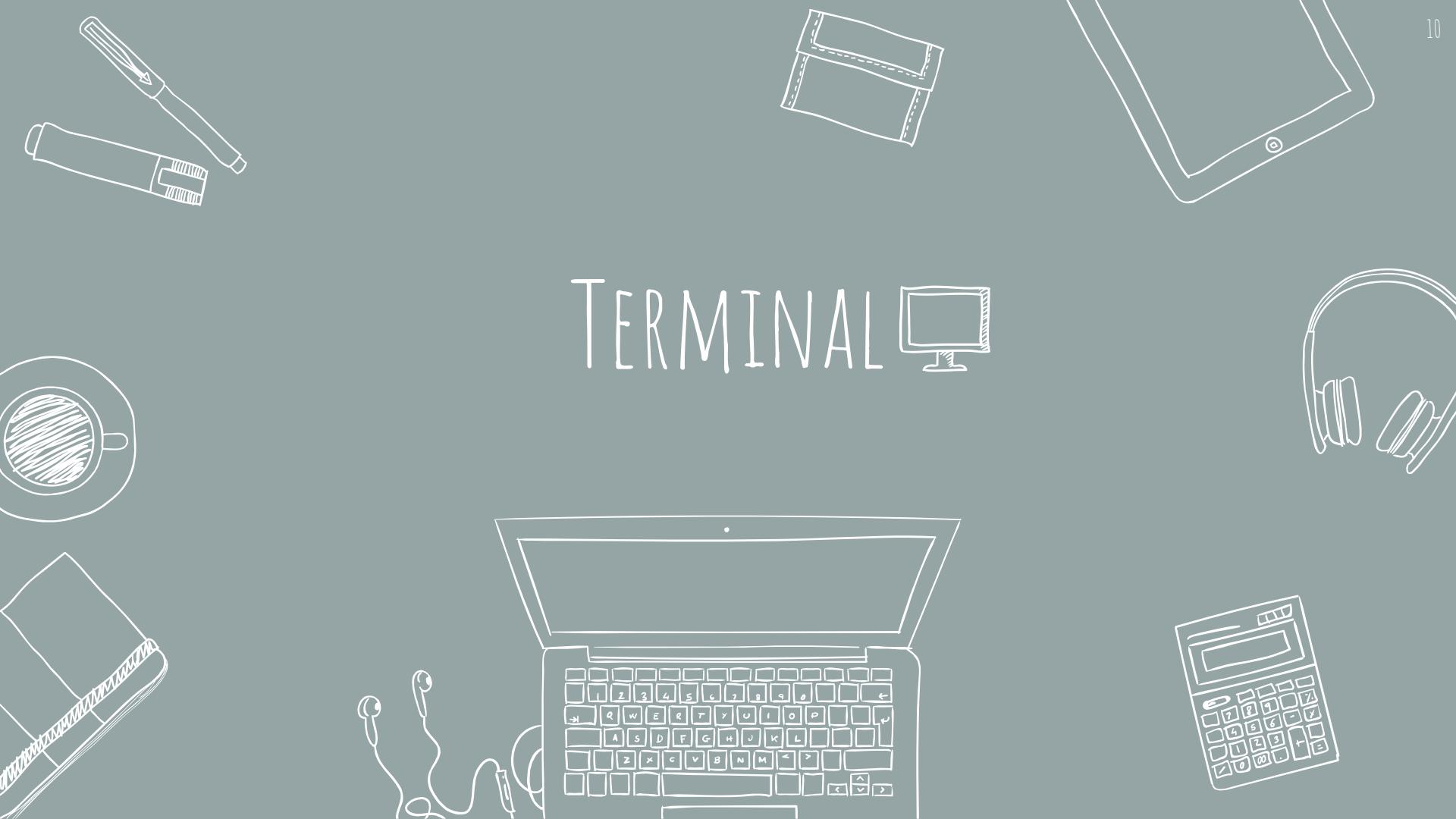
1. Var

- Variable files

1. Root

- Located in home directory

TERMINAL





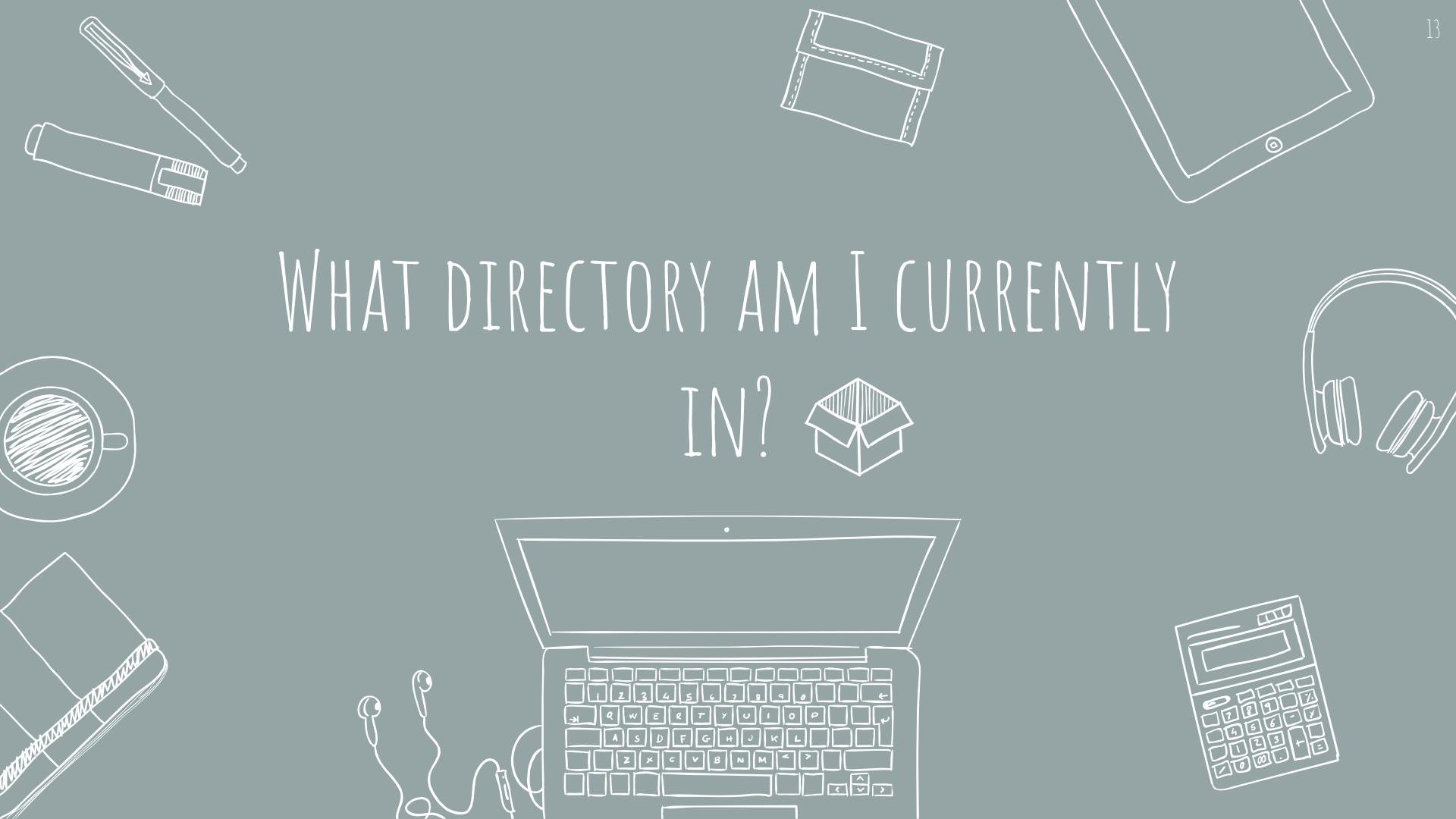
```
gencyber@k-sam:~$
```

DOLLAR SIGN (\$) MEANS YOU ARE A NORMAL USER
~ SIGN INDICATES YOU ARE AT THE ROOT FOLDER

COMMANDS WE WILL DISCUSS

- ✖ Listing contents of a directory
- ✖ File system Navigation
- ✖ Adding/Removing users
- ✖ Adding/Removing groups

WHAT DIRECTORY AM I CURRENTLY
IN?





PWD(1)

User Commands

PWD(1)

NAME

pwd - print name of current/working directory

SYNOPSIS

pwd [OPTION]...

DESCRIPTION

Print the full filename of the current working directory.

-L, --logical

use PWD from environment, even if it contains symlinks

-P, --physical

avoid all symlinks

--help display this help and exit

--version

output version information and exit

If no option is specified, **-P** is assumed.

NOTE: your shell may have its own version of **pwd**, which usually supersedes the version



PRINT NAME OF CURRENT WORKING DIRECTORY

pwd

```
gencyber@k-sam:~$ pwd  
/home/gencyber
```



SEARCHING FOR HELP

man [option] [section number] [command name]

option – the search result output

section number – the section in which to look for the man page.

command name – the name of the command which man page you want to see.

man ls

LS(1)

User Commands

LS(1)

NAME

ls - list directory contents

SYNOPSIS

ls [OPTION]... [FILE]...

DESCRIPTION

List information about the FILEs (the current directory by default). Sort entries alphabetically if none of **-cftuvSUX** nor **--sort** is specified.

Mandatory arguments to long options are mandatory for short options too.

-a, --all

do not ignore entries starting with .

-A, --almost-all

do not list implied . and ..

--author

with **-l**, print the author of each file

LIST DIRECTORY CONTENTS

LIST CONTENT

ls

blacklist.txt	games	histkeep3.txt	mods	screenshots
Desktop	gencyber.py.1	histkeep.txt	Music	server.properties
Documents	get-docker.sh	index.html	Pictures	Templates
Downloads	histkeep2.txt	minecraft-starwars	Public	Videos

ls -la

LIST CONTENT CONTD.

```
total 188
drwxr-xr-x 19 gencyber gencyber 4096 Jun 14 2021 .
drwxr-xr-x  3 root      root     4096 Jun  6 2021 ..
-rw-----  1 gencyber gencyber  6898 Jun  2 09:02 .bash_history
-rw-r--r--  1 gencyber gencyber   220 Jun  6 2021 .bash_logout
-rw-r--r--  1 gencyber gencyber 3771 Jun  6 2021 .bashrc
-rw-r--r--  1 gencyber gencyber    51 Jun  6 2021 blacklist.txt
drwx----- 14 gencyber gencyber 4096 Jun 12 2021 .cache
drwx----- 15 gencyber gencyber 4096 Mar 26 23:31 .config
drwxr-xr-x  3 gencyber gencyber 4096 Jun 14 2021 Desktop
drwxr-xr-x  2 gencyber gencyber 4096 Jun  6 2021 Documents
drwxr-xr-x  2 gencyber gencyber 4096 Jun  8 2021 Downloads
drwxr-xr-x  3 gencyber gencyber 4096 Jun  6 2021 games
-rw-rw-r--  1 gencyber gencyber 31088 Jun 13 2021 gencyber.py.1
-rw-rw-r--  1 gencyber gencyber 14750 Jun  6 2021 get-docker.sh
drwx-----  3 gencyber gencyber 4096 Jun  6 2021 .gnupg
-rw-rw-r--  1 gencyber gencyber  6567 Jun 12 2021 histkeep2.txt
-rw-rw-r--  1 gencyber gencyber  5237 Jun 12 2021 histkeep3.txt
-rw-rw-r--  1 gencyber gencyber  4686 Jun 12 2021 histkeep.txt
-rw-rw-r--  1 gencyber gencyber 10918 May 28 2021 index.html
drwx-----  4 gencyber gencyber 4096 Jun  6 2021 .local
drwxrwxr-x  4 gencyber gencyber 4096 Jun  7 2021 minecraft-starwars
drwxr-xr-x  2 gencyber gencyber 4096 Jun  6 2021 mods
drwx-----  5 gencyber gencyber 4096 Jun  6 2021 .mozilla
drwxr-xr-x  2 gencyber gencyber 4096 Jun  6 2021 Music
```

LOGIN TO YOUR DEVICE

Steps:

1. Login to: <https://cdr-vcenter.cse.buffalo.edu/>
2. Use the credentials in the back of your name tags to login.

EXERCISE (FOLLOW ALONG)

1. `pwd`
2. `ls`
3. `ls -la`

CHANGE DIRECTORY

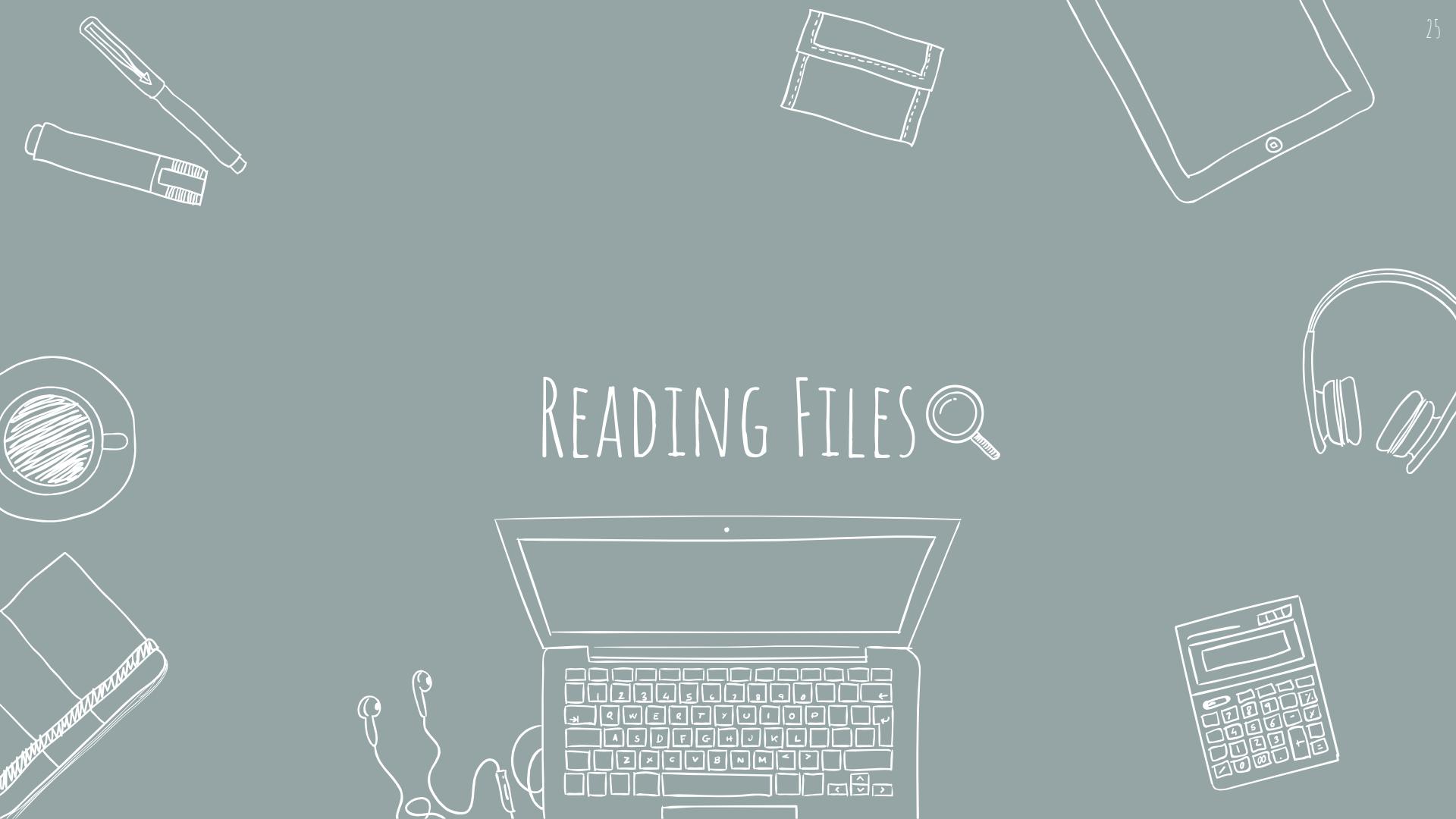


cd /var
ls /log

CHANGE DIRECTORY

alternatives.log	btmp	hp	ubuntu-adantage.log
alternatives.log.1	bttmp.1	installer	ubuntu-adantage.log.1
alternatives.log.2.gz	cups	journal	ubuntu-adantage.log.2.gz
alternatives.log.3.gz	dist-upgrade	kern.log	ubuntu-adantage.log.3.gz
apt	dmesg	kern.log.1	ubuntu-adantage.log.4.gz
auth.log	dmesg.0	kern.log.2.gz	unattended-upgrades
auth.log.1	dmesg.1.gz	kern.log.3.gz	vmware-network.1.log
auth.log.2.gz	dmesg.2.gz	kern.log.4.gz	vmware-network.2.log
auth.log.3.gz	dmesg.3.gz	lastlog	vmware-network.3.log
auth.log.4.gz	dmesg.4.gz	private	vmware-network.4.log
boot.log	dpkg.log	speech-dispatcher	vmware-network.5.log
boot.log.1	dpkg.log.1	syslog	vmware-network.log
boot.log.2	dpkg.log.2.gz	syslog.1	vmware-tools-upgrader.log
boot.log.3	dpkg.log.3.gz	syslog.2.gz	vmware-vmsvc-root.1.log
boot.log.4	dpkg.log.4.gz	syslog.3.gz	vmware-vmsvc-root.2.log
boot.log.5	faillog	syslog.4.gz	vmware-vmsvc-root.3.log
boot.log.6	fontconfig.log	syslog.5.gz	vmware-vmsvc-root.log
boot.log.7	gdm3	syslog.6.gz	vmware-vmtoolsd-root.log
bootstrap.log	gpu-manager.log	syslog.7.gz	wtmp

READING FILES



READING FILES

cat /log/auth.log

```
Jun  2 01:28:24 k-sam gdm-autologin]: gkr-pam: no password is available for user
Jun  2 01:28:26 k-sam gdm-autologin]: pam_unix(gdm-autologin:session): session opened for user gencyber by (uid=0)
Jun  2 01:28:26 k-sam systemd-logind[749]: New session 1 of user gencyber.
Jun  2 01:28:26 k-sam systemd: pam_unix(systemd-user:session): session opened for user gencyber by (uid=0)
Jun  2 01:28:28 k-sam gdm-autologin]: gkr-pam: gnome-keyring-daemon started properly
Jun  2 01:28:43 k-sam gnome-keyring-daemon[1074]: The Secret Service was already initialized
Jun  2 01:28:43 k-sam gnome-keyring-daemon[1074]: The PKCS#11 component was already initialized
Jun  2 01:28:53 k-sam dbus-daemon[732]: [system] Failed to activate service 'org.bluez': timed out
(service_start_timeout=25000ms)
Jun  2 01:28:54 k-sam polkitd(authority=local): Registered Authentication Agent for unix-session:1
(system bus name :1.46 [/usr/bin/gnome-shell], object path /org/freedesktop/PolicyKit1/AuthenticationAgent, locale en_US.UTF-8)
Jun  2 01:30:12 k-sam pkexec: pam_unix(polkit-1:session): session opened for user root by (uid=1000)
Jun  2 01:30:12 k-sam pkexec[2114]: gencyber: Executing command [USER=root] [TTY=unknown] [CWD=/home/gencyber] [COMMAND=/usr/lib/update-notifier/package-system-locked]
```

EXERCISE (FOLLOW ALONG)

1. cd /var
- 2.ls /log
- 3.cat /log/auth.log

ACTIVITY F



EASTER EGG HUNT (10-15 MINUTES)

Try to find the following files in various folders located on your file system.

The file names to look for are:

[Ant-Man](#) [Aquaman](#) [Asterix](#) [The Atom](#) [The Avengers](#) [Batgirl](#)
[Batman](#) [Batwoman](#) [Black Canary](#) [Black Panther](#)

More advanced users: Try to find out file locations without using the change directory and ls commands.

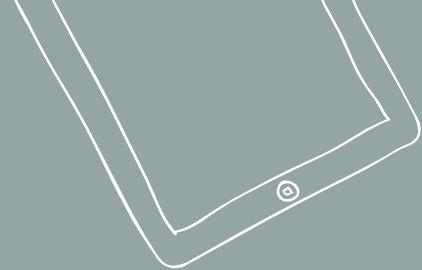
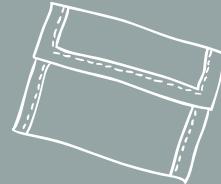
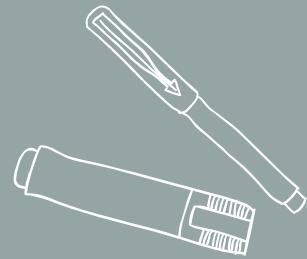
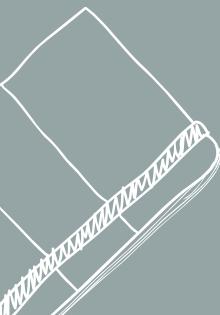
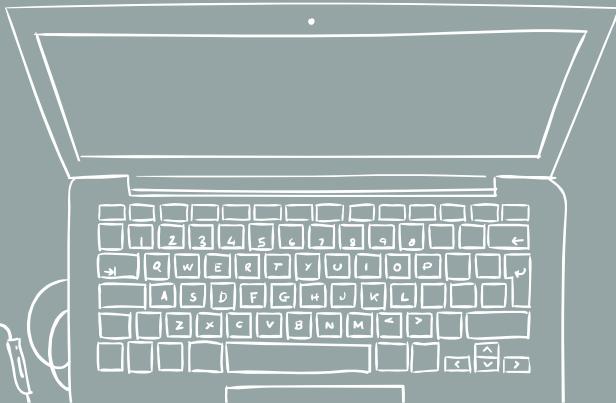


TRY TO FIND OUT FILE LOCATIONS WITHOUT USING THE CHANGE DIRECTORY AND LS COMMANDS

find . -name '*.txt'

```
./.mozilla/firefox/rer56e0w.default-release/SiteSecurityServiceState.txt  
./.mozilla/firefox/rer56e0w.default-release/pkcs11.txt  
./.mozilla/firefox/rer56e0w.default-release/AlternateServices.txt  
.minecraft-starwars/mcpi/minecraft-pi-edition-LICENSE.txt  
.cache/tracker/locale-for-miner-apps.txt  
.cache/tracker/parser-version.txt  
.cache/tracker/first-index.txt  
.cache/tracker/db-version.txt  
.cache/tracker/db-locale.txt  
.cache/tracker/last-crawl.txt  
.histkeep2.txt  
.blacklist.txt  
.histkeep.txt  
.histkeep3.txt
```

CREATE A USER



CREATE A USER (FOLLOW ALONG)

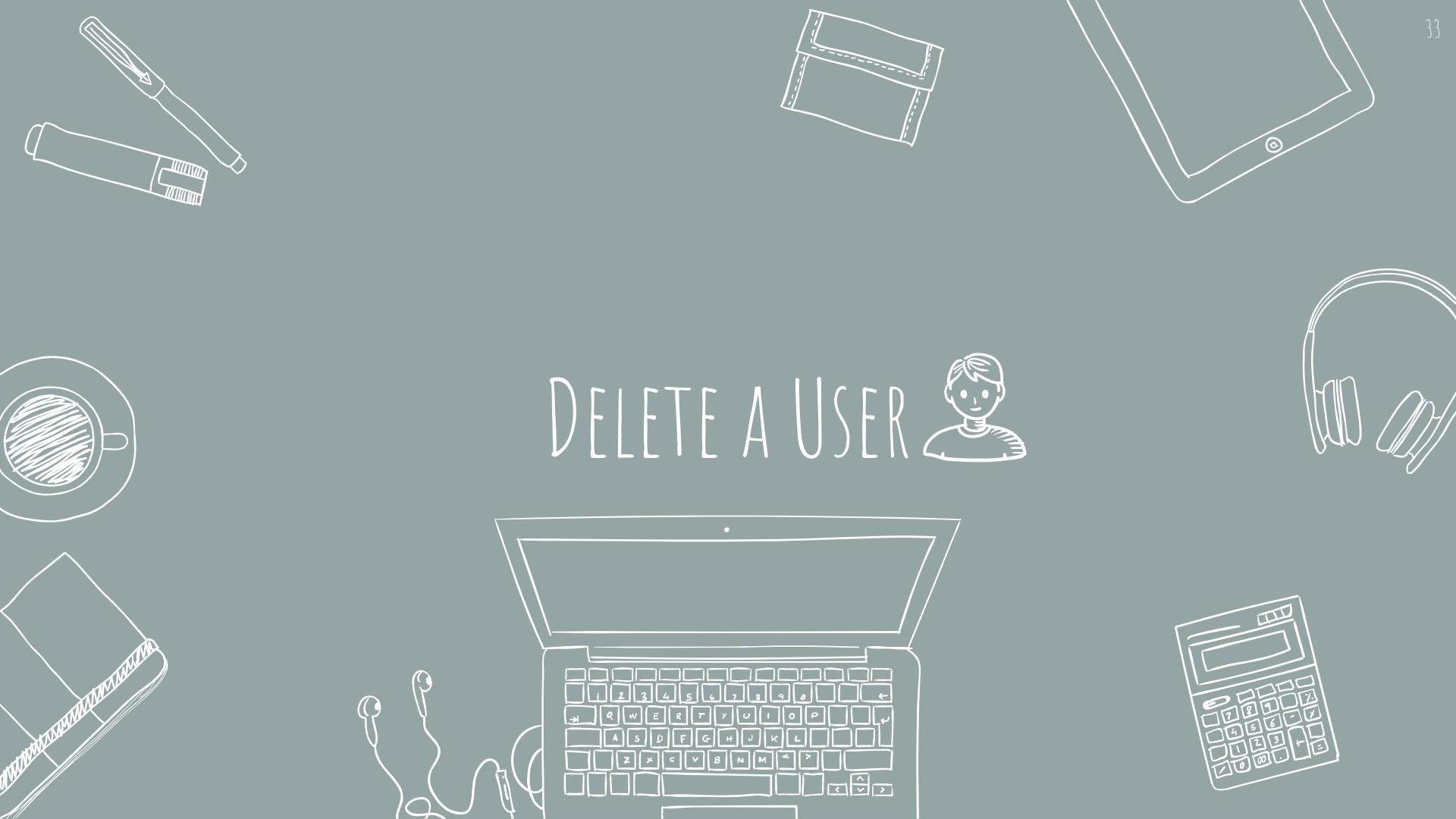
adduser student

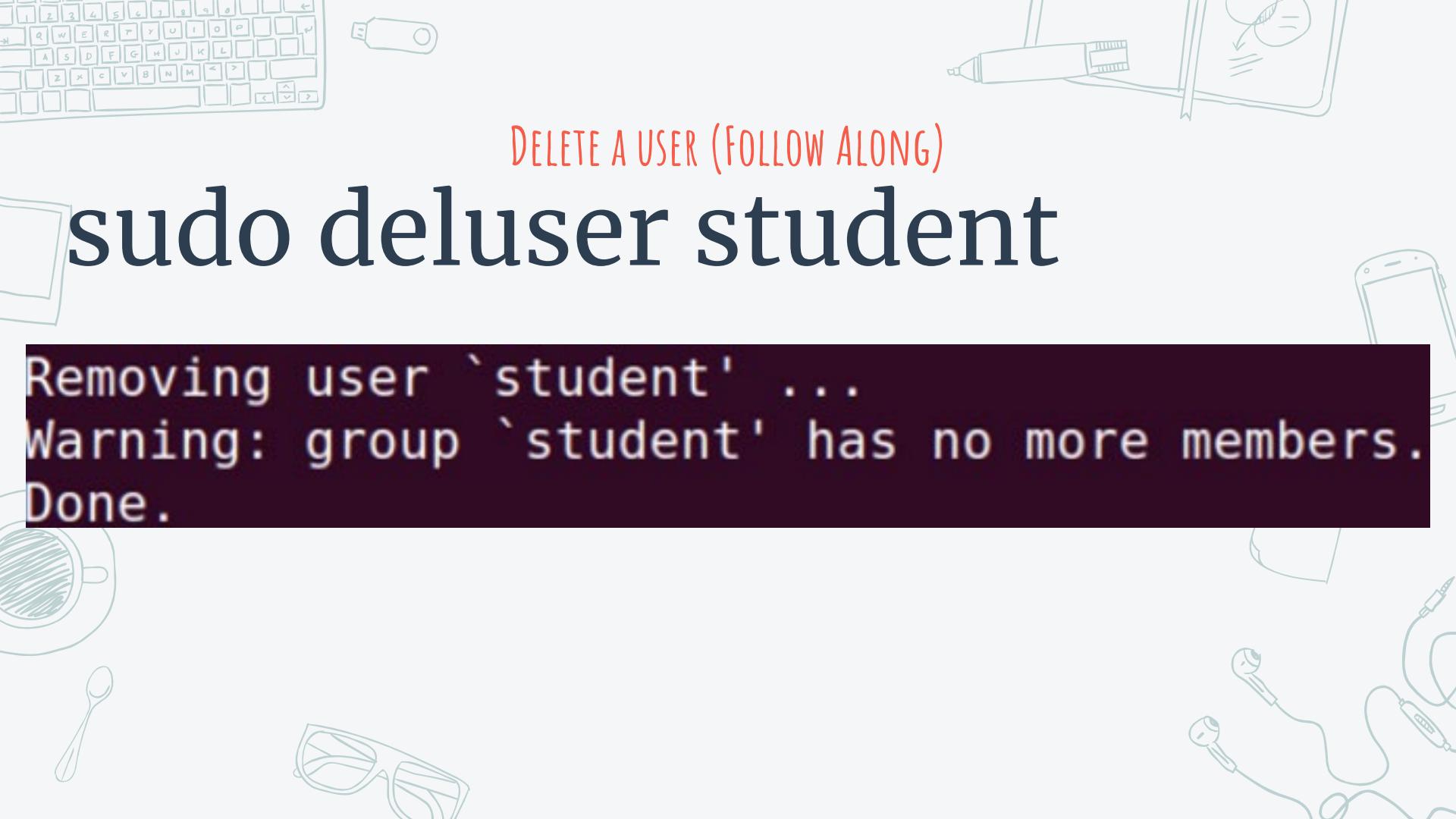
```
adduser: Only root may add a user or group to the system.
```

sudo adduser student

```
[sudo] password for gencyber:  
Sorry, try again.  
[sudo] password for gencyber:  
Adding user `student' ...  
Adding new group `student' (1001) ...  
Adding new user `student' (1001) with group `student' ...  
Creating home directory `/home/student' ...  
Copying files from `/etc/skel' ...  
New password:  
Retype new password:  
passwd: password updated successfully  
Changing the user information for student  
Enter the new value, or press ENTER for the default  
    Full Name []: John  
    Room Number []: Doe  
    Work Phone []: (716) 444-4444  
    Home Phone []:  
    Other []:  
Is the information correct? [Y/n] Y
```

DELETE A USER



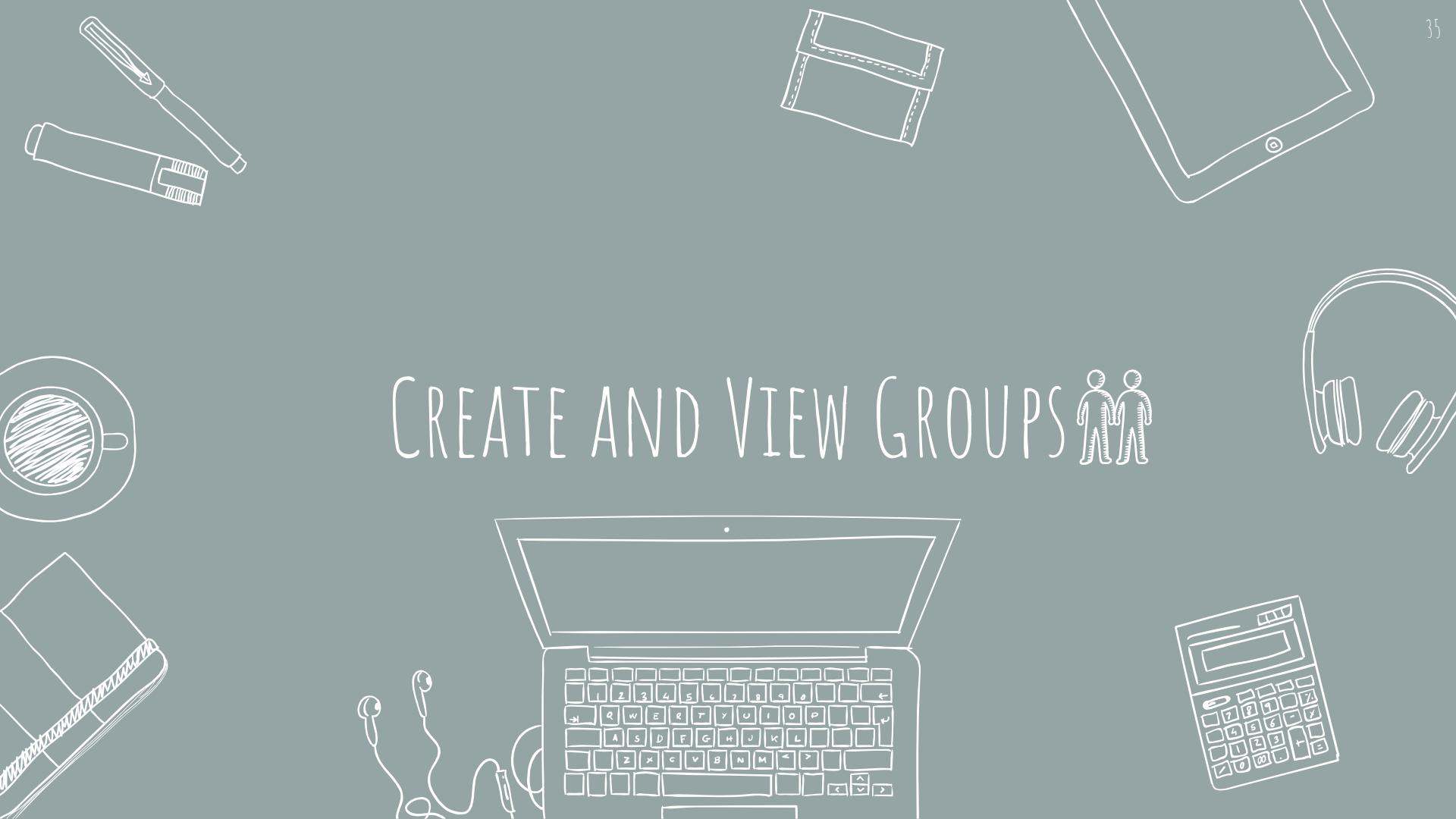


DELETE A USER (FOLLOW ALONG)

sudo deluser student

```
Removing user `student' ...
Warning: group `student' has no more members.
Done.
```

CREATE AND VIEW GROUPS





CREATE AND VIEW GROUPS (FOLLOW ALONG)

sudo groupadd ub

```
[sudo] password for gencyber:
```

cat /etc/group

REMOVE A GROUP

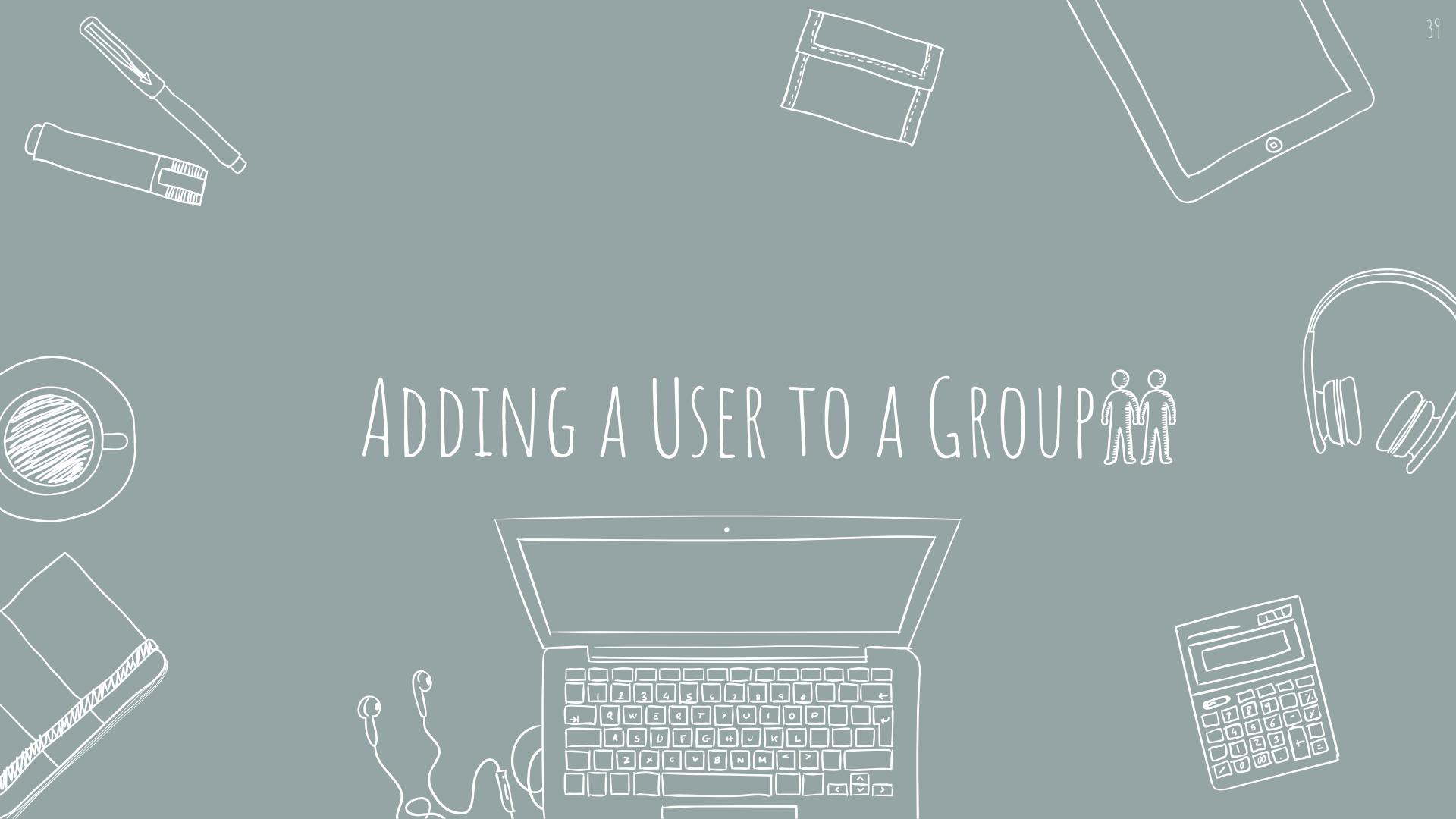




REMOVE A GROUP (FOLLOW ALONG)

sudo groupdel ub

ADDING A USER TO A GROUP



ADDING A USER TO A GROUP

```
usermod -a -G ub student
```

STEPS (TRY YOURSELF)

1. sudo useradd student
2. sudo groupadd student
3. usermod -a -G ub
student



MORE ADVANCED COMMANDS

✗ Vim

- highly configurable text editor built to make creating and changing any kind of text very efficient

✗ find

- Allows the searching for specific files and file names.

✗ List of 20 advanced commands

- <https://www.tecmint.com/20-advanced-commands-for-linux-experts/>



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