Running Commands

- How to open terminal
- How commands can be run
- Command line commands and scripts

TRAINING

CENTER

epam

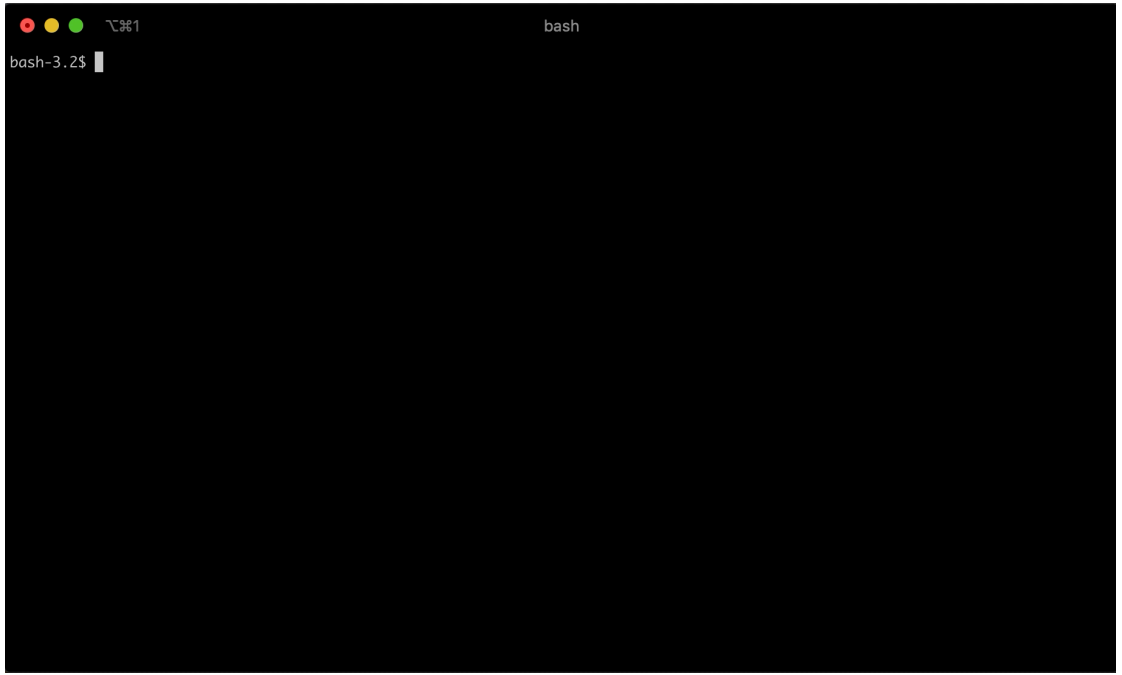
How to open terminal

Linux	Mac OS	Windows 10
- Ctrl+Alt+T - Shortcut in desktop environment the OS is using.	- Applications → Utilities → Terminal.	1. Have “Windows Subsystem for Linux” feature enabled. 2. Search for ”bash” in search box.

How to run commands

1. Enter a command you would like to execute
2. Press ”Enter”

- If you don’t want to execute the entered command, press Ctrl+C.
- To see commands history, enter **history** command.
- To execute any command from the history, enter its id after **!** (exclamation mark)
- To go through previously entered commands, use **Up** and **Down** keys



Command Line commands and Scripts

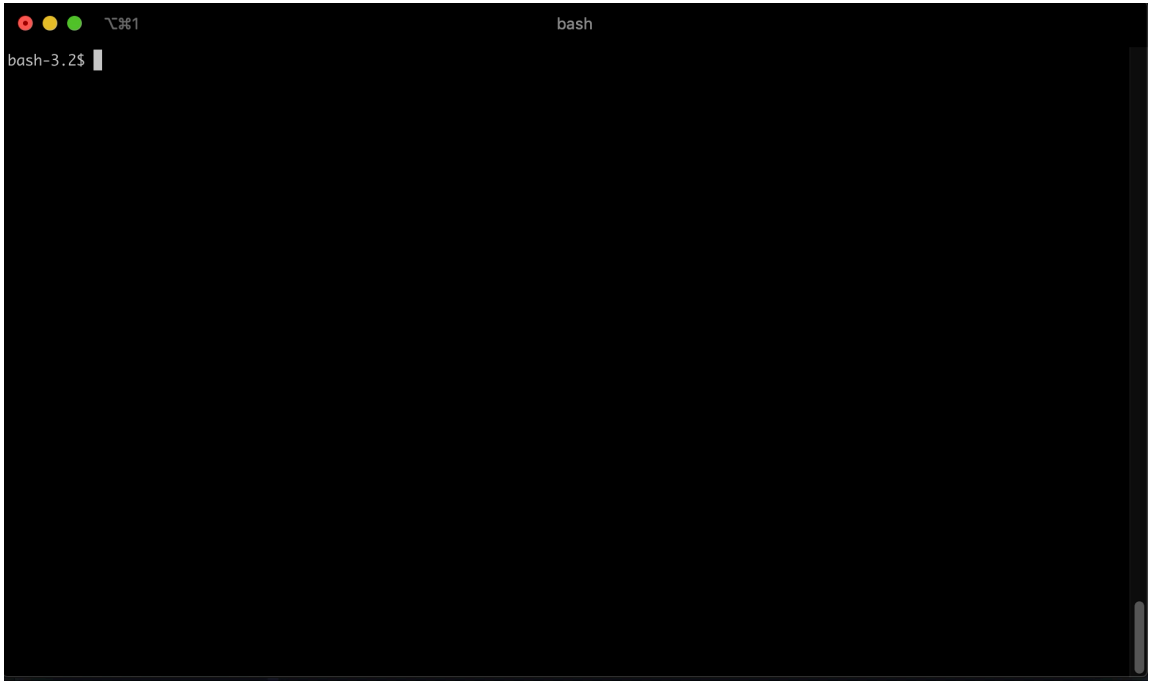
You can enter commands into the Shell, and run them ad-hoc as you've seen it on the previous slide.

You can also write that commands down into the text file and pass that file to the bash binary.

That file can be called **a script** – a list of consecutively executed commands.

You can run it in 2 ways:
bash script_name.sh – runs script in a new shell process

. script_name.sh – runs script in the current shell process



Command Line commands and Scripts

If you want to turn your script into an executable, to run it like any other binary, you have to do 2 things:

```
bash-3.2$ chmod +x ./sample.sh
bash-3.2$ ls -l ./sample.sh
-rwxr-xr-x  1 aliaksandrisayeu  staff  72 Dec  6 21:57 ./sample.sh
bash-3.2$
```

```
bash-3.2$ cat ./sample.sh
#!/bin/bash
echo hello, world!
curl -IL google.com
echo goodbye, world!
bash-3.2$
```

Make your script file executable. This will be needed to tell your OS that your file can be executed.

Command: **chmod +x ./filename.sh**

Add a shebang (#!/bin/bash) expression with path to the bash binary to the top of the script. This will tell your OS what executable should be used to run your script.

Sudo and root user

root – superuser, has almost unlimited permissions, dangerous to use from security perspective.
sudo – (**su**peruser **do**) permissions escalation utility, let's you run commands as superuser.

It is easy to determine if you use root user or not:
root user has **#** in the command line header.
Any other user has **$**. Remember it.

$ - usual user

- root user

Useful Shell Commands

One Command to Rule Them All	
man [command]	Display manual of the entered command.

FS Navigation	
ls [path]	List all files/directories in the current directory or in [path].
cd [path]	change directory. Can accept absolute or relative path.
pwd	lookup absolute path to current directory.

Working With Files	
cat [file …]	concatenate and print file(s).
tail [file …]	display the last part of a file.
head [file …]	display the first lines of a file.
grep [pattern] [file …]	find [pattern] in [file]. Can work with regexps.

Useful Shell Commands

Working With Files	
mkdir [dirname]	Create new directory.
touch [file …]	Create new file.
rm [file …]	Delete file or directory.
cp [file_1] [file_2]	Copy [file_1] into [file_2]
mv [filepath_1] [filepath_2]	Move [filepath_1] to new [filepath_2] location. If the path to the file stays the same, but names are different, **mv** will rename the file.
ln –s [file_path] [link_name]	Creates symbolic link of a [file_path]. It is better to have [file_path] absolute.
chmod [mode] [file …]	Change file or directory permissions.
chown [user:group] [file …]	Change file or directory owner
tar czf [archive] [file …]	Compress [file] into tar.gz [archive].
tar xzf [archive]	Extract files from tar.gz [archive].

Useful Shell Commands

System Commands	
uname	Show OS information.
hostname	Show system hostname.
who	Show currently logged in users.
whoami	Show which user you're currently logged in as.
groupadd [group_name]	Create new group.
useradd [user_name] **adduser [user_name]**	Create new user.
usermod [params] [user_name]	Modify existing user.
userdel [user_name]	Delete user.

Useful Shell Commands

Network	
curl [url]	Make http request to [url].
wget [url]	Download a file by [url].
ifconfig	Show network interfaces configuration.
netstat -tulpn	Show listening ports.
dig **nslookup**	Lookup adomain name or IR address (reverse lookup).

Processes	
ps	Show running processes.
kill [SIG] [pid]	Send signal [SIG] to process [pid]. send -9 to kill the process.
exit	Exit current shell.

Useful Shell Commands

Jobs Control*	
Ctrl + Z	Stop current job.
jobs	List all jobs
fg [job_id]	Resume job [job_id] in foreground
bg [job_id]	Resume job [job_id] in background
disown [job_id]	Detach job from current shell process.

Thanks for watching!