

## Data Engineering Day 11:

The credit for this course goes to Coursera. [Click More](#)

Another link : [Azure data Engineer](#)

### Introduction to Linux Commands and Shell Scripting

# What is an operating system? UNIX

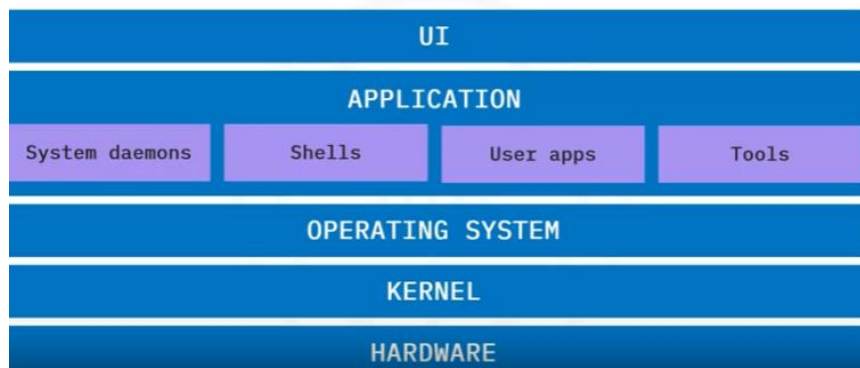
- An operating system OS is software which manages hardware and resources and allows interactions with hardware too.

## Top 50 Linux commands

Command	Description
ls	List files and directories
cd	Change directory
pwd	Print working directory
mkdir	Create a directory
touch	Create a new file
cp	Copy files and directories
mv	Move or rename files and directories
rm	Remove files and directories
cat	Concatenate and display file content
head	Display the beginning of a file
tail	Display the end of a file
grep	Search for a pattern in files
find	Search for files and directories
chmod	Change file permissions
chown	Change file ownership
tar	Archive files
gzip	Compress files
gunzip	Decompress files
ps	Display running processes
top	Display system activity and processes
kill	Terminate a process
ssh	Connect to a remote server
scp	Copy files between local and remote systems
wget	Download files from the web
curl	Transfer data from or to a server
ifconfig	Configure network interfaces
ping	Test network connectivity

netstat	Network statistics
df	Display disk space usage
du	Estimate file and directory sizes
free	Display memory usage
uname	Display system information
whoami	Display current user
history	View command history
grep	Search for a pattern in files
sed	Stream editor for text manipulation
awk	Text processing and pattern matching
sort	Sort lines of text files
wc	Count lines, words, and characters
cut	Cut out selected portions of lines
tee	Redirect output to multiple files
alias	Create command aliases
source	Execute commands from a file
sudo	Execute a command with superuser privileges
su	Switch to another user
crontab	Schedule commands to run at specific times
systemctl	Control system services
tar	Archive files
diff	Compare files line by line
git	Version control system

## Five layers of Linux



# Browsing directories with the Linux terminal

---

## Learning Objectives

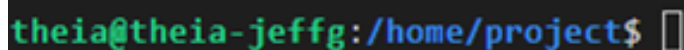
---

After finishing this reading, you will be able to:

- Describe what a Linux terminal is used for
- Use the `pwd` and `ls` commands to browse directories in your Linux file system

## The Linux terminal

---



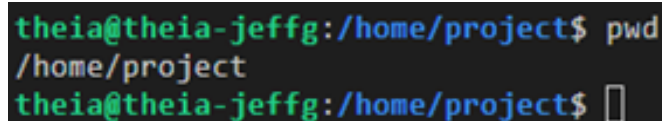
```
theia@theia-jeffg:/home/project$
```

You can interact with the Linux shell by entering commands into the **Linux terminal**, which is also commonly referred to as the **command line** or the **command prompt**.

In this case, the **present working directory** is `/home/project`, as indicated by the blue text. The dollar sign `$` following it is called the command prompt.

Recall that a **terminal window** is a simple user interface that allows you to run any commands that you would like, simply by typing the command on your keyboard and hitting `Enter`. Many commands will respond by returning some sort of output, which by default appears as text in your terminal window.

Let's see how this works using a couple of the most common Linux commands, the `pwd` and `ls` commands:



```
theia@theia-jeffg:/home/project$ pwd
/home/project
theia@theia-jeffg:/home/project$
```

Here we've entered the `pwd` command, which prints the **path name** for our present working directory on the next line. You can see that the command prints what we expected, which is the path to the present working directory, `/home/project`. Notice also that the command prompt shows up again on the following line, awaiting your next command.

Great! Now, how do you see what's inside your present working directory?

moment, the `/home/project` directory is brand new and doesn't contain anything yet, so entering the `ls` command will return nothing:

```
theia@theia-jeffg:/home/project$ pwd
/home/project
theia@theia-jeffg:/home/project$ ls
theia@theia-jeffg:/home/project$
```

Being a conservative program, `ls` won't bother with printing a blank line to express that there is nothing to list.

Let's see if we can find a directory that already contains content. You can list the contents of any directory with the `ls` command by specifying the directory name you'd like to explore.

For example, `ls /home` lists the contents of the `/home` directory:

```
theia@theia-jeffg:/home/project$ pwd
/home/project
theia@theia-jeffg:/home/project$ ls
theia@theia-jeffg:/home/project$ ls /home
project theia
theia@theia-jeffg:/home/project$
```

You can see that the directory `/home` contains two objects, namely `project` and `theia`.

**Tip:** Think of a directory as a folder that contains files and subdirectories. In this case, `project` and `theia` are subdirectories of `/home`. Subdirectories can contain additional files and subdirectories. You'll learn more about exploring subdirectories in later labs.

Notice the naming convention for a directory's path: `/home/project` indicates that the `project` directory is a **subdirectory** of `/home`. The path for the `theia` subdirectory would similarly be `/home/theia`.

Like a tree, your Linux file system has a **root directory** (`/`, called "slash") from which your entire Linux file system branches out.

One important subdirectory of your root directory is `home`. You can see this for yourself by entering `ls /` to list the contents of `/`:

```
boot etc lib lib64 media opt root sbin sys usr
theia@theia-jeffg:/home/project$
```

## Summary

---

Congratulations! In this reading, you learned that:

- You can interact with the Linux shell by entering commands into the Linux terminal
- The `pwd` command prints the path name to the present working directory
- The `ls` command lists the contents of a directory

## Authors

---

Jeff Grossman

## Other Contributors

Rav Ahuja



**Skills** Network

