

CSCÉ 215

Lab 1



Housekeeping

- **aelkouri@email.sc.edu / aidacodes.com**
- 5 Assignments total + final project
- Quizzes throughout
- All material on Dropbox / O'Keefe's website

What is UNIX?

- Operating system developed in 1960s
- Based on multi-tasking
- Constant development since creation
- Open source & Free

UNIX

Kernel

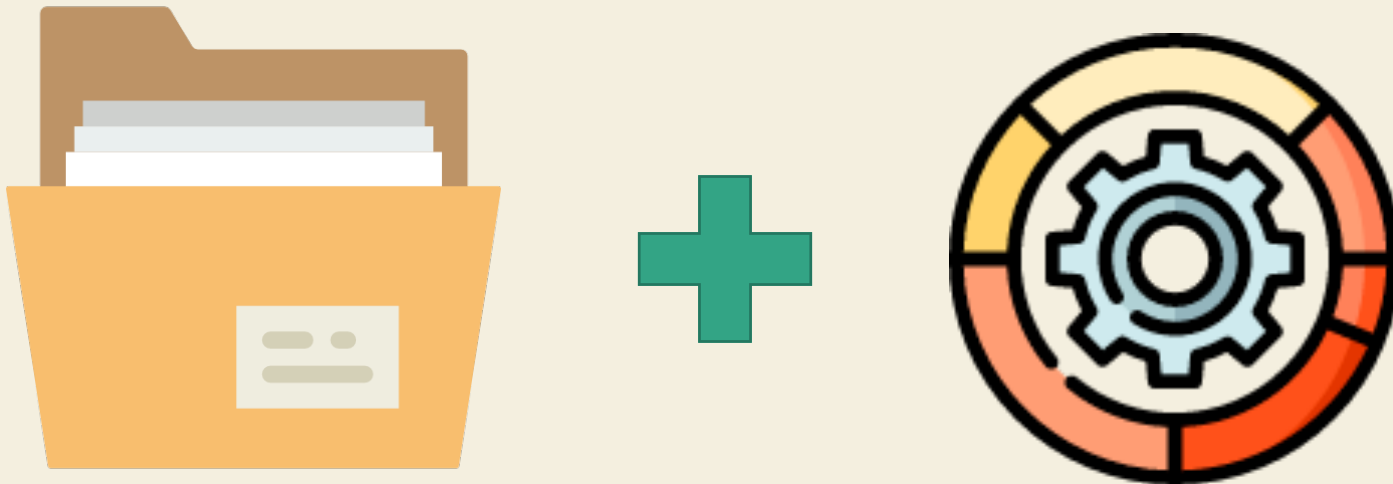
- Hub of Operating System
- Handles filestore, communication

Shell

- Interface between user and Kernel
 - Command Line Interpreter (Terminal)
-

What is UNIX?

- Everything in UNIX is either a file or a process.
- A **process** is an executing program identified by a unique PID (process identifier).
- A **file** is a collection of data. They are created by users using text editors, running compilers etc.

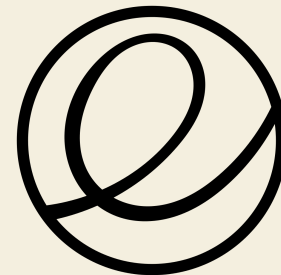


What is Linux?

- **Free Software Foundation** (FSF) began the **GNU project**, a project to create a free version of the Unix operating system
- In 1991 Linus Torvalds began developing an operating system kernel, which he named "**Linux**"
- In the Linux community, different organizations have combined the available components differently. Each combination is called a **distribution**.



ubuntu





Intro to Shell

What is VI?

- Default editor that comes with UNIX / **V**isual Editor
- Case sensitive
- 2 Modes of Operation:

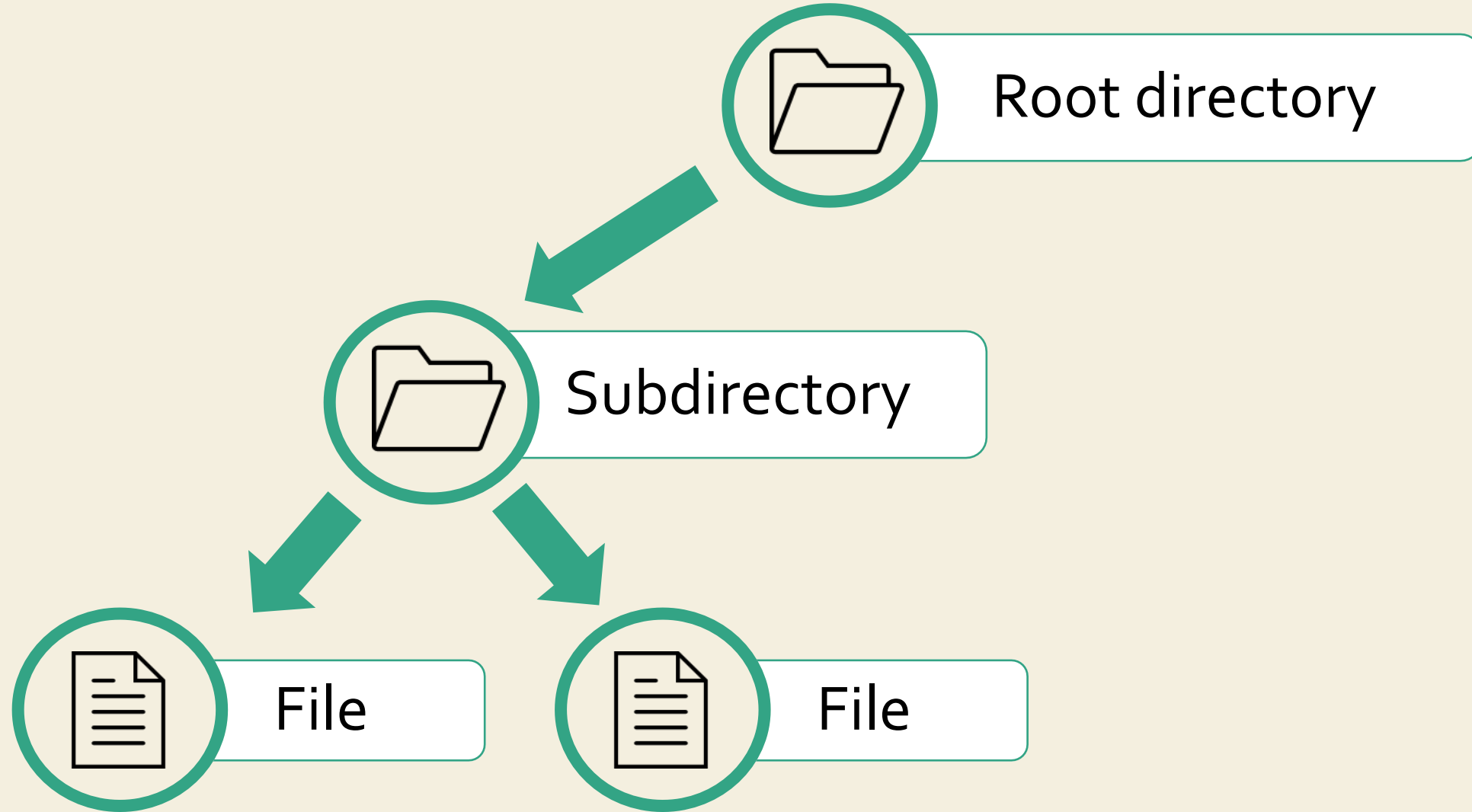
Command Mode

Insert Mode

to enter insert mode press I, to exit insert mode press Q

To Start VI	To Exit VI
vi	:q (quit)
vi <filename>	:wq <filename> (save + quit)

Understanding & Traversing the Filestore



Understanding & Traversing the Filestore

- List all files and directories within current directory:

```
> ls
```

- Change current directory:

```
> cd <dirname>
```

Current Directory

Autocomplete

~

.

..

tab

Home directory

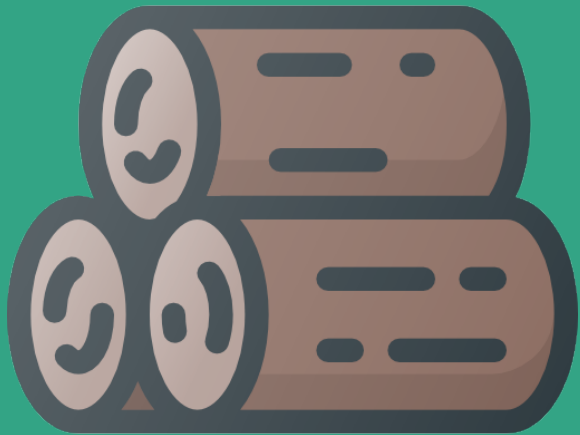
Two directories

What is a script?

- Two types of script
- Script command records input and output to shell session
- Commands:

```
script <filename>
```

```
exit
```



[I] > 18 >> ✓ > script mylog.txt

< ~/s/csce215 <

Script started, output file is mylog.txt

Aidas-MBP% ls

mylog.txt

Aidas-MBP% cal

August 2017

Su Mo Tu We Th Fr Sa

1 2 3 4 5

6 7 8 9 10 11 12

13 14 15 16 17 18 19

20 21 22 23 24 25 26

27 28 29 30 31

Aidas-MBP% uptime

15:12 up 7 days, 19:40, 3 users, load averages: 1.61 1.73 2.03

Aidas-MBP% exit

Script done, output file is mylog.txt

[I] > 19 >> ✓ > █

< 15s < ~/s/csce215 <

What is a script?

- Bash Shell = Interactive language
- Commands → File = Script
- Execute certain files as scripts to run the commands within them as though it was a shell.
- Scripts are not *compiled* but *interpreted*.



Computer translates them as they are run.



They are thus less efficient than programs written in (for example) C.



However, they are extremely good where you want to use Operating System facilities; for example, when processing files in some fashion.

Executing Scripts

Very important!!!

- Must have top line:

```
> #!/bin/sh
```

- Must be given executable permissions

```
> chmod +x <filename>
```

- To run the script:

```
> ./<filename>
```



Turning it all in!!

```
> cat [userid].info.txt [userid].part2.txt  
>> [userid]_assignment1.txt
```