



ThangLong University

CS100: INTRO TO PROGRAMMING

Linux operating system

October 3, 2017

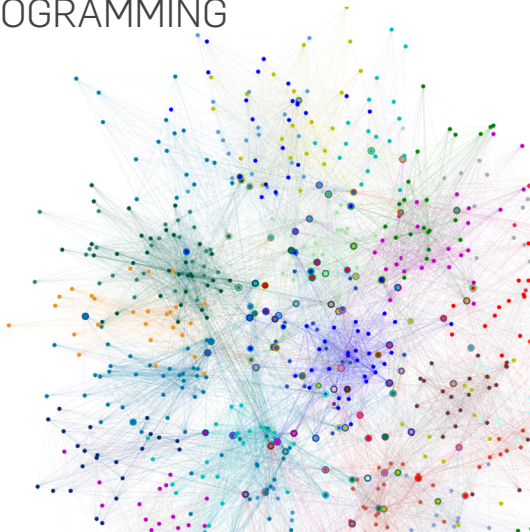
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Mathematics and Informatics

ThangLong University



Overview

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In this lecture, I provide a general view of Ubuntu Linux and its the benefits. You'll learn the basics of the command line interface (CLI) of a Ubuntu Linux OS.

Overview

1. Operating system
2. Command line interface
3. Python programming

OPERATING SYSTEM

What is an operating system?

The operating system (OS) is the most important program that runs on a computer. Every general-purpose computer must have an operating system to run other programs and applications. Computer operating systems perform basic tasks.



Figure: Some operating system examples



Closed-source
operating system.



Ubuntu
operating system.

FREE

Development(Programming, Software/web development, ...)

Performance(RAM utilization, Core utilization, ...)

Security(Antivirus, firewall, ... awesome, no antivirus needed)

Install Ubuntu OS

- 1 Install Ubuntu OS inside Windows using Wubi (recommend)
Watch video: <https://youtu.be/vq22iOzglwQ>
- 2 Install Ubuntu alongside Windows



1 Select a new password

2 Click Install

3 There is no three

Figure: Install Ubuntu inside Windows using wubi

COMMAND LINE INTERFACE

What can CLI do?

The CLI can help you:

- Navigate folders
- Create files, folders, and programs
- Edit file, folders, and programs
- Run computer programs

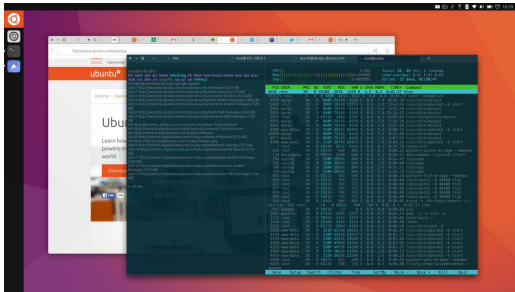


Figure: Command line interface on Ubuntu

CLI Basics

- You can imagine tracing all of the directories from your root directory to the directory you're currently in.
- This is called the "path" to your working directory.

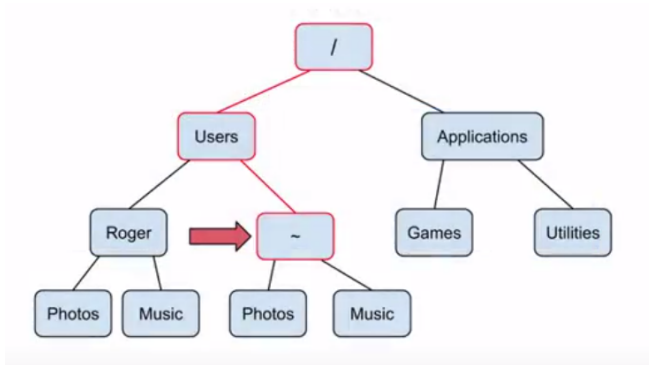
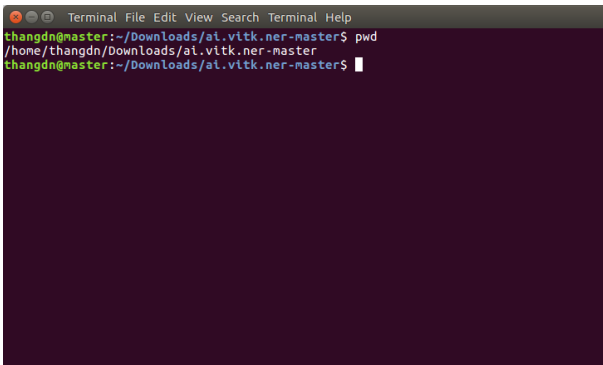


Figure: Linux directory

CLI Basics

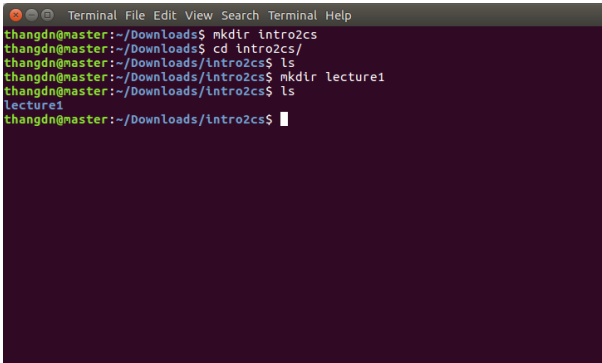
- In your CLI prompt, type **pwd** and press enter.
- This will display the path to your working directory.
- As you can see we get the prompt back after entering a command.

A screenshot of a terminal window with a dark background. The window has a title bar with standard macOS window controls and a menu bar with 'Terminal', 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal text shows a user named 'thangdn' at a 'master' prompt in the directory '~/Downloads/al.vtk.ner-master'. The user enters the command 'pwd', and the terminal outputs the full path '/home/thangdn/Downloads/al.vtk.ner-master'. The prompt returns to 'thangdn@master:~/Downloads/al.vtk.ner-master\$' with a cursor at the end.

```
thangdn@master:~/Downloads/al.vtk.ner-master$ pwd
/home/thangdn/Downloads/al.vtk.ner-master
thangdn@master:~/Downloads/al.vtk.ner-master$
```

CLI Commands

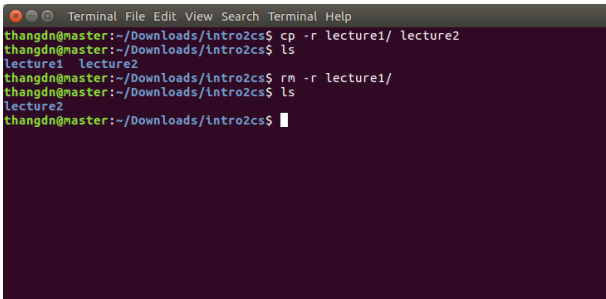
- **cd** stands for "change directory"
- **mkdir** stands for "make directory".
Just like: right click -> create new folder
- **ls** lists files and folders in the current directory

A terminal window with a dark background and light green text. The window title bar shows standard window controls and the text 'Terminal File Edit View Search Terminal Help'. The terminal content shows a series of commands and their outputs:

```
thangdn@master:~/Downloads$ mkdir intro2cs
thangdn@master:~/Downloads$ cd intro2cs/
thangdn@master:~/Downloads/intro2cs$ ls
thangdn@master:~/Downloads/intro2cs$ mkdir lecture1
thangdn@master:~/Downloads/intro2cs$ ls
lecture1
thangdn@master:~/Downloads/intro2cs$
```

CLI Commands

- **cp** can also be used for copying the contents of directories.
The line: **cp -r Documents More_docs** copies the contents of Documents into More_docs
- **rm** stands for "remove" to delete entire directories and their contents by using the **-r** flag
Be careful when you do this, there is no way to undo an rm command

A terminal window with a dark background and light text. The title bar shows 'Terminal' and standard window controls. The prompt is 'thangdn@master:~/Downloads/intro2cs\$'. The user enters 'cp -r lecture1/ lecture2', followed by 'ls' which shows 'lecture1' and 'lecture2'. Then the user enters 'rm -r lecture1/' and another 'ls' which shows only 'lecture2'.

```
thangdn@master:~/Downloads/intro2cs$ cp -r lecture1/ lecture2
thangdn@master:~/Downloads/intro2cs$ ls
lecture1  lecture2
thangdn@master:~/Downloads/intro2cs$ rm -r lecture1/
thangdn@master:~/Downloads/intro2cs$ ls
lecture2
thangdn@master:~/Downloads/intro2cs$
```

Your challenge

Learn basic terminal commands
(CLI) quickly in an Hour!



PYTHON PROGRAMMING