Welcome to Python

Setup and Workspace

- Installing Python
- Testing Installation : The Interactive shell
- Tools for working environment
- Creating workspace: Directory structure
- Windows and Linux Command line
- Some shortcut keys

Installing Python

Python available at the official website : https://www.python.org/

- Windows : Download the executable and run it.
- Linux : Run the command on Ubuntu shell

  sudo apt-get install python3

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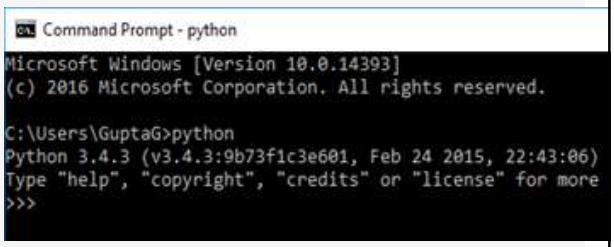
Testing Installation : The Interactive shell

- Windows : Press Windows Key and type cmd. On the Terminal type python



- Linux : Open a terminal (Ubuntu CTRL+ALT+T) and type python.

** if you get error like command not found, add python installation path

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Tools for working environment

- Use an IDE

  Pycharm IDE with Python 3.x.x

  https://www.jetbrains.com/pycharm/download/

- Use any text editor and Command line (my preferred way)

  Write Scripts using a text editor : Notepad++, vi, vim, Sublime Text..

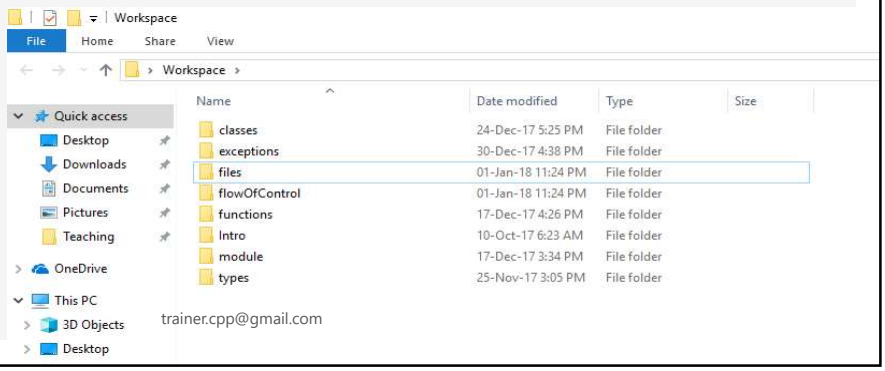
  Windows or Linux command line for executing.

Creating workspace: Directory structure

- Create a folder ***workspace*** : all our scripts will be in this folder
- Maintain separate folders for each topic in ***workspace*** folder.
- Make sure to name the script files in following convention: f**N_topic**.py

Ex:

f1_ifStatement.py
f2_ifElse.py



Windows and Linux Command line

	Windows	Linux
Go to the folder	*cd <folder Name>* *Ex:* *cd Workspace*	*cd <folder Name>* *Ex:* *cd Workspace*
Go to the previous directory	*cd ..*	*cd ..*
List files in current directory	*dir*	*ls* *ls –la*

Use up and down arrow keys to view previous commands in cmd window

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Notepad++ Shortcuts

Ctrl + a	To select everything in current file
Ctrl + s	Save current file
Ctrl + Tab	To switch files
Ctrl + n	To open new file
Ctrl + c	To copy selected text
Ctrl + v	To paste selected text

- Press *Shift* and Arrow keys to make selection of a part of text (you can use Ctrl key while selecting to make selection faster)

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Windows shortcuts

Open command window in current folder

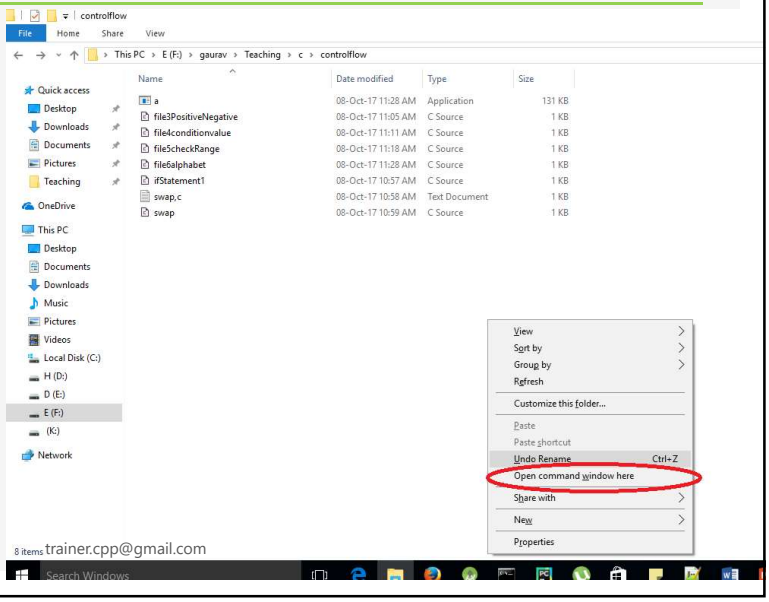
Press the Shift Key and right click

You will see the option :

Open Command Window Here

To Switch Tabs/Windows

Alt + Tab and Alt + Shift + Tab



Introduction to PYTHON

History of Python

What is Python

Why Python

Installing Python

Applications of Python

Scripts and Command line

Some History

Python is a widely used high-level programming language for general-purpose programming, created by **Guido van Rossum** and first released in 1991. (Source wikipedia.org)

What is Python

Python is a **programming language**

High level and **Object Oriented** **Language**

Interpreted programming language

Language that supports **dynamic** **semantics**

Huge set of **Libraries**

Emphasis on **Code Readability**

Why Python

Beginner Friendly

Easy to **understand** with lesser lines of code

Easy to **Prototype** and **Test** : Lesser Delivery Time

Cross Platform

Free and **Open Source**

Easy to integrate with other languages C, C++, JAVA …

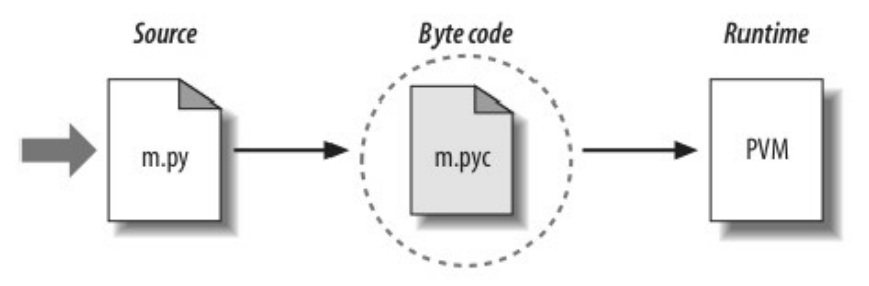
Vast set of **libraries** available for Web, Machine Learning, Data Mining…..

Applications of Python

- Testing and Automation
- Numerical Computing
- Machine Learning and Image Processing for Prototyping and Application Development
- Data Science
- Web and Internet Development

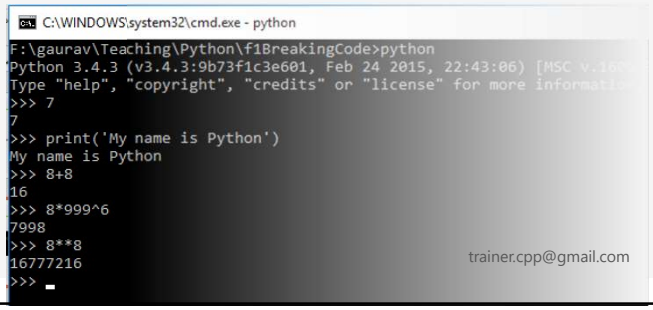
Python Runtime

- Program and Languages: **Machine, Assembly** and **High Level**.
- **Compilation** Vs **Interpretation** and the **Combo**



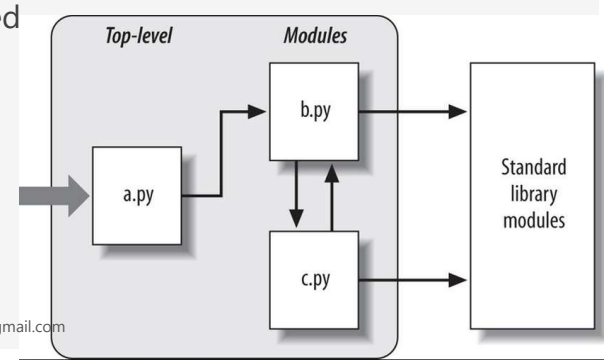
Interactive Mode Programming

- Invoke the python shell from the command line by typing python on the prompt
- The interactive shell is simply a command interpreter (REPL), that allows to run commands directly on the shell instead of writing scripts



Script Mode Programming

- Python scripts are saved with the extension .py
- A script can be a top level script or a module that can be imported.
- All scripts whether imported or executed directly, define a variable **__name__,** which identifies whether the script is imported or is a top level script



Dir And Help functions

- Dir gives the list of available attributes and objects in the current scope or of the object if passed and argument.
- Help method returns help information, depending on how it is invoked.
- Help can be called without argument, with the names of builtins, or with names specified as a string