

Python Workshop Cheatsheet

Command Line

Basics		
Change directory	<code>cd dirname</code>	
Go to home	<code>cd ~</code>	
Go up one dir.	<code>cd ..</code>	
List files	<code>ls</code>	
List files (incl hidden)	<code>ls -a</code>	
Print working dir.	<code>pwd</code>	
Make new directory	<code>mkdir dirname</code>	
Remove empty dir.	<code>rmdir</code>	
Remove files	<code>rm filename</code>	
Remove files and directories	<code>rm -r filename</code>	⚠
Find path for command	<code>which cmd</code>	🔍 🍏
	Get-Command <code>cmd</code>	🪟
Show file contents	<code>cat file</code>	
Show long file	<code>less file</code>	🔍 🍏
	<code>more file</code>	🪟
Show manual	<code>man cmd</code>	
Show online help	Get-Help -Online <code>cmd</code>	🪟
Write to file	<code>echo "contents" > file</code>	🔍 🍏
	<code>sc file -Value "contents"</code>	🪟

Git		
Clone repo	<code>git clone url</code>	
Show status	<code>git status</code>	
Stage file	<code>git add file</code>	
Unstage file	<code>git reset file</code>	
Commit staged changes	<code>git commit -m "message"</code>	
Change branch	<code>git checkout branch</code>	
New branch	<code>git checkout -b branch</code>	
Push current branch	<code>git push</code>	
Pull current branch	<code>git pull</code>	
Discard changes in file	<code>git checkout -- file</code>	
Stash current changes	<code>git stash</code>	
Apply previous stash	<code>git stash apply</code>	

Package Management		
Install OS pkg	<code>sudo apt-get install pkg</code>	🔍 🪟
	<code>choco install pkg</code>	
Install Anaconda pkg	<code>conda install pkg</code>	
Install Python pkg	<code>pip install pkg</code>	

Python Language

Built-in Types	
Strings	<code>str</code>
Numeric types	<code>int</code> and <code>float</code>
Boolean	<code>bool</code> , <code>True</code> and <code>False</code>
Lists	<code>list</code> and <code>[]</code>
Tuples	<code>tuple</code> and <code>()</code>
Dictionaries	<code>dict</code> and <code>{}</code>

Definitions	
Functions	<code>def fn(arg, kwarg=default):</code> <code>body</code>
Classes	<code>class Name(bases):</code> <code>body</code>

Flow Control	
Conditional	<code>if cond:</code> <code>body</code>
For-each loop	<code>for var in iterable:</code> <code>body</code>
Do-while	<code>while cond:</code> <code>body</code>
Context manager	<code>with manager as var:</code> <code>body</code>

Comprehensions	
List comp.	<code>[expr for var in iterable]</code>
Dict. comp.	<code>{k: v for var in iterable}</code>

Iterator Examples	
<code>range</code>	<code>list(range(3))</code> <code>→ [0, 1, 2]</code>
<code>zip</code>	<code>list(zip("ab", "AB"))</code> <code>→ [("a", "A"), ("b", "B")]</code>
<code>enumerate</code>	<code>list(enumerate("ab"))</code> <code>→ [(0, "a"), (1, "b")]</code>
<code>itertools.product</code>	<code>list(product(range(2), "AB"))</code> <code>→ [(0, "A"), (0, "B"), ...]</code>

PEP8 Names	
Functions, variables, etc.	<code>snake_case</code>
Classes, types, etc.	<code>CamelCase</code>
Constants	<code>SHOUTY_CASE</code>

NumPy

import numpy as np	
New array	<code>np.array([...])</code>
Index	<code>arr[0]</code> (1D, scalar) <code>arr[start:end]</code> (1D, slice) <code>arr[ax0, ax1, ...]</code> (multidim) <code>arr[np.newaxis]</code> (new axis)
Transpose	<code>arr.T</code> or <code>arr.transpose(axes)</code>
Reshape	<code>arr.reshape(new_shape)</code>
Reduce	<code>arr.sum(axis=axes)</code> or <code>arr.mean(axis=axes)</code> , etc.

Plotting

import matplotlib.pyplot as plt	
Plot	<code>plt.plot(xs, ys, 'style', label=label)</code>
Axis labels	<code>plt.xlabel(...)</code> and <code>plt.ylabel(...)</code>
Axis limits	<code>plt.xlim</code> and <code>plt.ylim</code>
Plot title	<code>plt.title(...)</code>
Legend	<code>plt.legend()</code>

IPython / Jupyter

Magic Commands	
Meas. execution time	<code>%timeit stmt</code>
Navigate dirs.	<code>%cd dirname</code> , <code>%pwd</code> , <code>%ls</code>
Inline plotting (NB)	<code>%matplotlib inline</code>
Help on symbol	<code>name?</code> (short) <code>name??</code> (complete)

Notebook Shortcut Keys	
Run current cell	Shift + Enter
New cell above	Esc, A
New cell below	Esc, B
Delete current cell	Esc, D, D
Change cell to Markdown	Esc, M
Comment/uncomment	Ctrl + /
Show all shortcuts	Esc, H