Introduction to Spyder

The IDE

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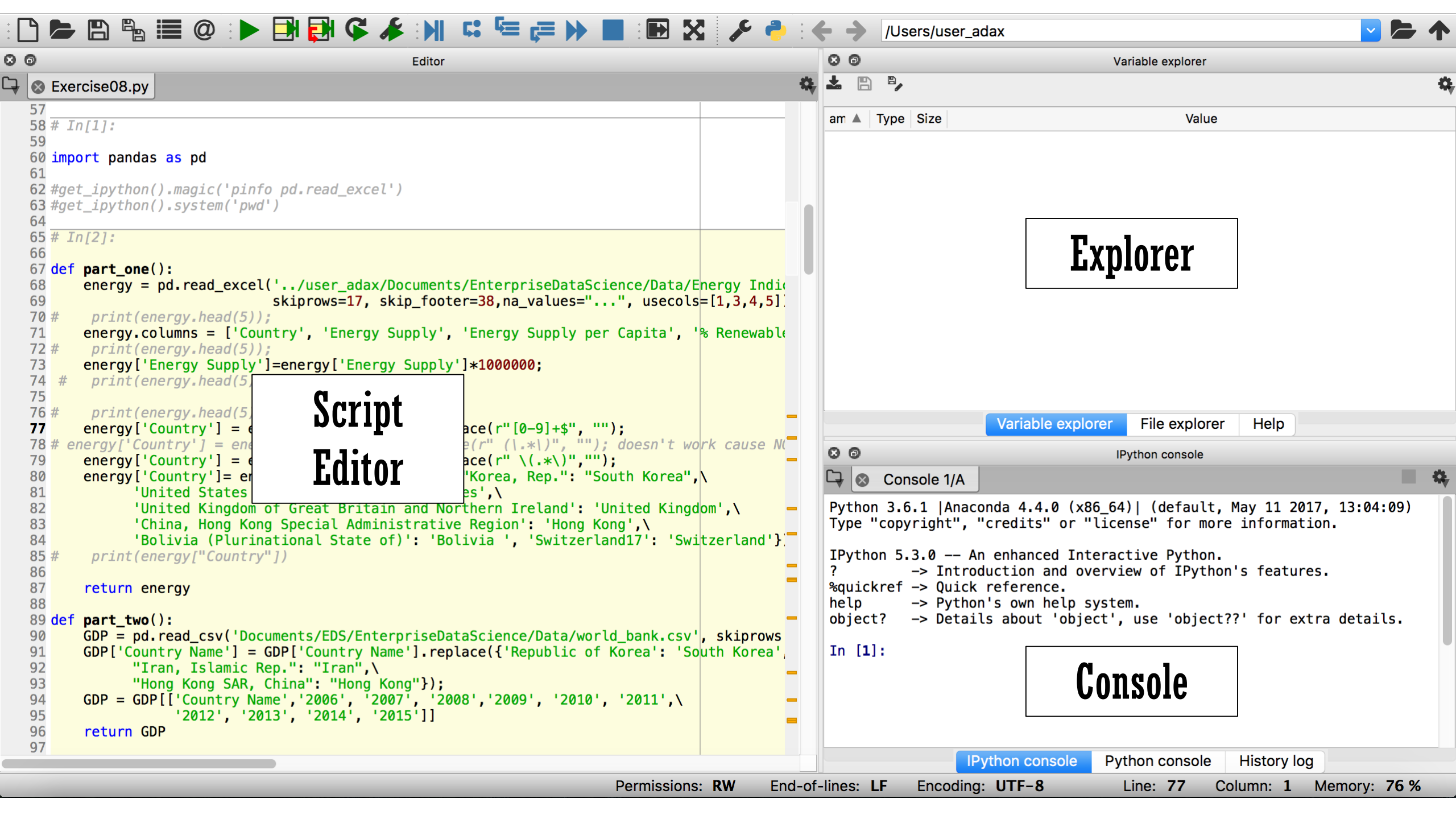
SPYDER

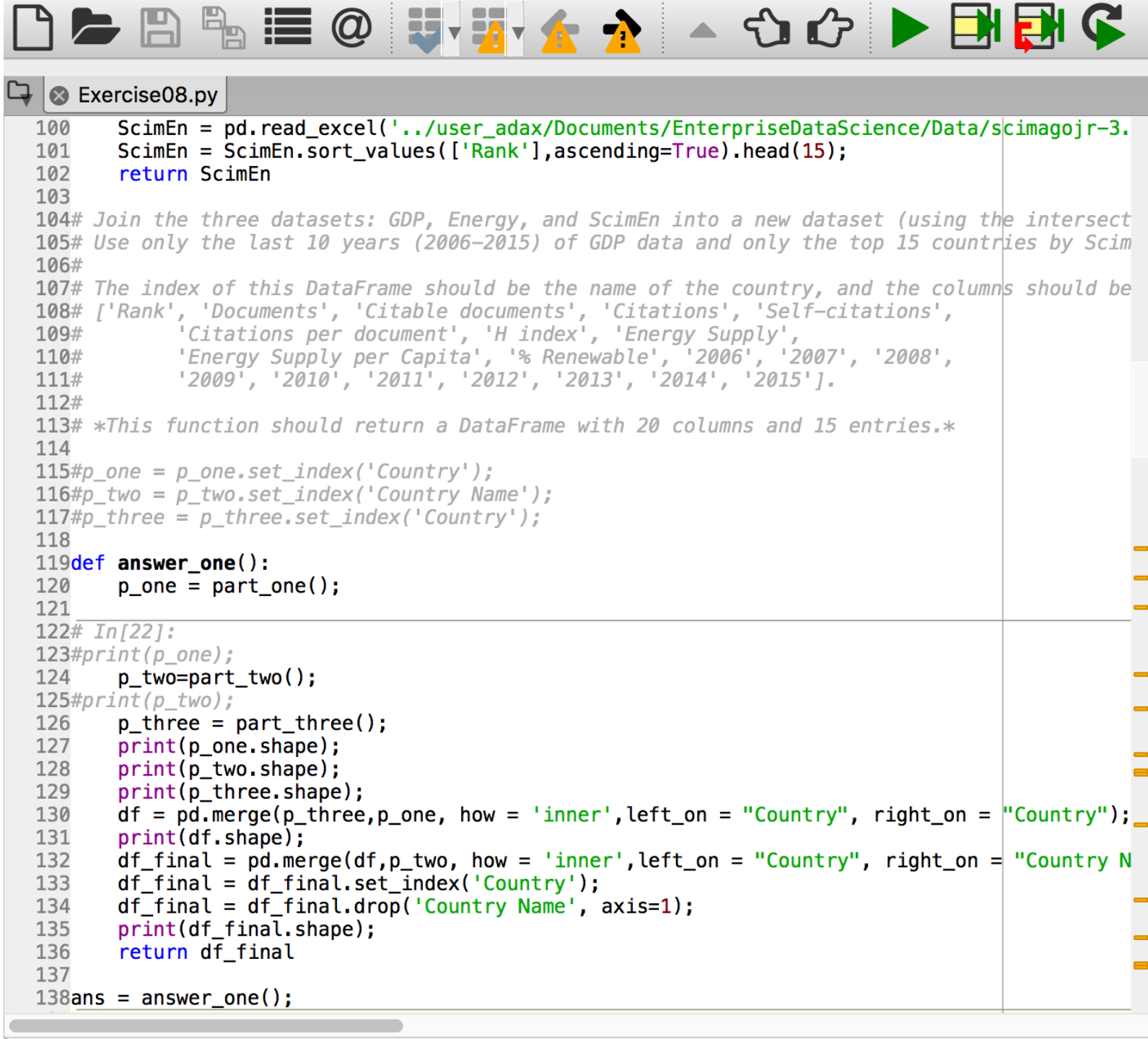
- **Spyder** (formerly known as **Pydee**) is an open source cross-platform integrated development environment (or IDE) for scientific programming in the Python language.
- Get it through Anaconda for this class.
- Features include:
  - editor with syntax highlighting and introspection for code completion.
  - support for multiple Python consoles (including IPython).
  - the ability to explore and edit variables from a GUI.

How does it look like?


/Users/user_adax
Editor
Exercise08.py
# In[1]:
import pandas as pd
#get_ipython().magic('pinfo pd.read_excel')
#get_ipython().system('pwd')
# In[2]:
def part_one():
energy = pd.read_excel('../user_adax/Documents/EnterpriseDataScience/Data/Energy Indi
skiprows=17, skip_footer=38,na_values="...", usecols=[1,3,4,5]
print(energy.head(5));
energy.columns = ['Country', 'Energy Supply', 'Energy Supply per Capita', '% Renewable
print(energy.head(5));
energy['Energy Supply']=energy['Energy Supply']*1000000;
print(energy.head(5
print(energy.head(5
ace(r"[0-9]+$", "");
energy['Country'] = en
e(r" (\.*\)", ""); doesn't work cause N
energy['Country'] = en
ace(r" \(.*\)","");
energy['Country']= en
'Korea, Rep.": "South Korea",\
'United States
es',\
'United Kingdom of Great Britain and Northern Ireland': 'United Kingdom',\
'China, Hong Kong Special Administrative Region': 'Hong Kong',\
'Bolivia (Plurinational State of)': 'Bolivia ', 'Switzerland17': 'Switzerland'}
print(energy["Country"])
return energy
def part_two():
GDP = pd.read_csv('Documents/EDS/EnterpriseDataScience/Data/world_bank.csv', skiprows
GDP['Country Name'] = GDP['Country Name'].replace({'Republic of Korea': 'South Korea',
"Iran, Islamic Rep.": "Iran",\
"Hong Kong SAR, China": "Hong Kong"});
GDP = GDP[['Country Name','2006', '2007', '2008','2009', '2010', '2011',\
'2012', '2013', '2014', '2015']]
return GDP
Script Editor
Variable explorer
am
Type
Size
Value
Explorer
Variable explorer
File explorer
Help
IPython console
Console 1/A
Python 3.6.1 |Anaconda 4.4.0 (x86_64)| (default, May 11 2017, 13:04:09)
Type "copyright", "credits" or "license" for more information.
IPython 5.3.0 -- An enhanced Interactive Python.
? -> Introduction and overview of IPython's features.
%quickref -> Quick reference.
help -> Python's own help system.
object? -> Details about 'object', use 'object??' for extra details.
In [1]:
Console
IPython console
Python console
History log
Permissions: RW
End-of-lines: LF
Encoding: UTF-8
Line: 77
Column: 1
Memory: 76 %

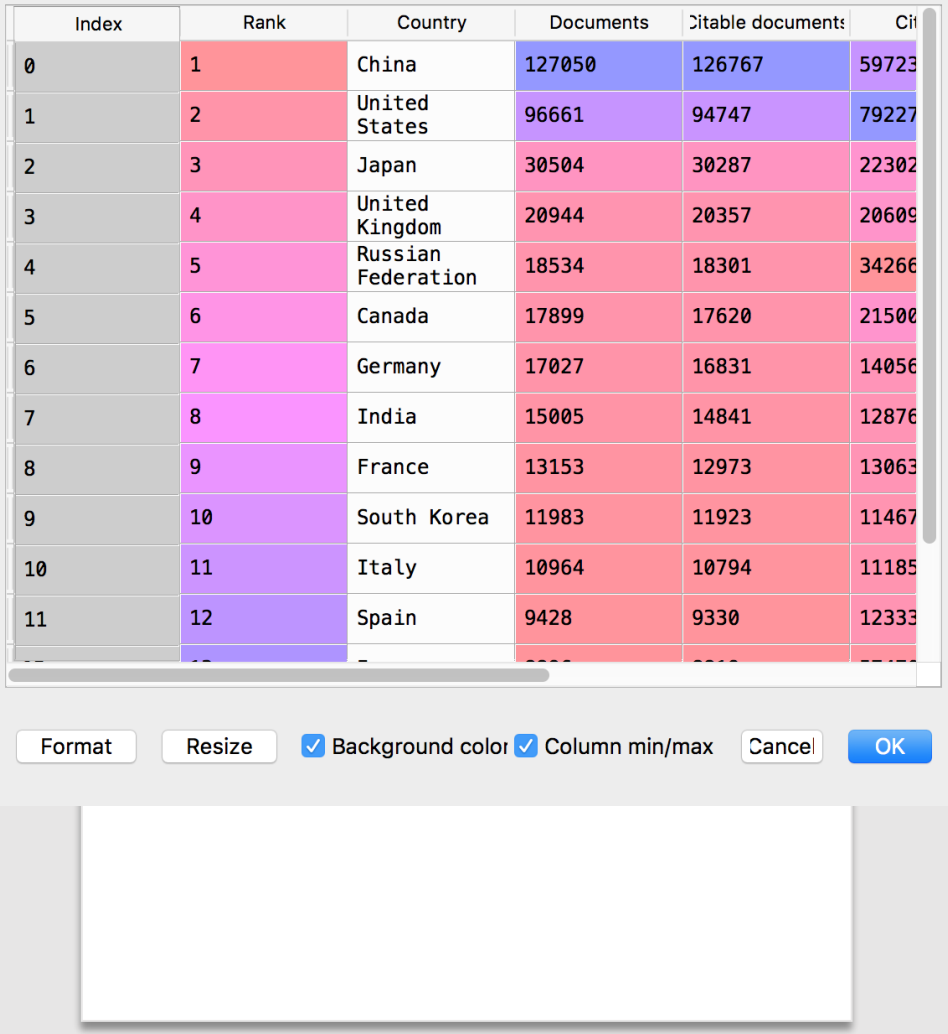
The Script Editor

- All the codes to be saved are written here.
- Standard form in .py
- Most python compilers read .py files and execute the commands within.
- Colour coded for easier tracking.
- The ONLY place where your codes are SAVED.



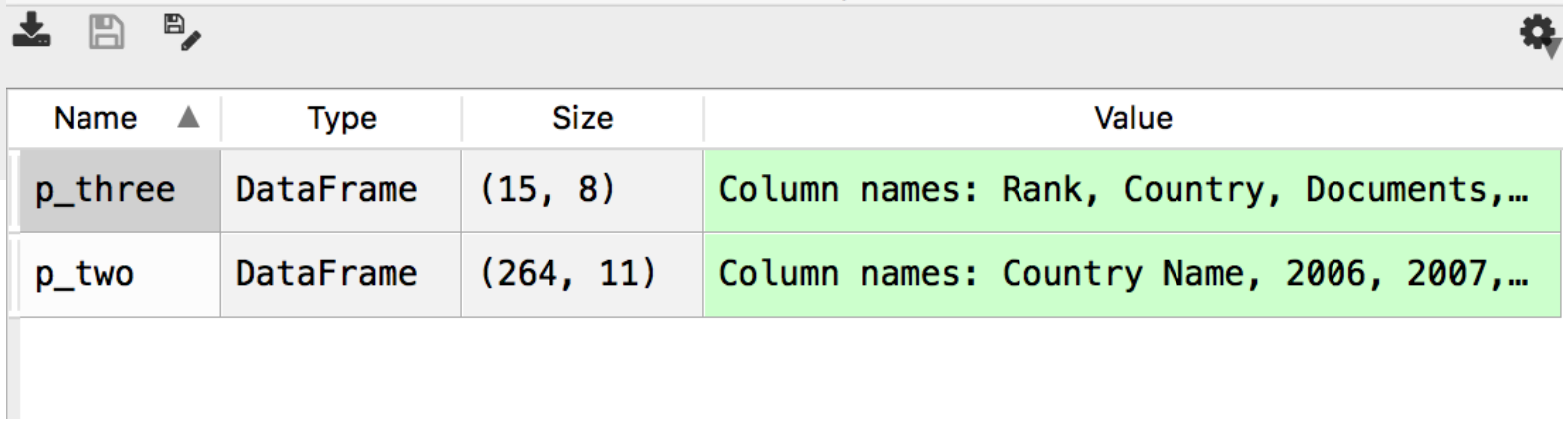
The Explorer

- The data used is saved in the explorer.
- Can double click to see how the data looks like.
- Good idea to check after doing some key operation to check if you are on the right track.



Index	Rank	Country	Documents	Citable documents	Cit
0	1	China	127050	126767	59723
1	2	United States	96661	94747	79227
2	3	Japan	30504	30287	22302
3	4	United Kingdom	20944	20357	20609
4	5	Russian Federation	18534	18301	34266
5	6	Canada	17899	17620	21500
6	7	Germany	17027	16831	14056
7	8	India	15005	14841	12876
8	9	France	13153	12973	13063
9	10	South Korea	11983	11923	11467
10	11	Italy	10964	10794	11185
11	12	Spain	9428	9330	12333

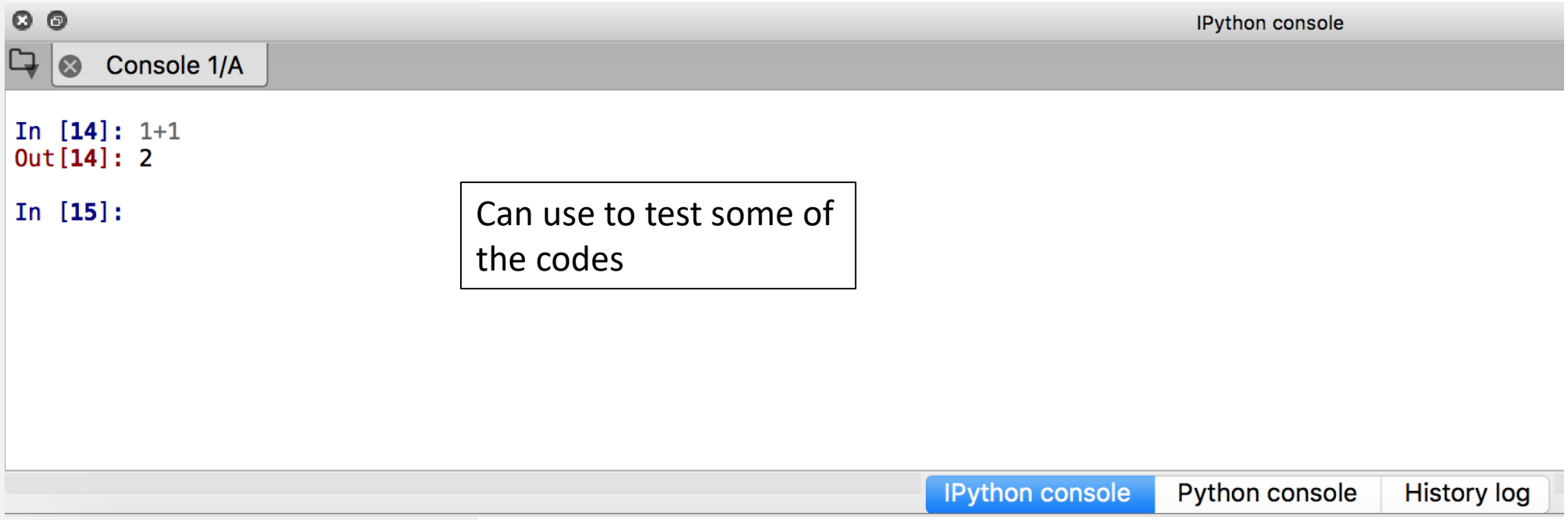
Format | Resize | Background color | Column min/max | Cancel | OK

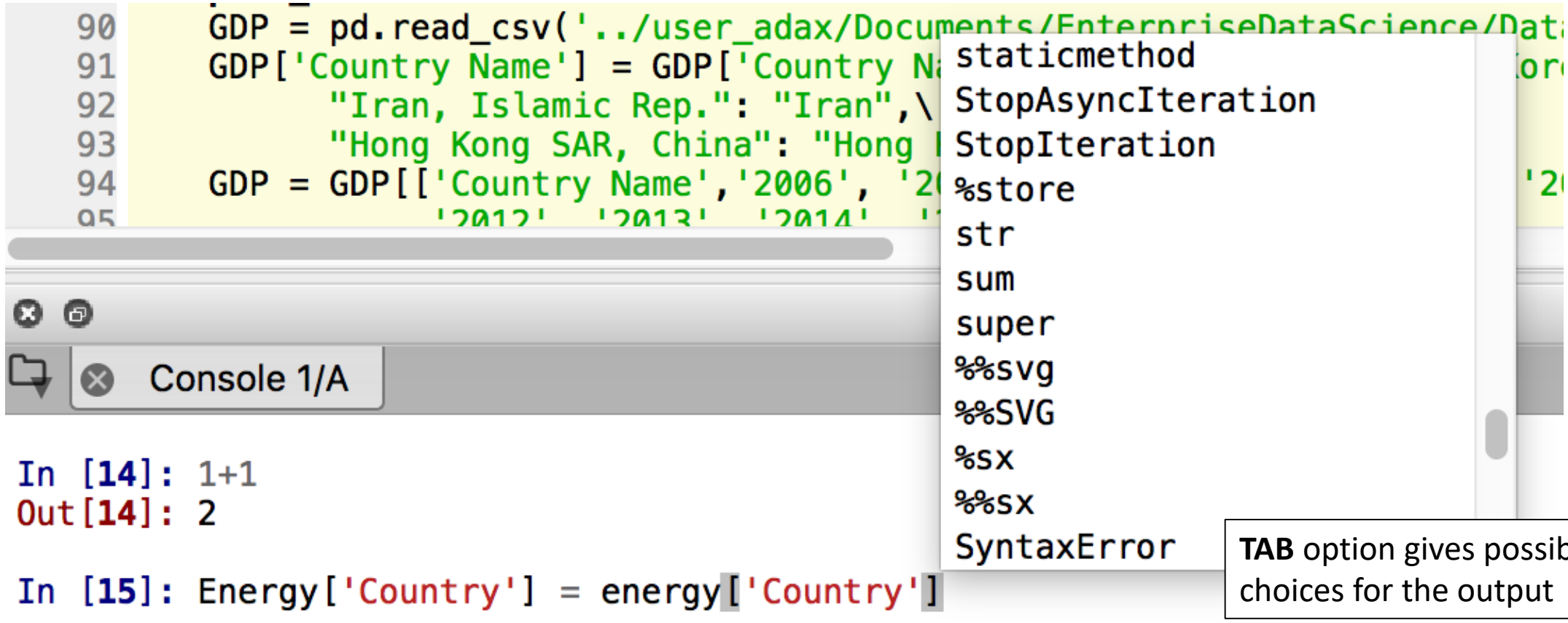


Name	Type	Size	Value
p_three	DataFrame	(15, 8)	Column names: Rank, Country, Documents,…
p_two	DataFrame	(264, 11)	Column names: Country Name, 2006, 2007,…

The Console

- Your new best friend, the '**TAB**' button.
- Can be used to check simple lines of codes.
- Typically used to check possible output and error before using the codes in the script editor.
- Does NOT saves the codes.
- Can be used to check possible output functions before proceeding to keying in the .py script.




90 GDP = pd.read_csv('../user_adax/Documents/EnterpriseDataScience/Data
91 GDP['Country Name'] = GDP['Country Na
92 "Iran, Islamic Rep.": "Iran",\
93 "Hong Kong SAR, China": "Hong
94 GDP = GDP[['Country Name','2006', '2
95 '2012', '2013', '2014',
staticmethod
StopAsyncIteration
StopIteration
%store
str
sum
super
%%svg
%%SVG
%sx
%%sx
SyntaxError
Console 1/A
In [14]: 1+1
Out[14]: 2
In [15]: Energy['Country'] = energy['Country']
TAB option gives possible choices for the output

Why IDE?

- IDE is usefully when designing large project.
- Constantly need to view the variables.