Topic 1, Part 2: Introduction to Jupyter Notebook

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Remember, Python is the programming language; Jupyter Notebook is the Integrated Development Environment (IDE)!

Types of cells



Code Cells

In these cells you put your Python Code

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You will recognise them easily, as they have In [] next to them

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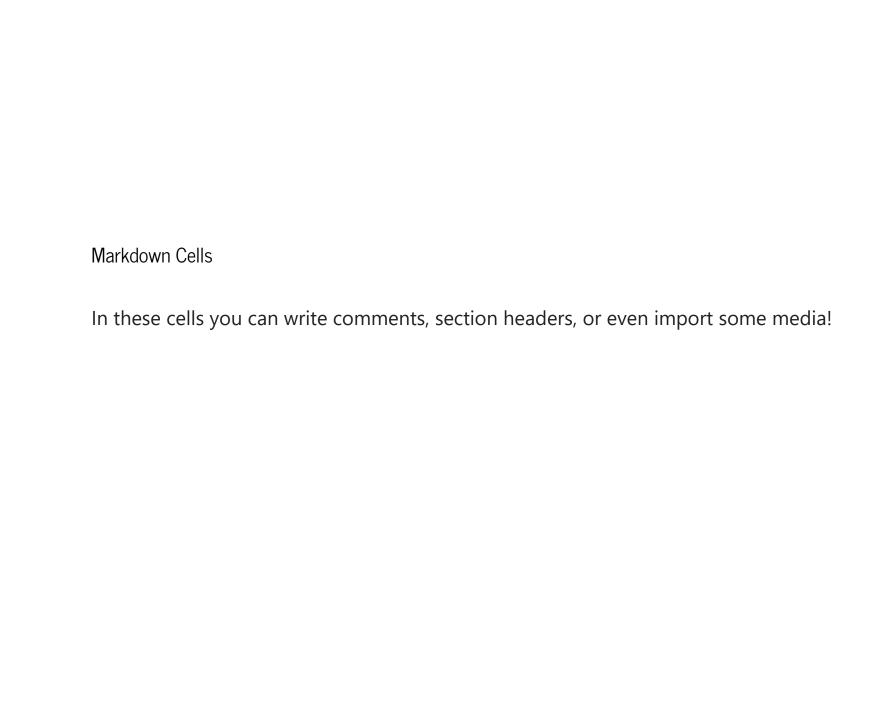
In these cells you put your Python Code

You will recognise them easily, as they have In [] next to them

In [1]: 1+1

Out[1]: 2





Markdown Cells In these cells you can write comments, section headers, or even import some media! Since you will be presenting your coursework as a Jupyter Notebook, I recommend you to have a very good idea of how to use the Markdown cells

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You can check this post for the "ultimate" guide on how to use markdown

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For instance, you can press "B" and add a cell below, instead of having to click in the options above or below this cell



Images from your local drive (using a Markdown cell):

- 1. Store the image in the same directory as the notebook
- 2. Use "!", then put a text inside squared brackets "[]" for reference, and parenthesis "()" for the file name



If you prefer, you can create a subdirectory for all of your images:



Inserting an image online (make sure you have access always)



Loading an image AS DATA, you can use packages such as OpenCV or Pillow (we will use this a lot during the module!)

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```
In [2]: # This cell will work only if the image is in the same directory as this note!
from PIL import Image
im = Image.open("Wind_turbines_in_southern_California.png")
im
```

Out[2]:



```
In [3]: # the variable im contains the pixels of the image
im.size
```

Out[3]: (490, 367)

Inserting a YouTube Video:

- 1. Go to YouTube
- 2. Under "Share" select embed
- 3. You will get an html code, copy it inside the following Python code

from IPython.display import HTML
HTML('embed html code here')

```
In [4]: import warnings;
warnings.simplefilter('ignore')
from IPython.display import HTML
HTML('<iframe width="560" height="315" src="https://www.youtube.com/embed/r-u0")
Out[4]: Data Analysis with Python - Full Course for Beginners (Num...</pre>
```

Loading data into a Jupyter Notebook

Just as we loaded the wind farm image as data before, you must know that we can load data from different extensions (.csv, .tsv, .xlsx) to our notebooks!

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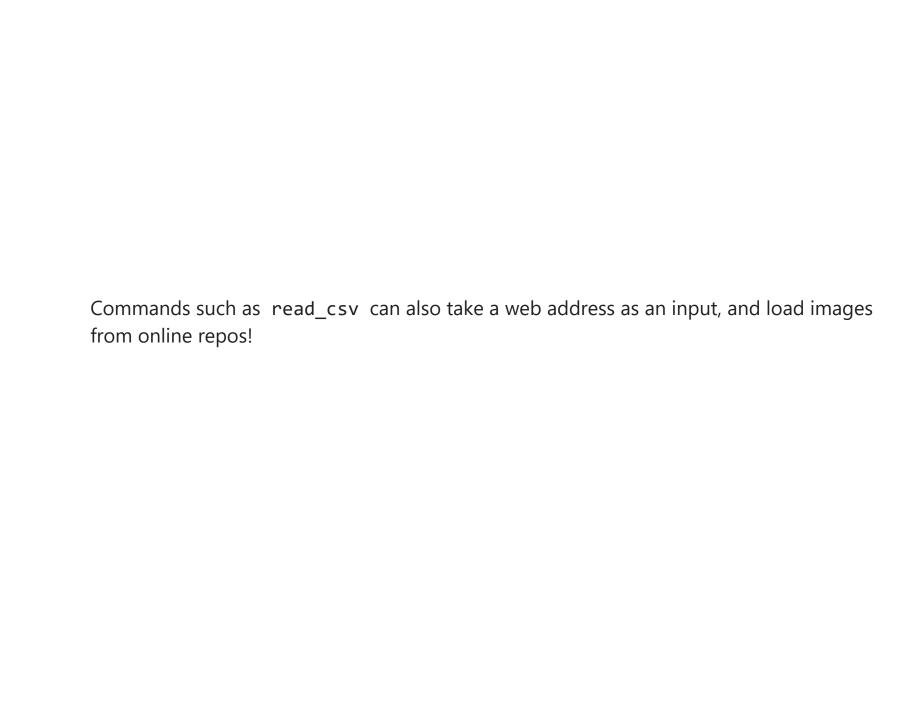
In [5]: import pandas as pd

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The easiest way to do so is with a Python module called Pandas

```
In [5]: import pandas as pd
In [6]: # This cell will work only if the "data.csv" is in the same directory as this data = pd.read_csv('data.csv')
data
```

Out[6]:		Name	Age	Height
	0	Nick	21	1.85
	1	Chris	29	1.79
	2	Tim	28	1.75
	3	Ron	34	1.81
	4	Monica	35	1.69
	5	Cassandra	21	1.66



Commands such as read_csv can also take a web address as an input, and load images from online repos!
For instance, if data.csv is in my Dropbox, I can copy the dropbox link, change dl=0 for raw=1 and load the file

This command will run anywhere (as long as you have internet connection)
data_dropbox = pd.read_csv('https://www.dropbox.com/s/my97tgyus8s05e1/data.csv
data_dropbox

Out[7]:		Name	Age	Height
	0	Nick	21	1.85
	1	Chris	29	1.79
	2	Tim	28	1.75
	3	Ron	34	1.81
	4	Monica	35	1.69
	5	Cassandra	21	1.66