GENERAL ASSEMBLY

INTRO TO DATA SCIENCE

PYTHON AND LINEAR ALGEBRA REVIEW

QUESTIONS?

WHAT WAS THE MOST INTERESTING THING YOU LEARNED?

WHAT WAS THE HARDEST TO GRASP?

I. JUPYTER NOTEBOOK
II. PYTHON
III. PYTHON EXERCISE

- Understand Python data structures, including strings, lists, tuples, etc.
- Understand Python flow control
- Understand how to load data from a file in Python
- Review linear algebra concepts such as matrix, vector, and dot product
- Be able to use those concepts in Python

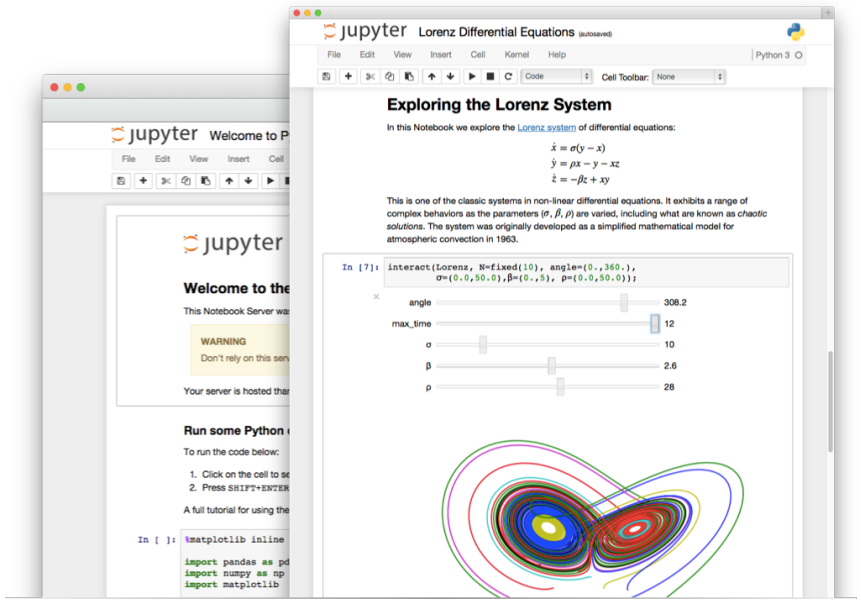
JUPYTER NOTEBOOK OVERVIEW

JUPYTER AND IPYTHON NOTEBOOKS

The Jupyter Notebook is a web application that allows you to create and share documents that contain live code, equations, visualizations and explanatory text.

Uses include:

- *data cleaning and transformation*
- *numerical simulation*
- *statistical modeling*
- *machine learning*
- *and much more.*



Jupyter Architecture

The Jupyter Notebook is based on a set of open standards for interactive computing. Think HTML and CSS for interactive computing on the web. These open standards can be leveraged by third party developers to build customized applications with embedded interactive computing.

Notebook Document Format

Learn more

Interactive Computing Protocol

Learn more

The Kernel

Learn more

Jupyter Architecture

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The Notebook Document Format

Jupyter Notebooks are an open document format based on JSON. They contain a complete record of the user's sessions and embed code, narrative text, equations and rich output.

Go back

Interactive Computing Protocol

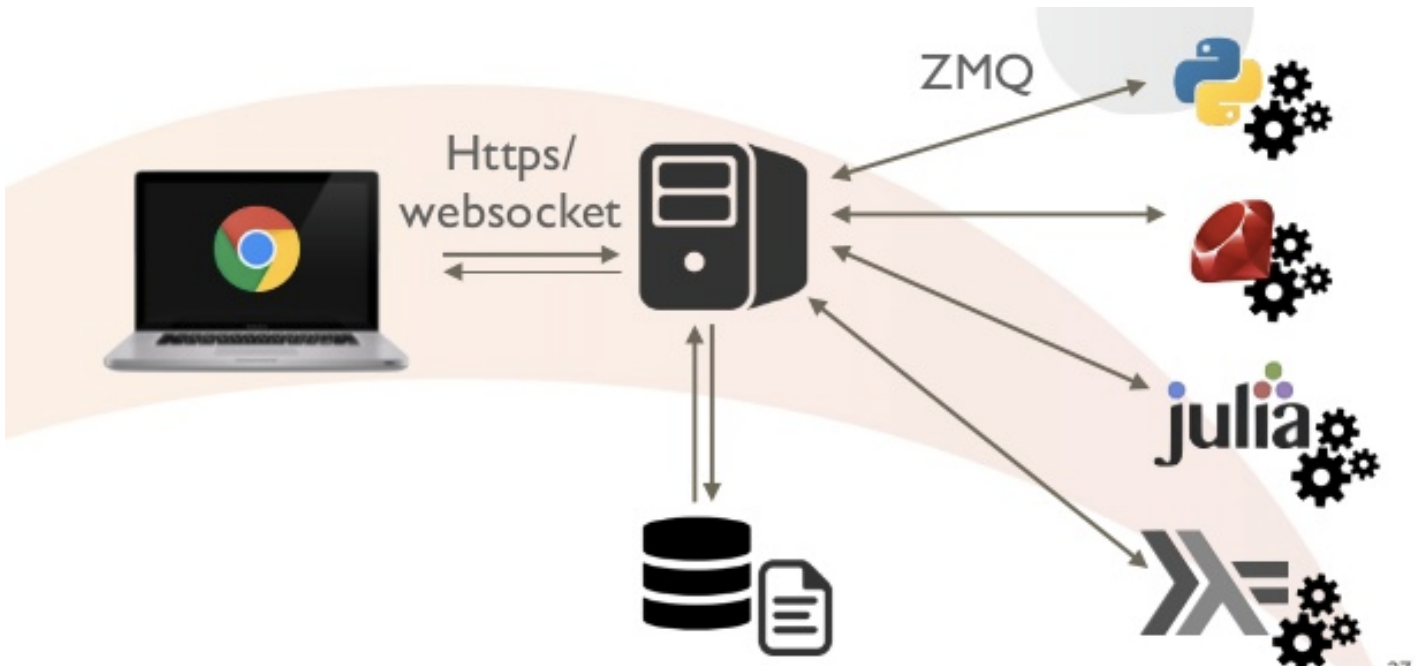
The Notebook communicates with computational Kernels using the Interactive Computing Protocol, an open network protocol based on JSON data over ZMQ and WebSockets.

Go back

The Kernel

Kernels are processes that run interactive code in a particular programming language and return output to the user. Kernels also respond to tab completion and introspection requests.

Go back



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jupyter
Files
Running
Clusters
Select items to perform actions on them.
Upload
New
homework
labs
lectures
README.md

JUPYTER AND IPYTHON NOTEBOOKS

50+ kernels available!

https://github.com/ipython/ipython/wiki/IPython-kernels-for-other-languages

Files Running Clusters

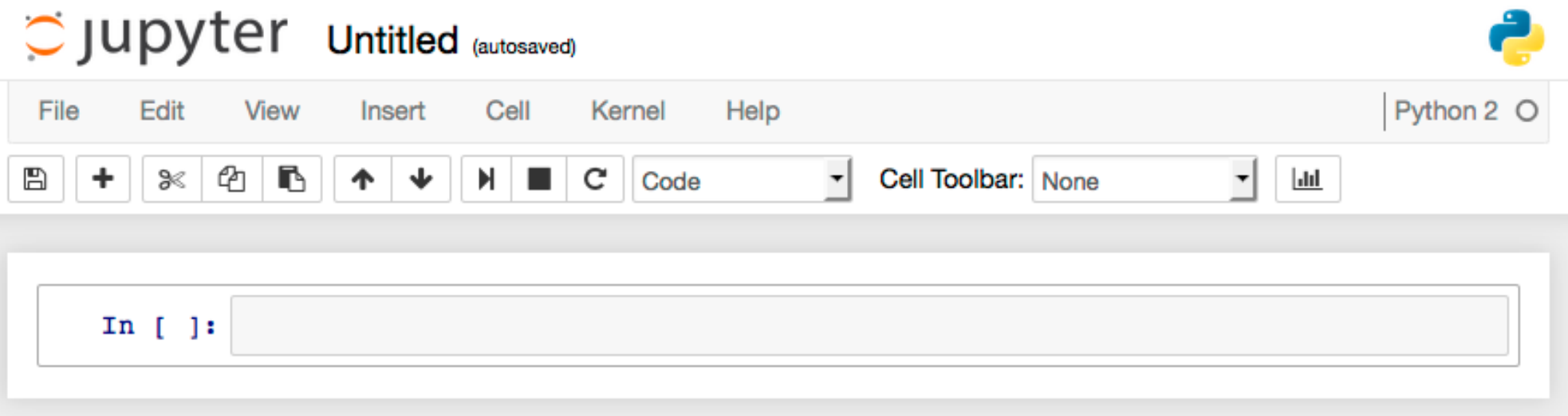
Select items to perform actions on them.

Upload New

Text File
Folder
Terminal

Notebooks
Julia 0.4.0
Python 2
iTorch

homework
labs
lectures
README.md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Help
Python 2
Code
Cell Toolbar:
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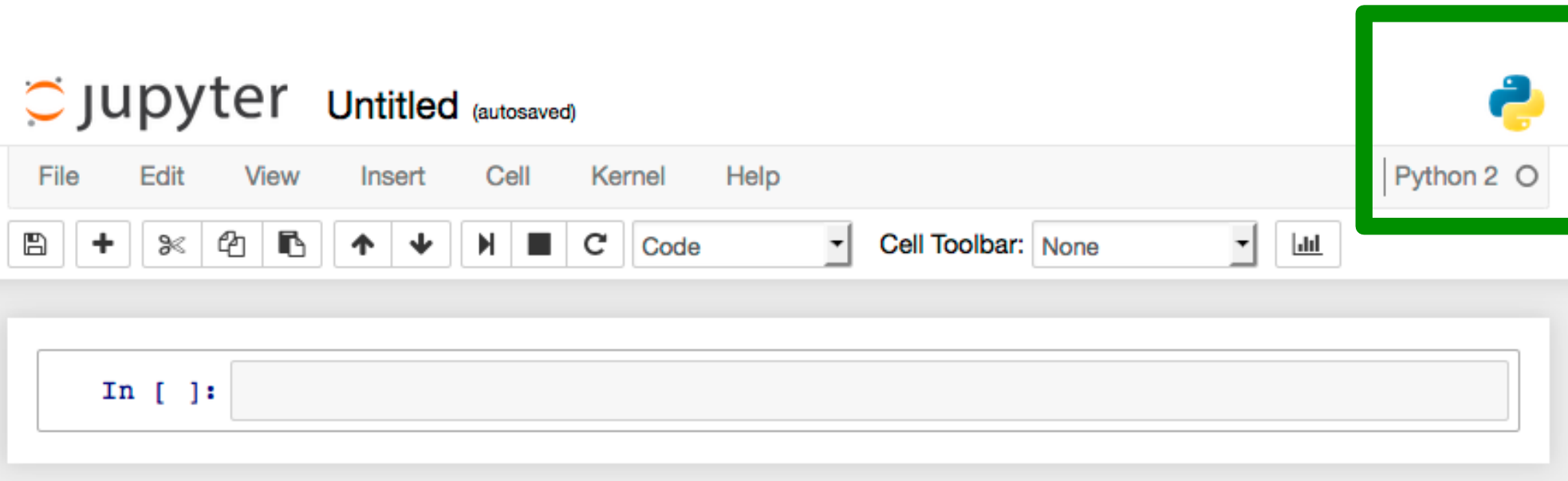
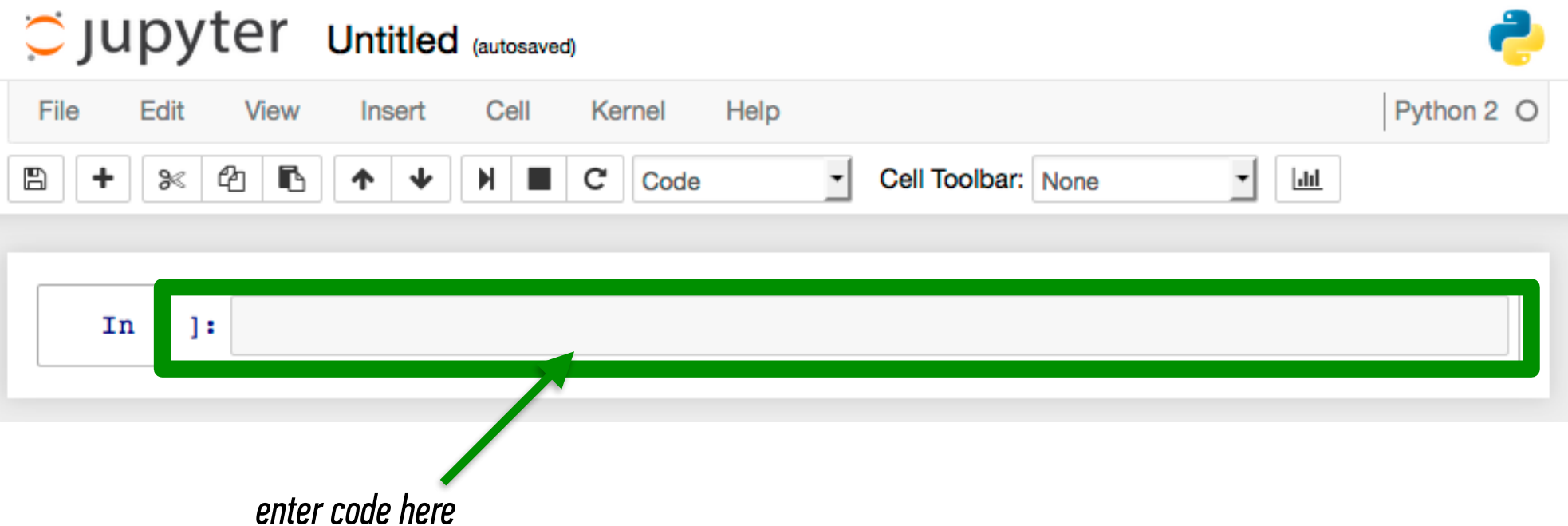
In [ ]:

JUPYTER AND IPYTHON NOTEBOOKS

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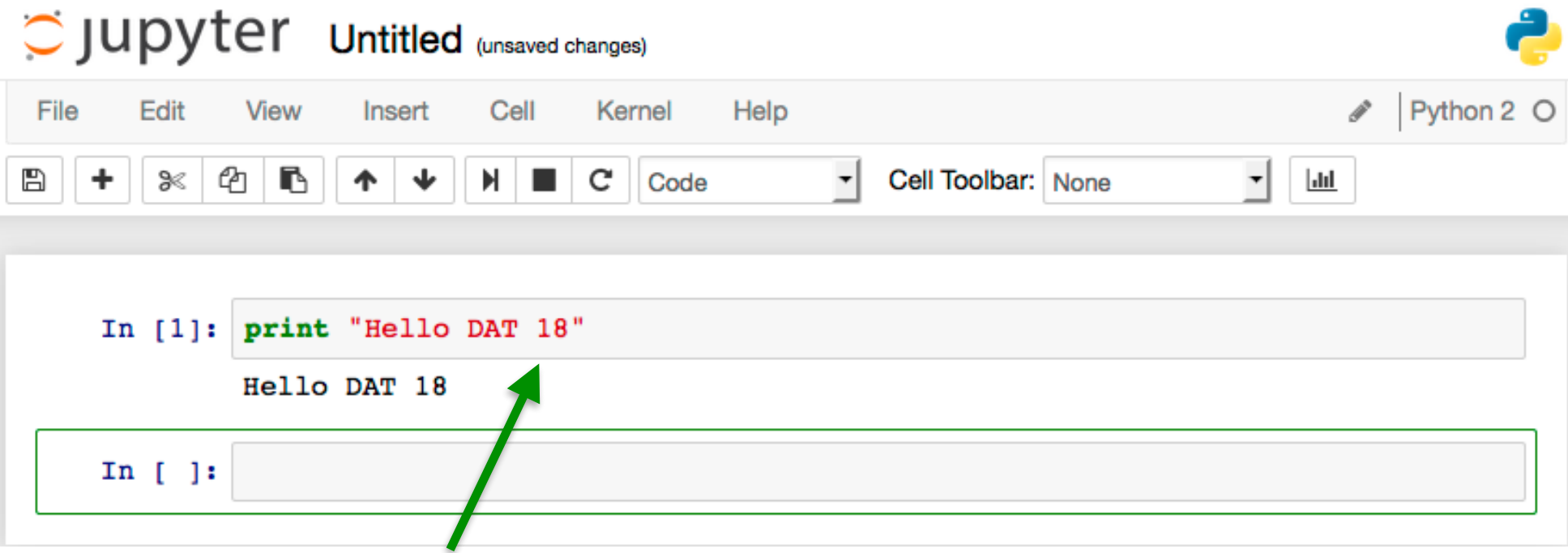
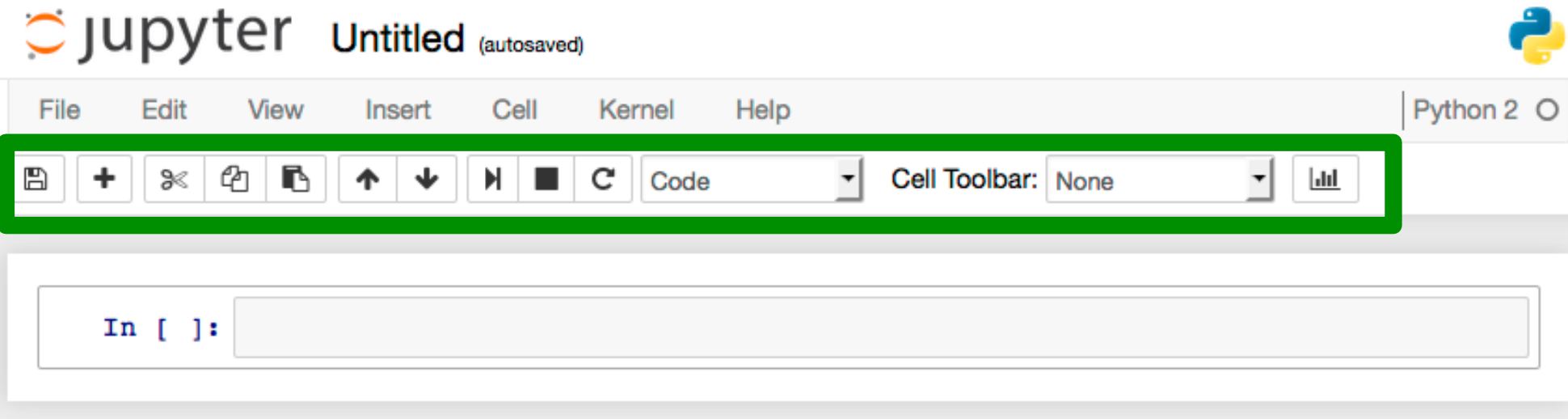


Shift + Enter runs code and returns results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Help
Python 2
Code
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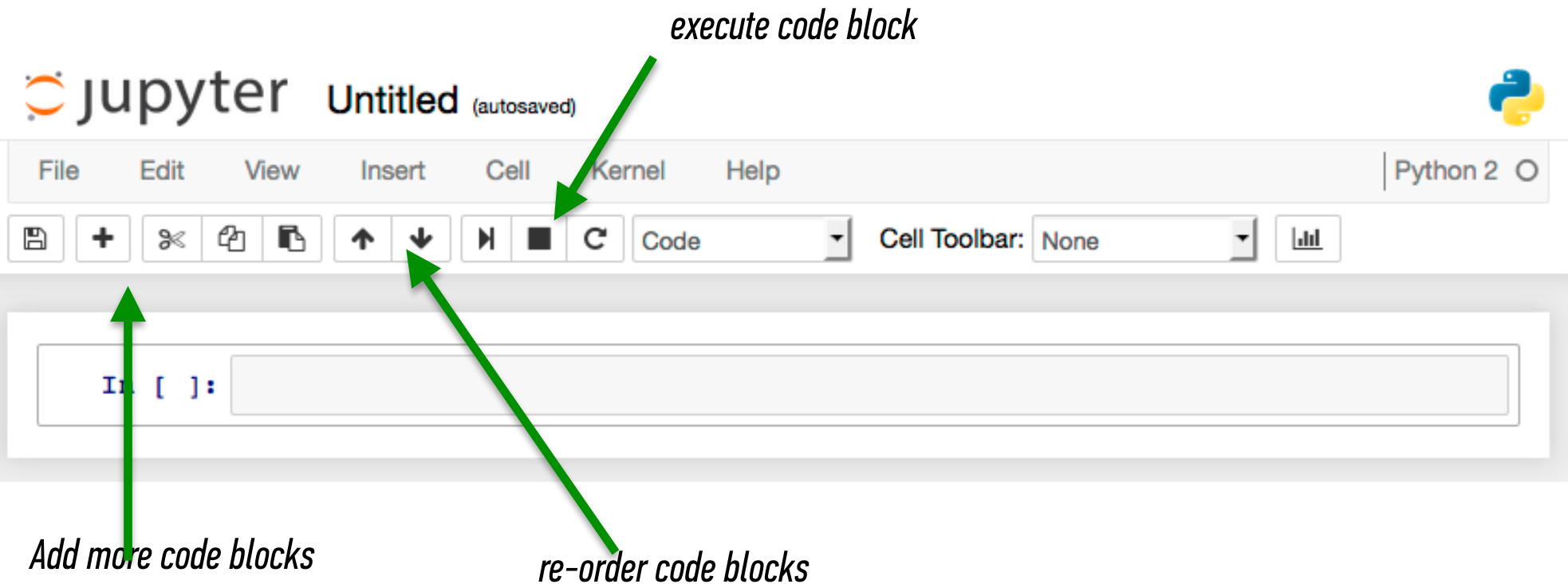
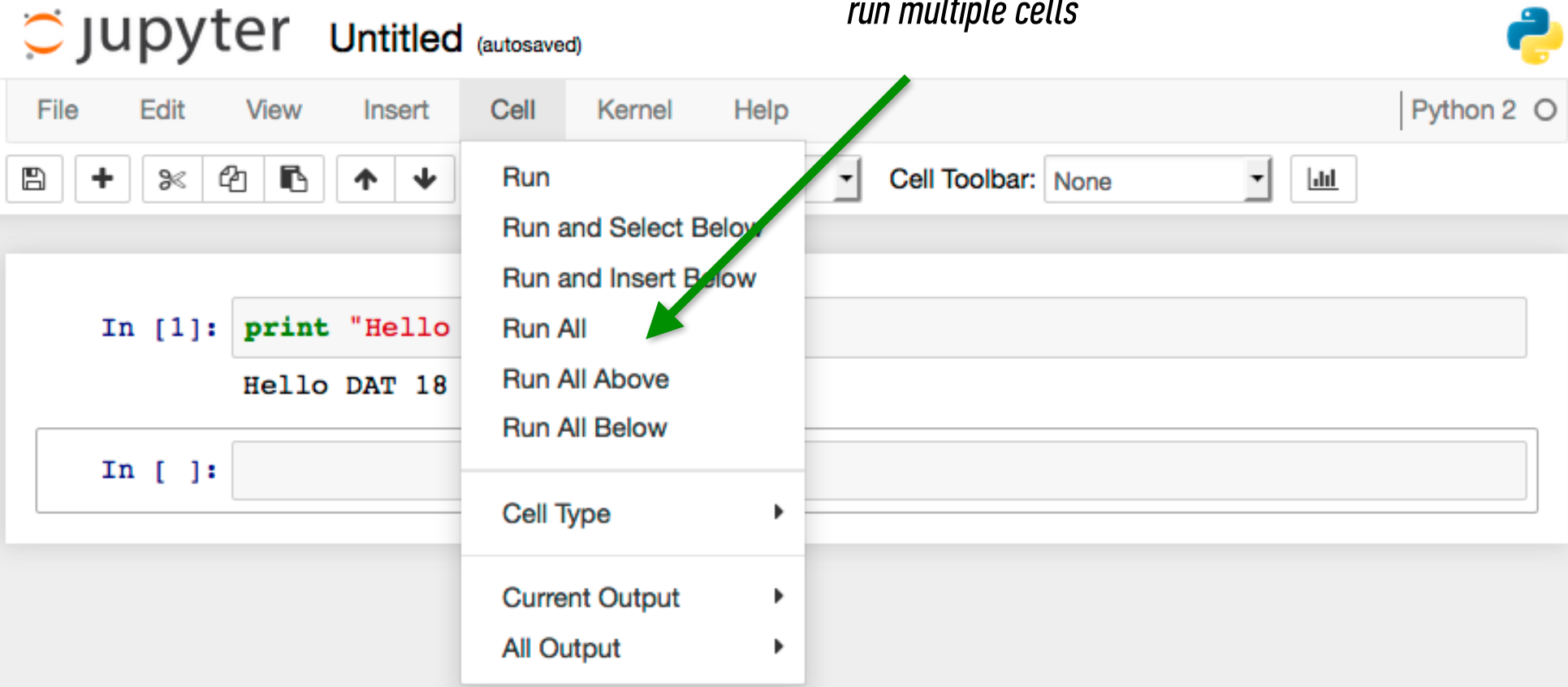
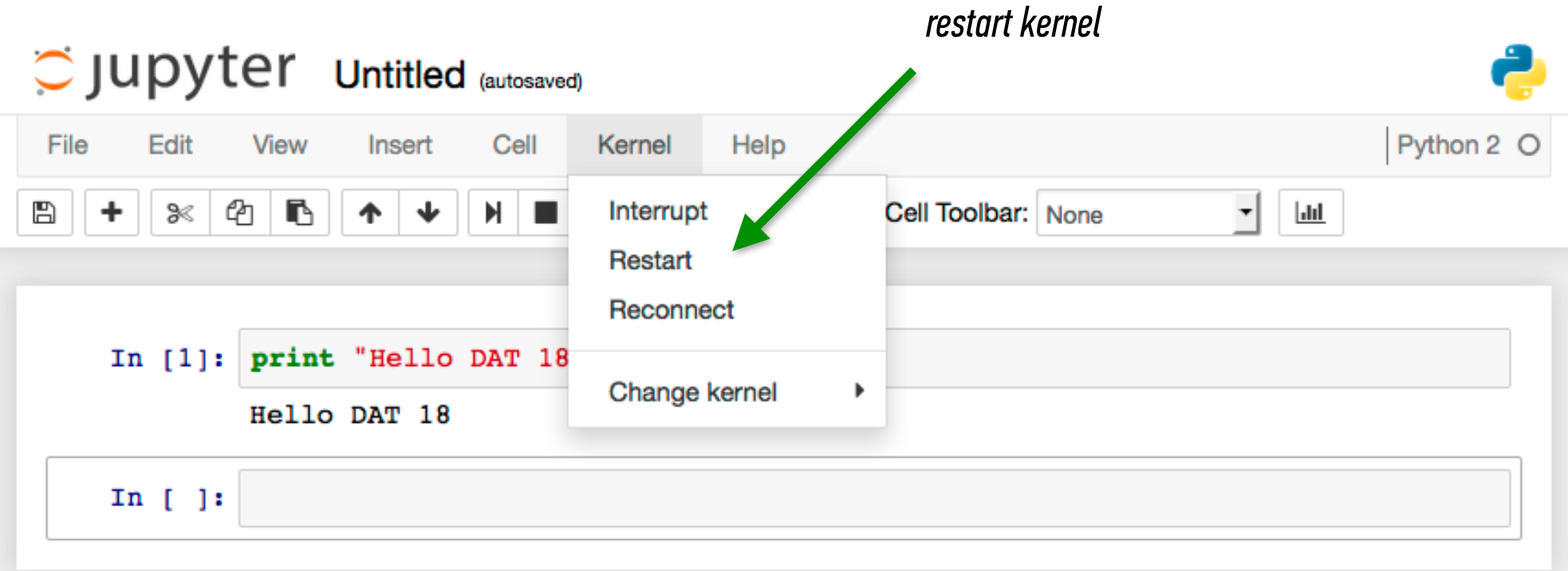
None
In [ ]:


execute code block
jupyter
Untitled
(autosaved)
File
Edit
View
Insert
Cell
Kernel
Help
Python 2
Code
Cell Toolbar:
None
In [ ]:
Add more code blocks
re-order code blocks

run multiple cells




restart kernel
jupyter
Untitled
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File
Edit
View
Insert
Cell
Kernel
Help
Python 2
Interrupt
Restart
Reconnect
Change kernel
Cell Toolbar:
None
In [1]:
print "Hello DAT 18
Hello DAT 18
In [ ]:

QUESTIONS?