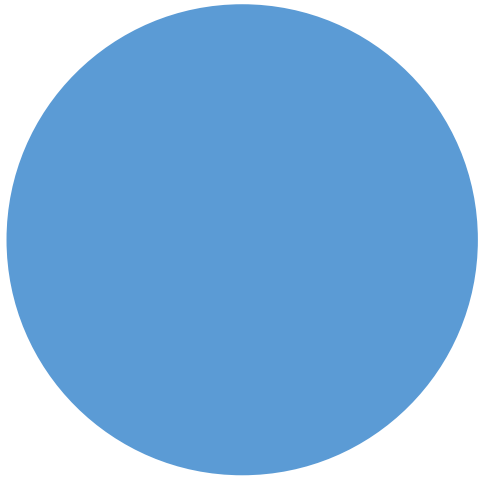
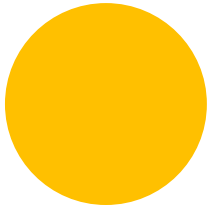

Interactive Programming F#

Luis Quintanilla
@ljquintanilla

Hello

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Code & Slides

http://bit.ly/NYCNETDevs072019

Agenda

Development Experience

Development Environments

REPL / F# Scripts
Fsharp.Formatting
FsLab Journal

Jupyter

Notebooks
Ecosystem

F# and Jupyter Notebooks

Local
Hosted

.NET – A unified platform

What Do You Want Out of Your Development Experience/ Environment?

Interactive

Reproducible

Documented

Collaborative

Extensible

Read-Evaluate-Print Loop (REPL)

Interactive

Reproducible?

Documented?

Collaborative?

Extensible?

Demo Fsharp.Formatting

Fsharp .Formatting

Interactive?

Reproducible

Documented

Collaborative?

Extensible

Demo FsLab Journal

FsLab Journal

Interactive

Reproducible

Documented

Extensible

Collaborative?

Jupyter

Open Source Interactive Computing Environment

Over 40 languages

Notebooks

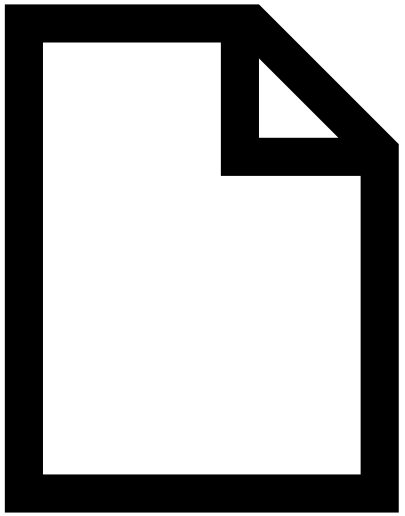
Hub

- Anaconda
  - Data Science Platform
    - Package Management
    - Tooling
    - IDE

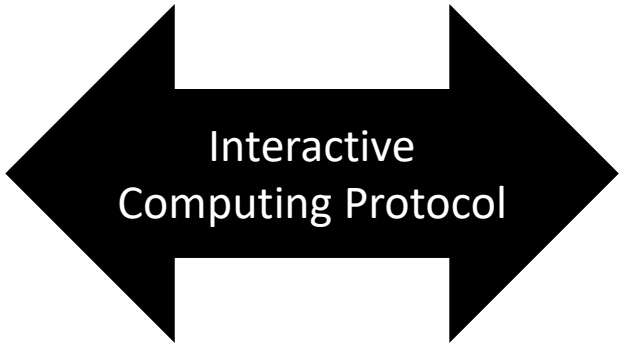
Getting Started Jupyter Notebooks

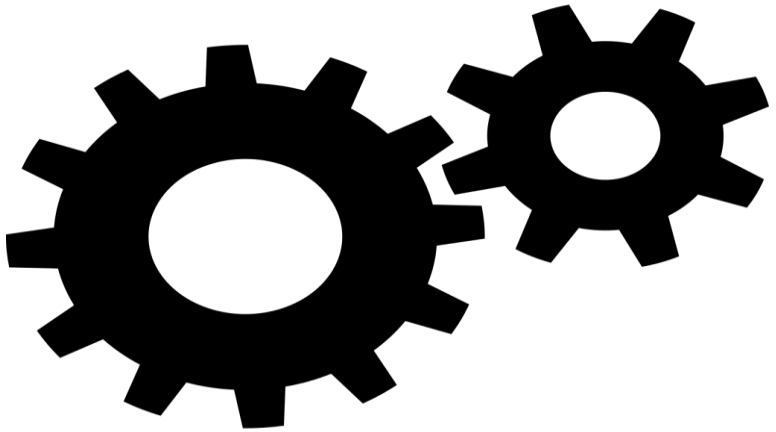
Demo Jupyter Notebooks

Jupyter Notebooks Internals



Notebook Document Format



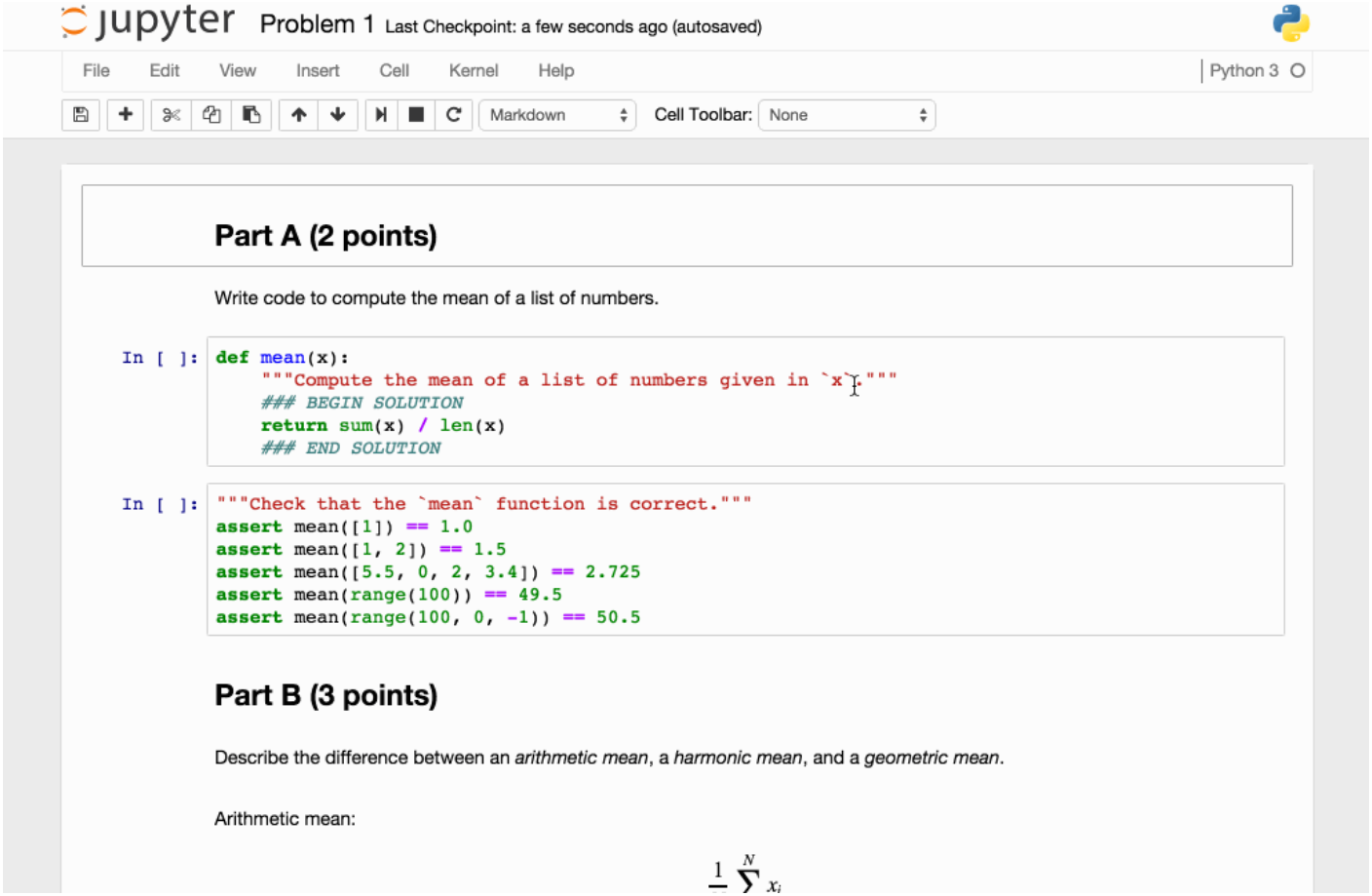


Kernel

- Extensions
  - NBGrader
  - Papermill
  - Many more…

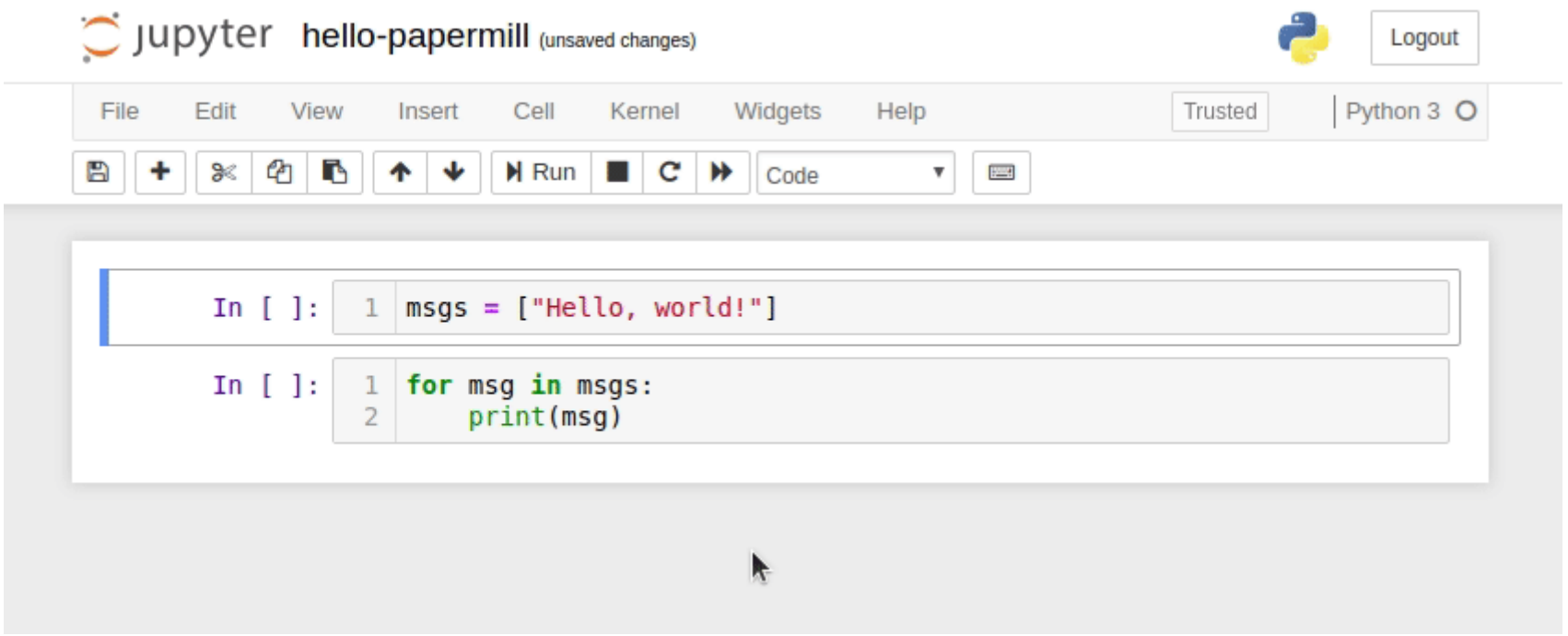
Jupyter Ecosystem

NBGrader



Source: https://github.com/jupyter/nbgrader

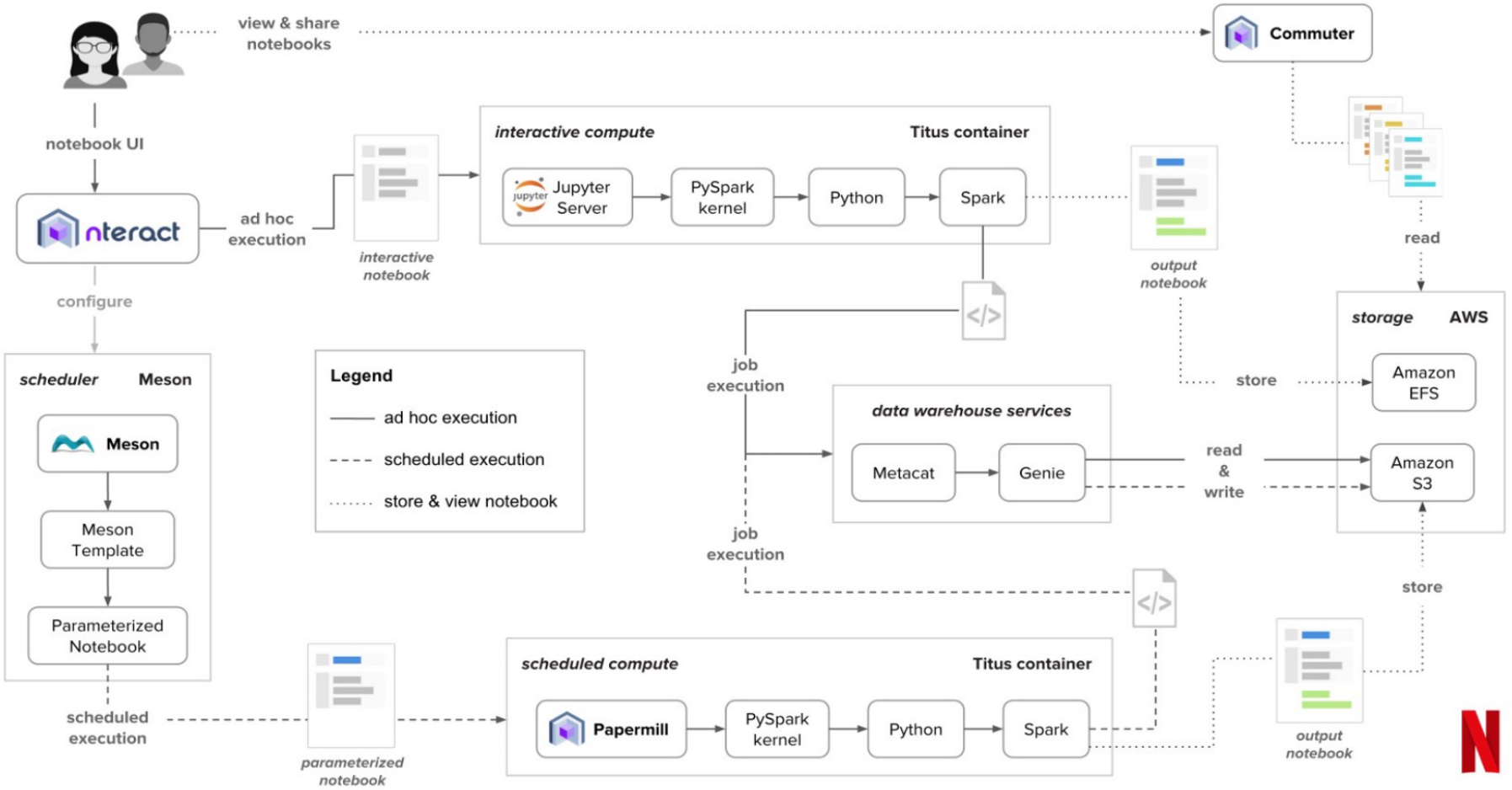
Papermill




```
$ papermill local/input.ipynb s3://bkt/output.ipynb -p alpha 0.6 -p l1_ratio 0.1
```

Source: https://github.com/nteract/papermill

Notebooks in Production



Source: https://medium.com/netflix-techblog/notebook-innovation-591ee3221233

Jupyter

Interactive

Reproducible

Documented

Collaborative

Extensible

Jupyter Notebooks F#

F# 4.1

Jupyter 5.7.7

Cross-Platform

Local – IFSharp

Hosted – Azure Notebooks

Demo IFSharp

Demo Azure Notebooks

Takeaways

F# provides several environments

Choose your own adventure

Jupyter Notebooks make prototyping, documentation and learning easy

Jupyter Notebooks open standards make it easy to extend the tool

Questions

Resources

- http://fsprojects.github.io/FSharp.Formatting/literate.html
- https://fslab.org/download/
- https://jupyter.org/
- https://github.com/fsprojects/IfSharp
- https://github.com/jupyter/nbgrader
- https://github.com/nteract/papermill
- https://notebooks.azure.com/lqdev/projects/nycnetdevs201907