ASWF Jupyter Notebooks SCRATCH

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COLLABORATION VIA GITHUB:

Notebook file extension: *.ipynb

https://nbviewer.jupyter.org/
   A simple way to share Jupyter Notebooks

https://www.tutorialspoint.com/jupyter/sharing_jupyter_notebook_using_github_and_nbviewer.htm
   Github > NBViewer > Binder for interaction

https://cocalc.com/doc/jupyter-notebook.html
   Popular website for interactive web interface recommended by intro courses for data sci/ML
   Note: Git[hub] interaction with a paid account, notebook execution is available w/o a login

https://github.blog/2015-05-07-github-jupyter-notebooks-3/
   Github blog post on topic
https://github.com/jupyter/jupyter/wiki/A-gallery-of-interesting-Jupyter-Notebooks#general-python-programming
   Link referenced in blog post on interesting examples
   NOTE: Github only renders notebooks to HTML, it does not offer any execution

nbconvert : https://github.com/jupyter/nbconvert
   converts to HTML|MD so can use Git[hub] for version control
https://nextjournal.com/schmudde/how-to-version-control-jupyter
   How to Version Control Jupyter Notebook - The Definitive Guide
   Uses NBDime instead of nbconvert

Also there's Jupyter Labs web based collab and a couple hub installs available.

WORKFLOWS:

Multiple IPy kernels
https://medium.com/@ace139/enable-multiple-kernels-in-jupyter-notebooks-6098c738fe72

Papermill
https://github.com/nteract/papermill
a tool for parameterizing, executing, and analyzing Jupyter Notebooks.

"Do you want to run a notebook and depending on its results, choose a particular notebook to run next? You can now programmatically execute a workflow without having to copy and paste from notebook to notebook manually."

"Papermill takes an opinionated approach to notebook parameterization and execution based on our experiences using notebooks at scale in data pipelines."

Jupyter Python Notebook Keyboard Shortcuts and Text Snippets for Beginners
http://maxmelnick.com/2016/04/19/python-beginner-tips-and-tricks.html
Note: Mac keys

VSCode bridge
https://blog.jupyter.org/connect-to-a-jupyterhub-from-visual-studio-code-ed7ed3a31bcb
https://code.visualstudio.com/docs/python/jupyter-support

PyCharm bridge
(Note: this is a professional version feature)
https://www.jetbrains.com/help/pycharm/jupyter-notebook-support.html

IPython and Shell Commands
https://jakevdp.github.io/PythonDataScienceHandbook/01.05-ipython-and-shell-commands.html

The Structural Pattern Matching PEP links to a Binder notebook that includes a Python interpreter with the feature enabled and examples.

Tutorial: Advanced Jupyter Notebooks
https://www.dataquest.io/blog/advanced-jupyter-notebooks-tutorial/
"This Jupyter Notebooks tutorial aims to straighten out some sources of confusion and spread ideas that pique your interest and spark your imagination."

And voilà! … from Jupyter notebooks to standalone applications and dashboards
https://blog.jupyter.org/and-voil%C3%A0-f6a2c08a4a93
"Voilà turns Jupyter notebooks into standalone web applications."

Embed or view Jupyter/IPython notebooks in Confluence
https://medium.com/bitwelt-software/embed-or-view-jupyter-ipython-notebooks-in-confluence-98a4fec07170

Valassis-Digital-Media / nbconflux -
converts Jupyter Notebooks to Atlassian Confluence pages using nbconvert.
https://github.com/Valassis-Digital-Media/nbconflux

Commonly used Machine Learning Algorithms (with Python and R Codes)
https://www.analyticsvidhya.com/blog/2017/09/common-machine-learning-algorithms/

A Jupyter kernel for SQLite
https://blog.jupyter.org/a-jupyter-kernel-for-sqlite-9549c5dcf551
https://github.com/jupyter-xeus/xeus-sqlite

USE CASES:

Beyond Interactive: Notebook Innovation at Netflix
https://netflixtechblog.com/notebook-innovation-591ee3221233
Snippet - "To understand why the Jupyter notebook is so compelling for us, consider the core functionality it provides:
    a messaging protocol for introspecting and executing code which is language agnostic
    an editable file format for describing and capturing code, code output, and markdown notes
    a web-based UI for interactively writing and running code as well as visualizing outputs"

Integrate Jupyter Notebook into Data Pipelines
How to schedule and automate Jupyter using Papermill.
https://towardsdatascience.com/integrate-jupyter-into-your-data-pipeline-9a02fab3cee5
Snippet - "The biggest treasure for me is learning that Jupyter with nteract and papermill plugged in allow developers to parameterize, execute (even concurrently) and analyze your notebooks, and it can further be scheduled by simply adding some Cron strings (or using any event consuming tool)!"

Powering Documentation with Jupyter Notebooks
https://medium.com/imandra/powering-documentation-with-jupyter-notebooks-eb3c7ae10069
Snippet - "This post is a quick rundown of why we decided to produce our documentation, the journey of getting there, and the various pieces involved."
(Note: uses Imandra, a powerful reasoning engine backed by Jupyter notebooks)

(Note: see footer at the bottom of this document)

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Document link:
https://docs.google.com/document/d/1Go5XQbAhTkW0jIn4CAYnuEGtkBG_1TIiutZiTXySFGk/edit?usp=sharing

Document style info:
This is a "lean" style document of harder to find curated information focused on ASWF TSC/WG stakeholder interests. It is not meant as an entry level document for general getting started information easily searched for and found.
Feel free to make any type of comments in the side column.

Other associated documents links:
NOTE: This information is being transferred to the ASWF USD Working Group Wiki Page for further development and open collaboration

ASWF Jupyter Notebooks - Intro SCRATCH - introductory level
https://docs.google.com/document/d/1ryThQmZNaWIqS-TUz7hKwhCQd26ABlkTjrxgavQMijw/edit?usp=sharing

ASWF Jupyter Notebooks - Advanced SCRATCH - advanced level
https://docs.google.com/document/d/1I6MWEzfuaxc435HxImwm96G38f0hmQVwWDqyW0I-Qgc/edit?usp=sharing

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