Why Won't My Favorite Notebook Extension Work in JupyterLab?

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Story

- Jupyter **Notebook** ~ 5 years

- JupyterCon 2023
  Time to learn JupyterLab!

- My favorite extension doesn't work**?!**

How to Write Extensions for Jupyter Lab:

- **Code,** Explain, Demo

- **Watch,** Ask questions

- When extension is done:
    - Discuss why **nbextensions** don't work in **JupyterLab** and propose solutions.

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About Me

- Engineer @ Bloomberg

  – Most of my career – server-side C/C++

  – Python / Jupyter Notebook ~ 5 years

  – Open Source Advocate @ Bloomberg,
  - maintainer matplotlib:mplfinance

- Former member (10 years),
  Chartered Financial Analyst Institute

- Molecular Biophysics

Questions

- How many use **Jupyter Notebook**?

- How many use **JupyterLab**?

- know the difference between
  Jupyter **Notebook** and **JupyterLab**

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Vocabulary

- **nbextension**
  (Classic Jupyter notebook extension)

- **labextension**
  (JupyterLab or Notebook v7 extension)

- **@lumino** (npm package scope: ts/js packages)

- **@jupyterlab** (npm package scope: ts/js packages)

Vocabulary

- **plugin** – extension is instance of plugin

- **token** – an identifier for a service provided by a plugin

  (i.e. an instance of the Lumino Token class)

- **commands** – registry of functions (@lumino)

- **widgets** – everything on screen (@lumino widget)

- **jlpm** (yarn) – Jupyter Lab Packaging Manager

DEMO

0. cookiecutter extension
1. do something (create a command)
2. execute command from the Command Palette
3. add a widget to JupyterLab (via our command)
4. style the widget
5. execute the command from the Launcher
6. execute command with arguments
7. create SideBar widget to execute our command with various options

Why won't my Notebook extension work in JupyterLab?

- ## [NoteBook Extensions](#)

  completely different framework

"methodical" approach for rewriting classic notebook extensions:

1. Identify functionality that needs to be migrated.

2. Identify JupyterLab [Core Tokens](#) (or other [extension points](#)) that provide the services necessary to implement that functionality

3. Rewrite the extension.

Useful LabExtension Links

- [Front-End Shell](#)

- [Table of equivalent extensions when migrating from the classical Notebook to JupyterLab](#).

- [Critical Extensions for Notebook v7](#)

- [Extension Developer Guide](#)

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