



JupyterLab configuration:  
settings, keyboard shortcuts,  
workspaces, and extensions

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Hello.



# What will this talk cover?

- JupyterLab's **settings system**
  - Default settings in extension schemas
  - System overrides in **overrides.json**
  - User setting overrides
- JupyterLab **workspaces**
  - Saving sessions for later resumption
- JupyterLab's **keyboard shortcuts**
  - Updating manually using settings editor
  - Installing the shortcut UI
- JupyterLab **extensions**
  - Enable/disable in **page\_config.json**



# JupyterLab configuration

**Q:** Where are all the things?

**A:** `jupyter lab paths`

```
$ jupyter lab paths  
Application directory: /anaconda3/share/jupyter/lab  
User Settings directory: /Users/af/.jupyter/lab/user-settings  
Workspaces directory: /Users/af/.jupyter/lab/workspaces
```



# JupyterLab's settings system

**Setting defaults**

`{schemaDir}/*json`



**System overrides**

`overrides.json`

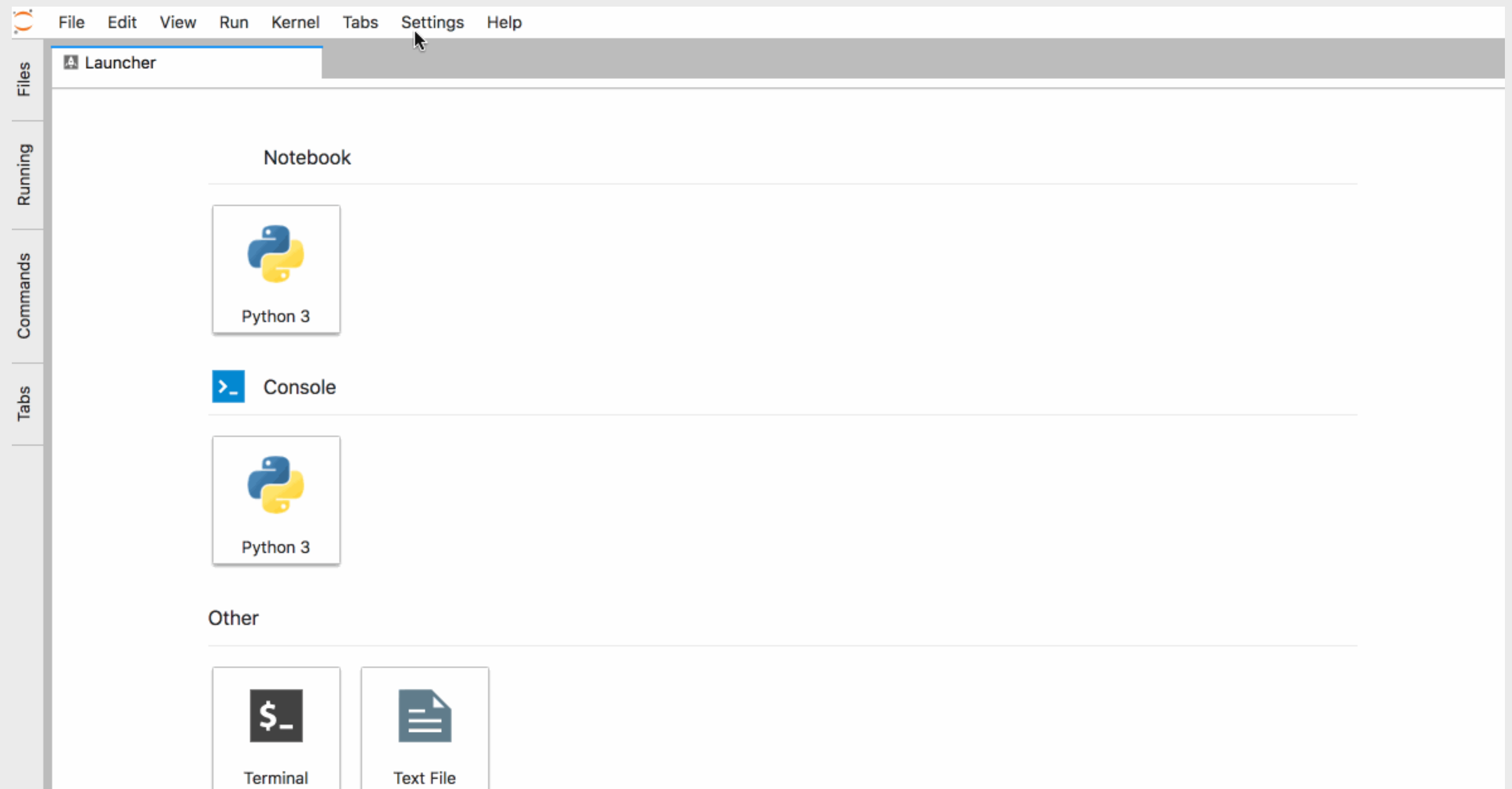


**User settings**



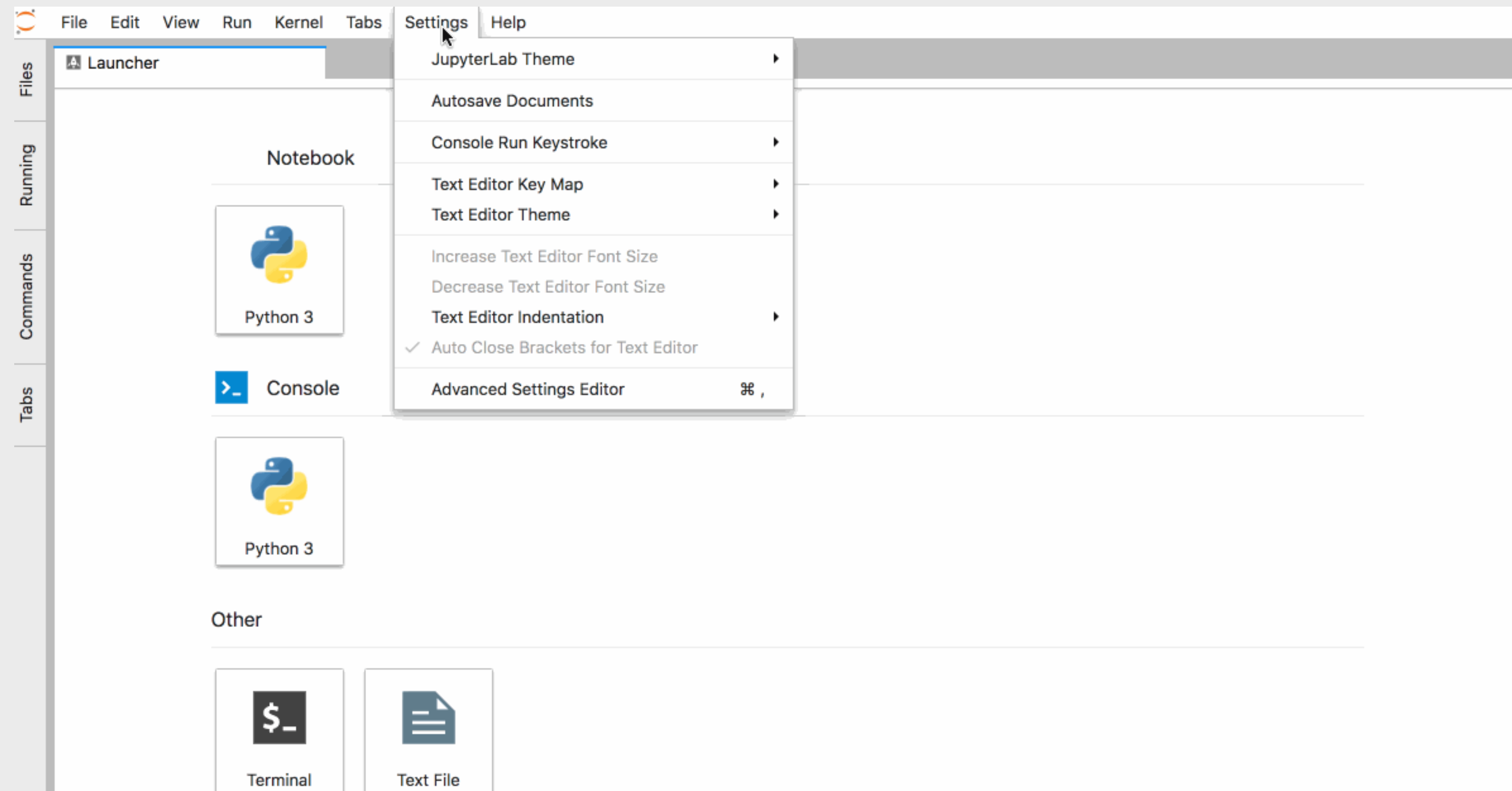
# Modifying user settings: menu-based toggles

JupyterLab's  
settings system



# Modifying user settings: advanced settings editor

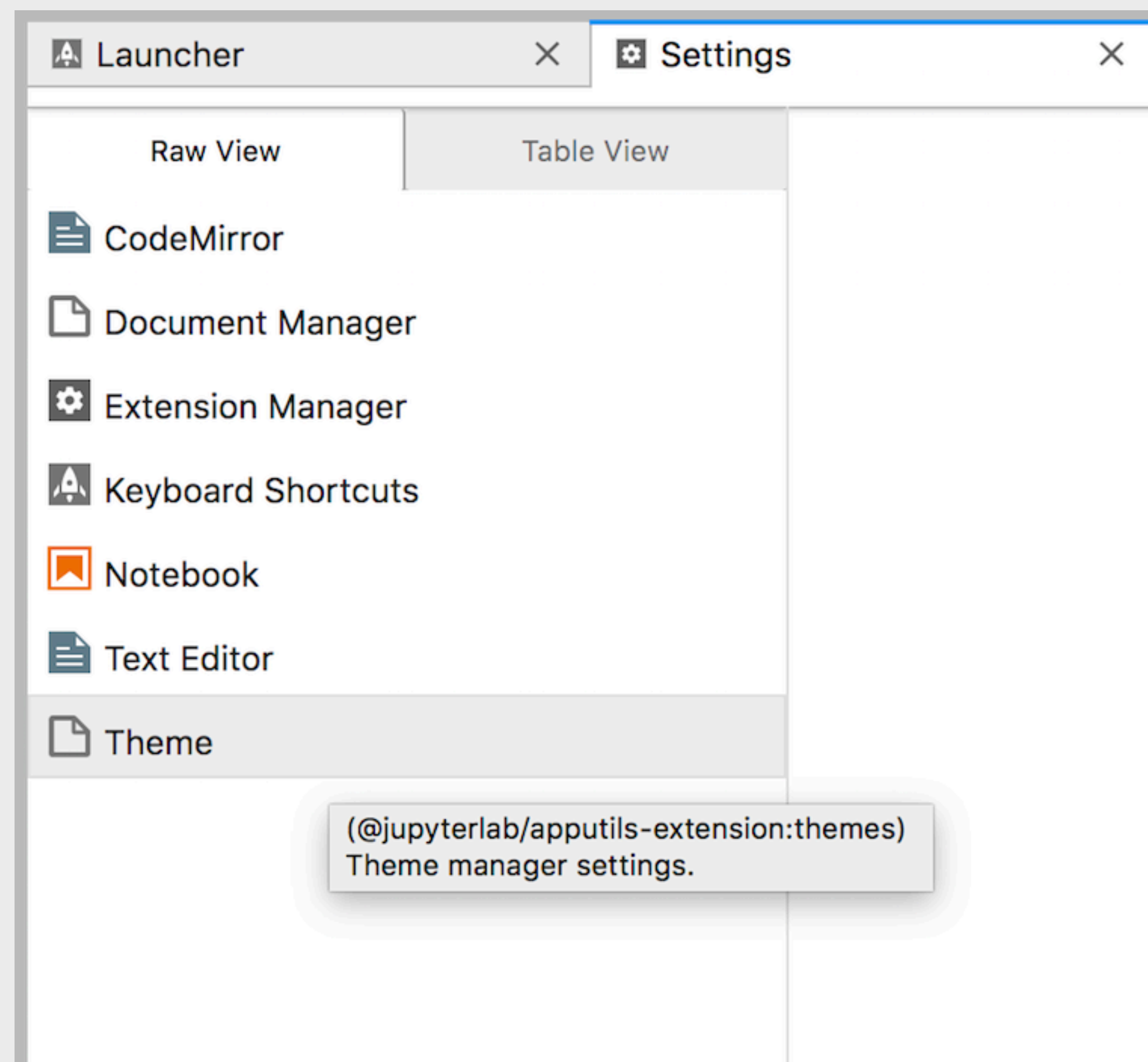
JupyterLab's  
settings system





# Default settings are set in extension schemas.

## JupyterLab's settings system



# Default settings are set in extension schemas.

## JupyterLab's settings system

The screenshot displays the JupyterLab settings system. At the top, two panels show the `themes.json` schema. The left panel shows a tree view of the schema, and the right panel shows the raw JSON code.

```

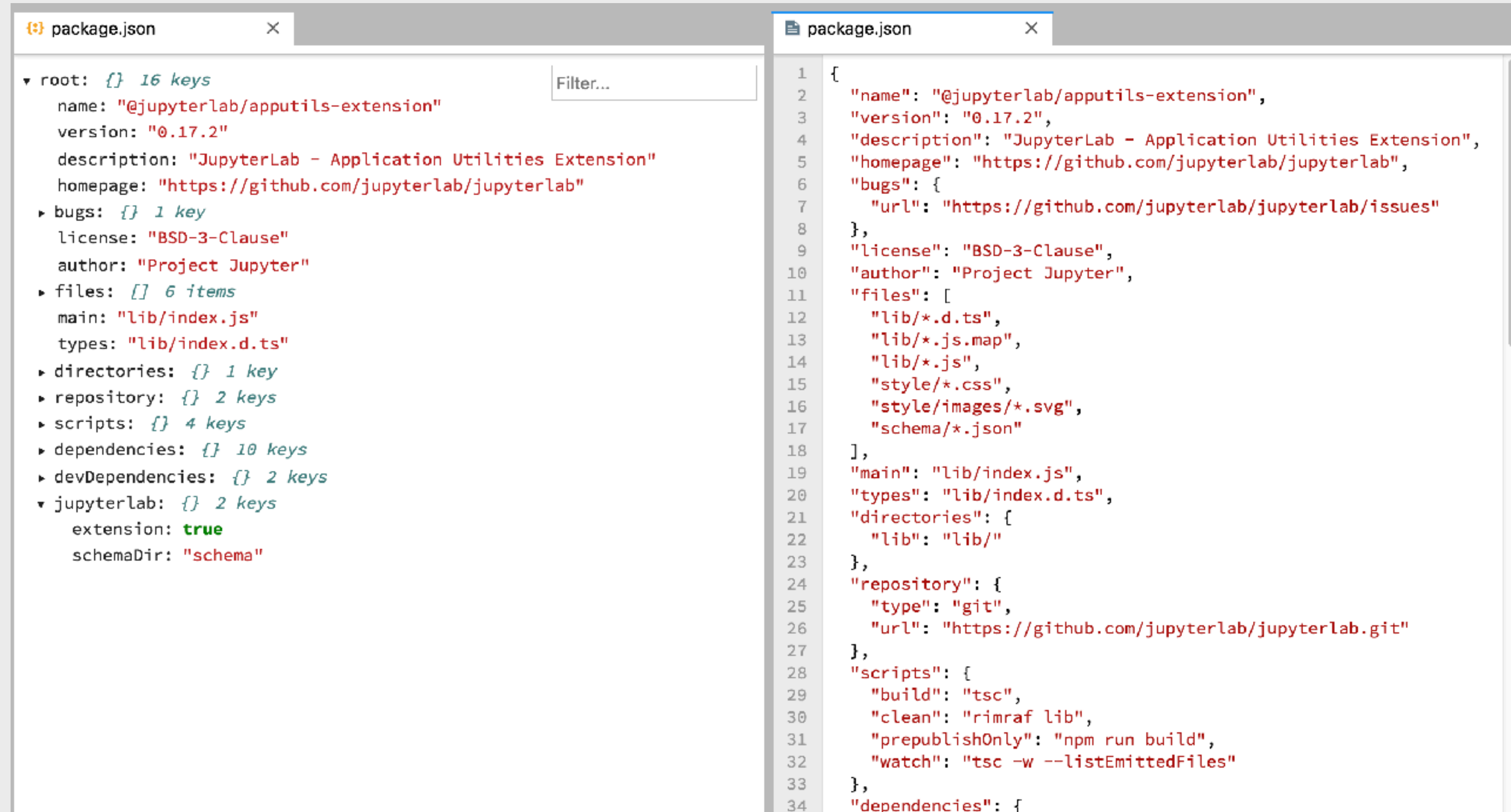
1 {
2   "title": "Theme",
3   "description": "Theme manager settings.",
4   "additionalProperties": false,
5   "properties": {
6     "theme": {
7       "type": "string",
8       "title": "Selected Theme",
9       "default": "JupyterLab Light"
10    }
11  },
12  "type": "object"
13 }
14

```

Below the schema panels is the **Settings** interface. It has a sidebar with a list of settings categories: CodeMirror, Document Manager, Extension Manager, Keyboard Shortcuts, Notebook, Text Editor, and Theme. The **Theme** category is selected. The main area shows the **System Defaults** for the Theme settings, which are defined in the `themes.json` schema. The **User Overrides** section is currently empty.

# Extension schemas are installed from the schemaDir

## JupyterLab's settings system



```

package.json
1  {
2    "name": "@jupyterlab/apputils-extension",
3    "version": "0.17.2",
4    "description": "JupyterLab - Application Utilities Extension",
5    "homepage": "https://github.com/jupyterlab/jupyterlab",
6    "bugs": {
7      "url": "https://github.com/jupyterlab/jupyterlab/issues"
8    },
9    "license": "BSD-3-Clause",
10   "author": "Project Jupyter",
11   "files": [
12     "lib/*.d.ts",
13     "lib/*.js.map",
14     "lib/*.js",
15     "style/*.css",
16     "style/images/*.svg",
17     "schema/*.json"
18   ],
19   "main": "lib/index.js",
20   "types": "lib/index.d.ts",
21   "directories": {
22     "lib": "lib/"
23   },
24   "repository": {
25     "type": "git",
26     "url": "https://github.com/jupyterlab/jupyterlab.git"
27   },
28   "scripts": {
29     "build": "tsc",
30     "clean": "rimraf lib",
31     "prepublishOnly": "npm run build",
32     "watch": "tsc -w --listEmittedFiles"
33   },
34   "dependencies": {

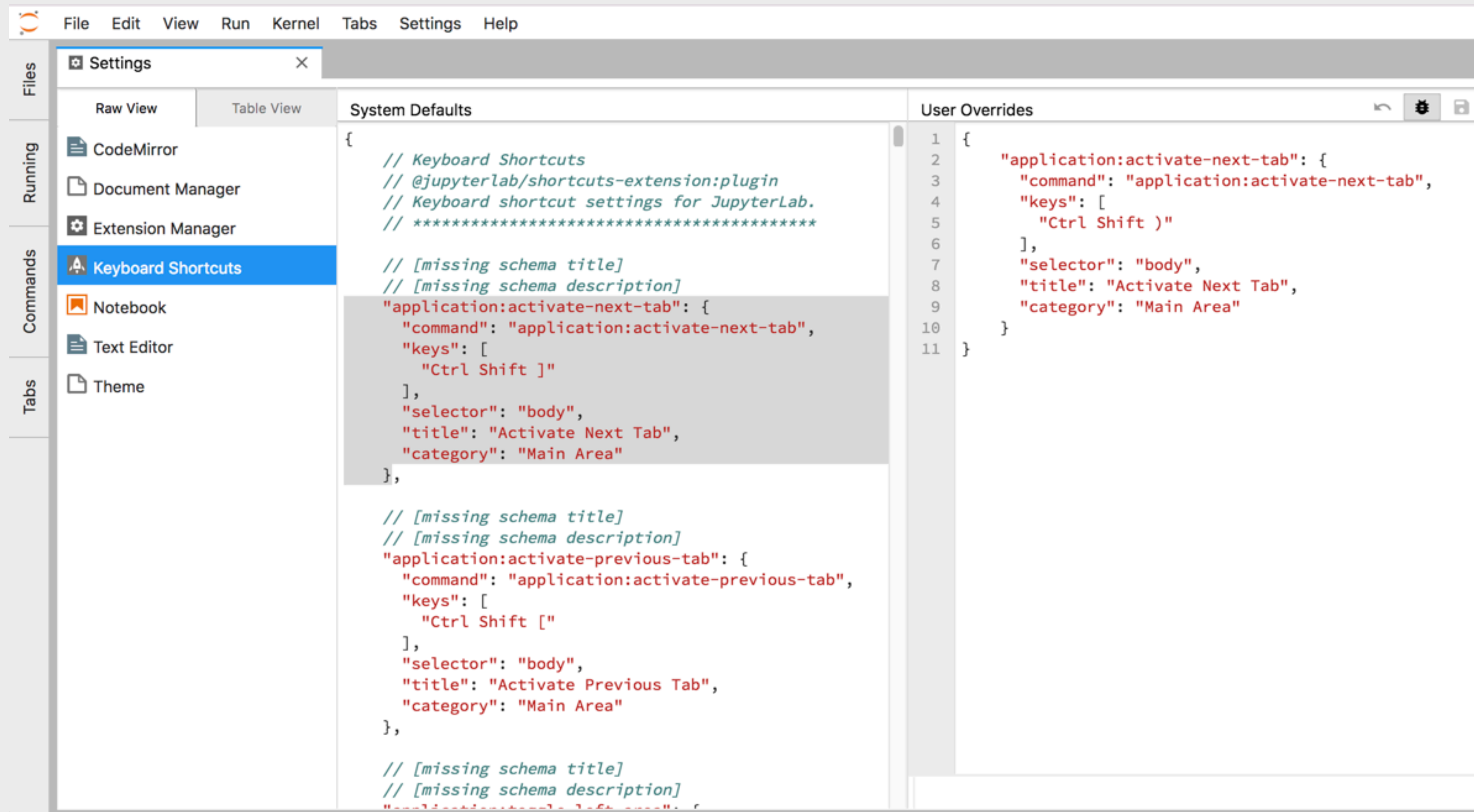
```

▼ root: {} 16 keys

- name: "@jupyterlab/apputils-extension"
- version: "0.17.2"
- description: "JupyterLab - Application Utilities Extension"
- homepage: "https://github.com/jupyterlab/jupyterlab"
- bugs: {} 1 key
  - license: "BSD-3-Clause"
  - author: "Project Jupyter"
- files: [] 6 items
  - main: "lib/index.js"
  - types: "lib/index.d.ts"
- directories: {} 1 key
- repository: {} 2 keys
- scripts: {} 4 keys
- dependencies: {} 10 keys
- devDependencies: {} 2 keys
- jupyterlab: {} 2 keys
  - extension: true
  - schemaDir: "schema"



# Keyboard shortcuts the hard way



The screenshot shows the JupyterLab Settings window with the 'Keyboard Shortcuts' section selected. The window is divided into two main panes: 'System Defaults' and 'User Overrides'.

**System Defaults:**

```

{
  // Keyboard Shortcuts
  // @jupyterlab/shortcuts-extension:plugin
  // Keyboard shortcut settings for JupyterLab.
  // *****

  // [missing schema title]
  // [missing schema description]
  "application:activate-next-tab": {
    "command": "application:activate-next-tab",
    "keys": [
      "Ctrl Shift )"
    ],
    "selector": "body",
    "title": "Activate Next Tab",
    "category": "Main Area"
  },

  // [missing schema title]
  // [missing schema description]
  "application:activate-previous-tab": {
    "command": "application:activate-previous-tab",
    "keys": [
      "Ctrl Shift ["
    ],
    "selector": "body",
    "title": "Activate Previous Tab",
    "category": "Main Area"
  },

  // [missing schema title]
  // [missing schema description]
  "application:activate-previous-tab": {
    "command": "application:activate-previous-tab",
    "keys": [
      "Ctrl Shift ["
    ],
    "selector": "body",
    "title": "Activate Previous Tab",
    "category": "Main Area"
  },

  // [missing schema title]
  // [missing schema description]
  "application:activate-next-tab": {
    "command": "application:activate-next-tab",
    "keys": [
      "Ctrl Shift )"
    ],
    "selector": "body",
    "title": "Activate Next Tab",
    "category": "Main Area"
  }
}

```

**User Overrides:**

```

1 {
2   "application:activate-next-tab": {
3     "command": "application:activate-next-tab",
4     "keys": [
5       "Ctrl Shift )"
6     ],
7     "selector": "body",
8     "title": "Activate Next Tab",
9     "category": "Main Area"
10  }
11 }

```

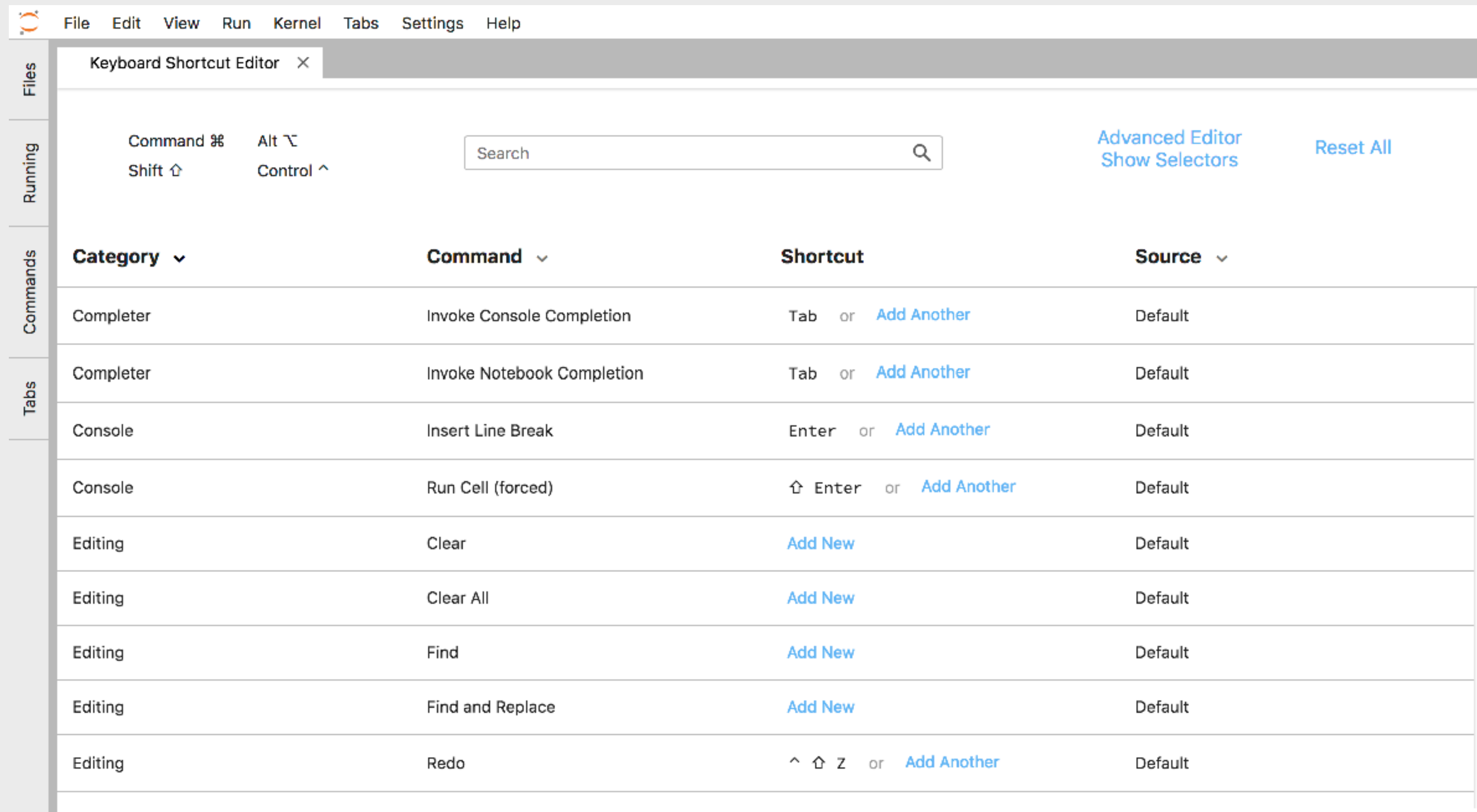
The left sidebar of the JupyterLab interface shows the following categories and items:

- Files:** Settings
- Running:** CodeMirror, Document Manager, Extension Manager
- Commands:** Keyboard Shortcuts (selected), Notebook, Text Editor, Theme
- Tabs:**





# Keyboard shortcuts the easy way



The screenshot shows the JupyterLab interface with the 'Keyboard Shortcut Editor' tab active. The interface includes a menu bar (File, Edit, View, Run, Kernel, Tabs, Settings, Help) and a sidebar with tabs for Files, Running, Commands, and Tabs. The main area displays a table of keyboard shortcuts.

At the top of the editor, there are keyboard shortcuts for Command (⌘), Alt (⌥), Shift (⇧), and Control (⌘). A search bar is also present. On the right, there are links for 'Advanced Editor', 'Show Selectors', and a 'Reset All' button.

Category	Command	Shortcut	Source
Completer	Invoke Console Completion	Tab or <a href="#">Add Another</a>	Default
Completer	Invoke Notebook Completion	Tab or <a href="#">Add Another</a>	Default
Console	Insert Line Break	Enter or <a href="#">Add Another</a>	Default
Console	Run Cell (forced)	⇧ Enter or <a href="#">Add Another</a>	Default
Editing	Clear	<a href="#">Add New</a>	Default
Editing	Clear All	<a href="#">Add New</a>	Default
Editing	Find	<a href="#">Add New</a>	Default
Editing	Find and Replace	<a href="#">Add New</a>	Default
Editing	Redo	⇧ ⇧ Z or <a href="#">Add Another</a>	Default

jupyter labextension install @jupyterlab/shortcutui



# Demo: see workspaces in action!

JupyterLab  
workspaces

/lab/workspaces/foo

/lab/workspaces/bar

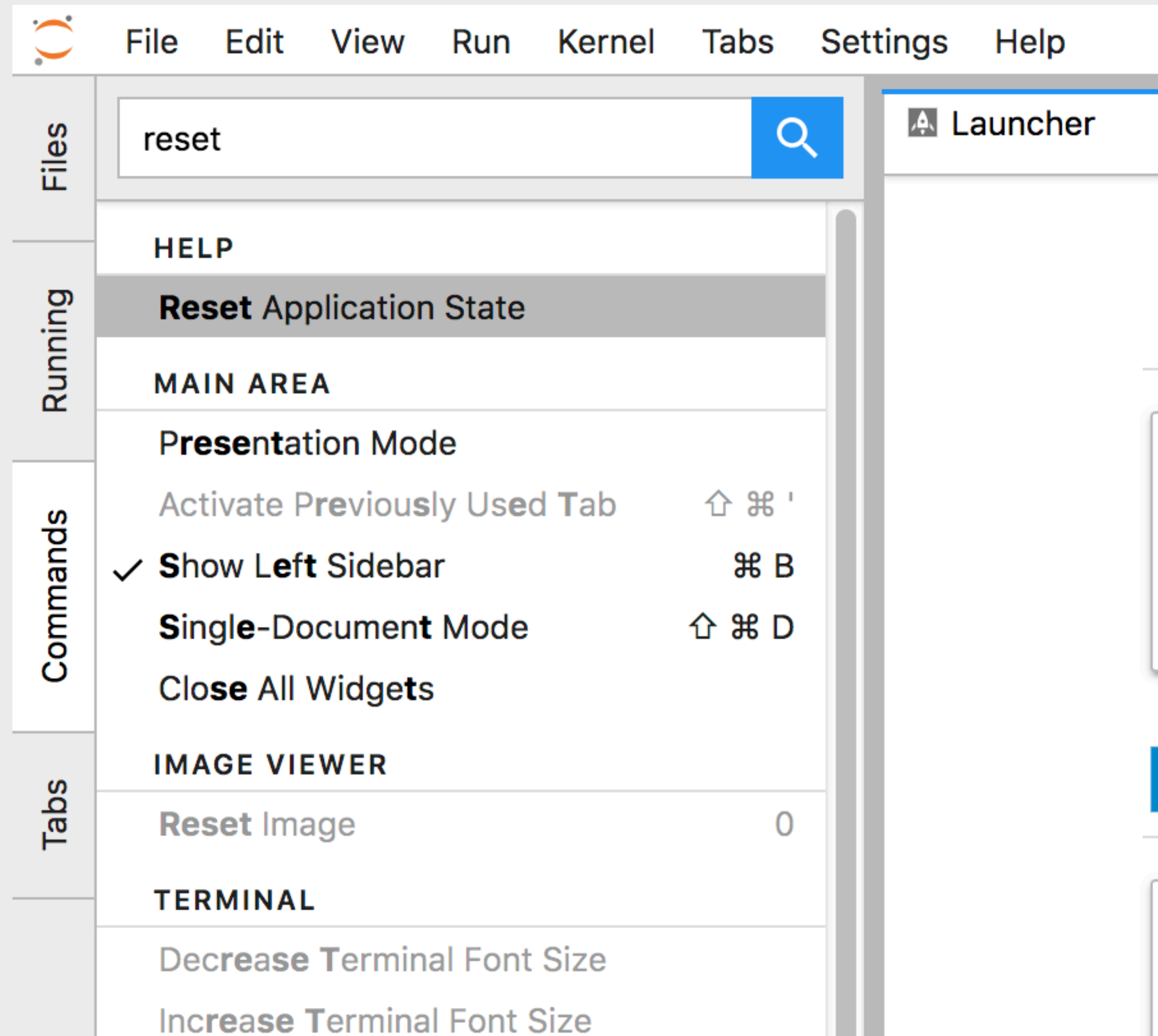
/lab/workspaces/baz

/lab/workspaces/qux



# If all else fails, reset!

## JupyterLab workspaces



# JupyterLab extensions

Disable an extension

```
jupyter labextension disable @jupyterlab/shortcutui
```

Enable an extension

```
jupyter labextension enable @jupyterlab/shortcutui
```

Read the documentation for extensions and `page_config.json`:

<https://jupyterlab.readthedocs.io/en/latest/user/extensions.html#settings>





# JupyterCon 2018, New York City

Thank You!

```
conda install -c conda-forge jupyterlab  
or pip install jupyterlab
```

