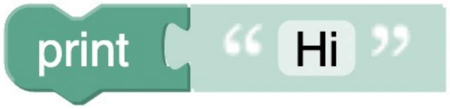
Using Blockly in Jupyter Notebooks

What is Blockly?

- Block-based programming editor
- Users place interlocking, graphical blocks representing code concepts
- Blockly generates equivalent Python code

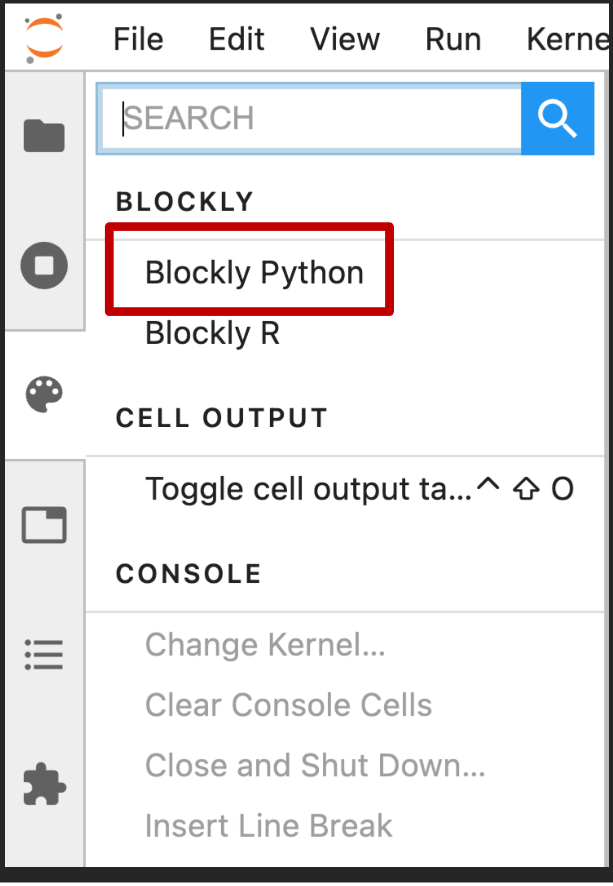


```
print('Hi')
```

How-to: Open Blockly Interface (1)

1. Open Commands
2. Click Blockly Python

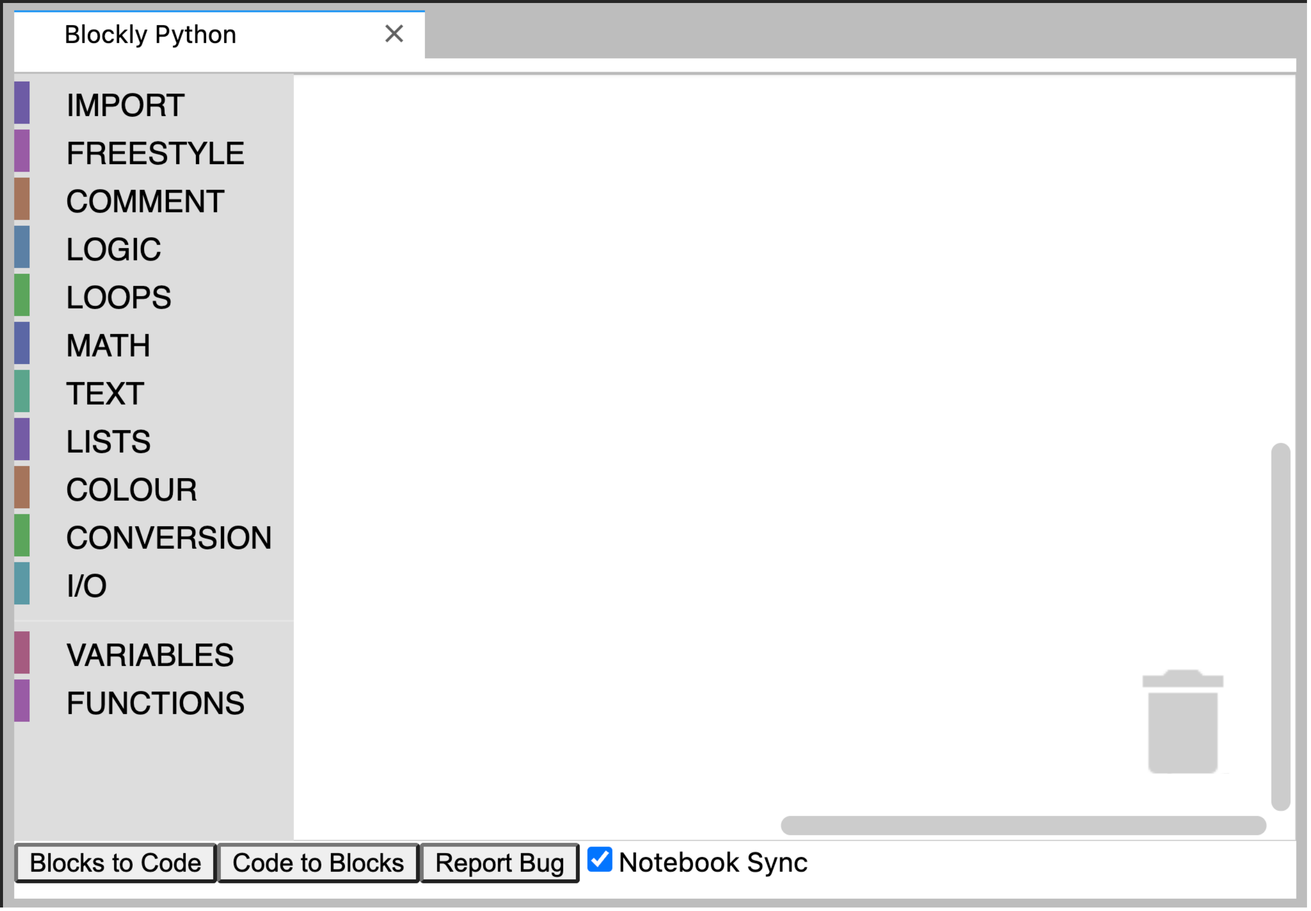
This will open a Blockly tab.



How-to: Open Blockly Interface (2)

This is how the Blockly Editor **should look**…

But sometimes it may not render correctly…

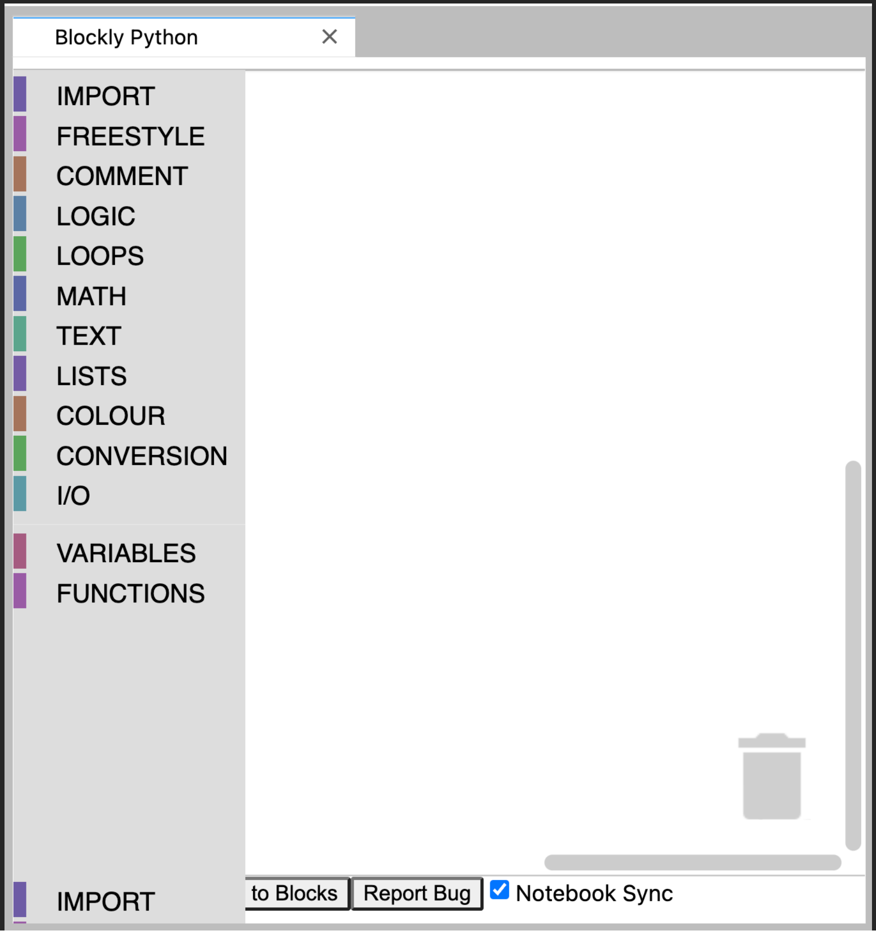


How-to: Fix Blockly Interface Render Issues

Solution: Reload the page.

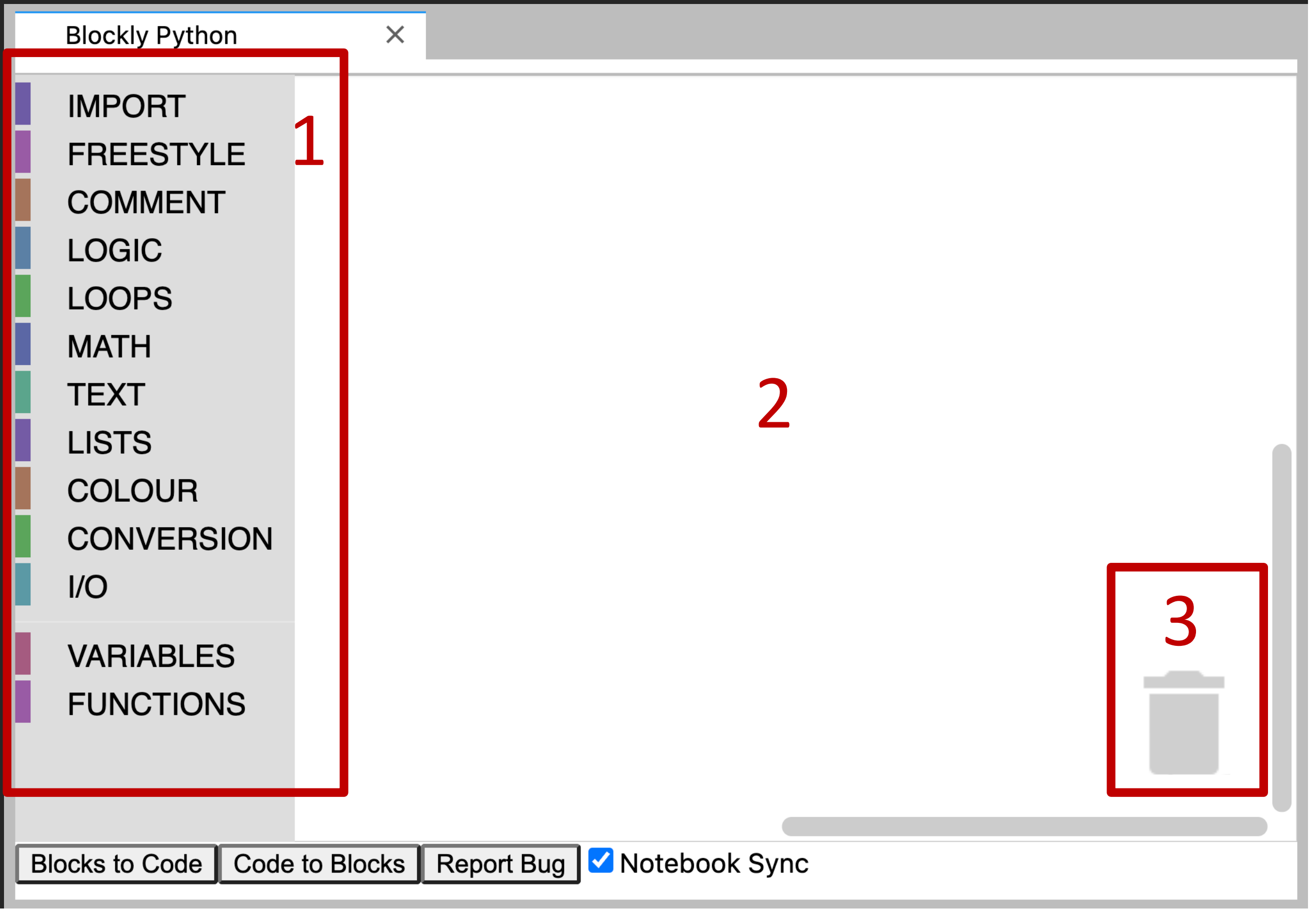
To avoid render errors:

1. Open the Blockly Editor
2. Close the Blockly Editor
3. **Reload this page**
4. Open the Blockly Editor



Blockly Interface

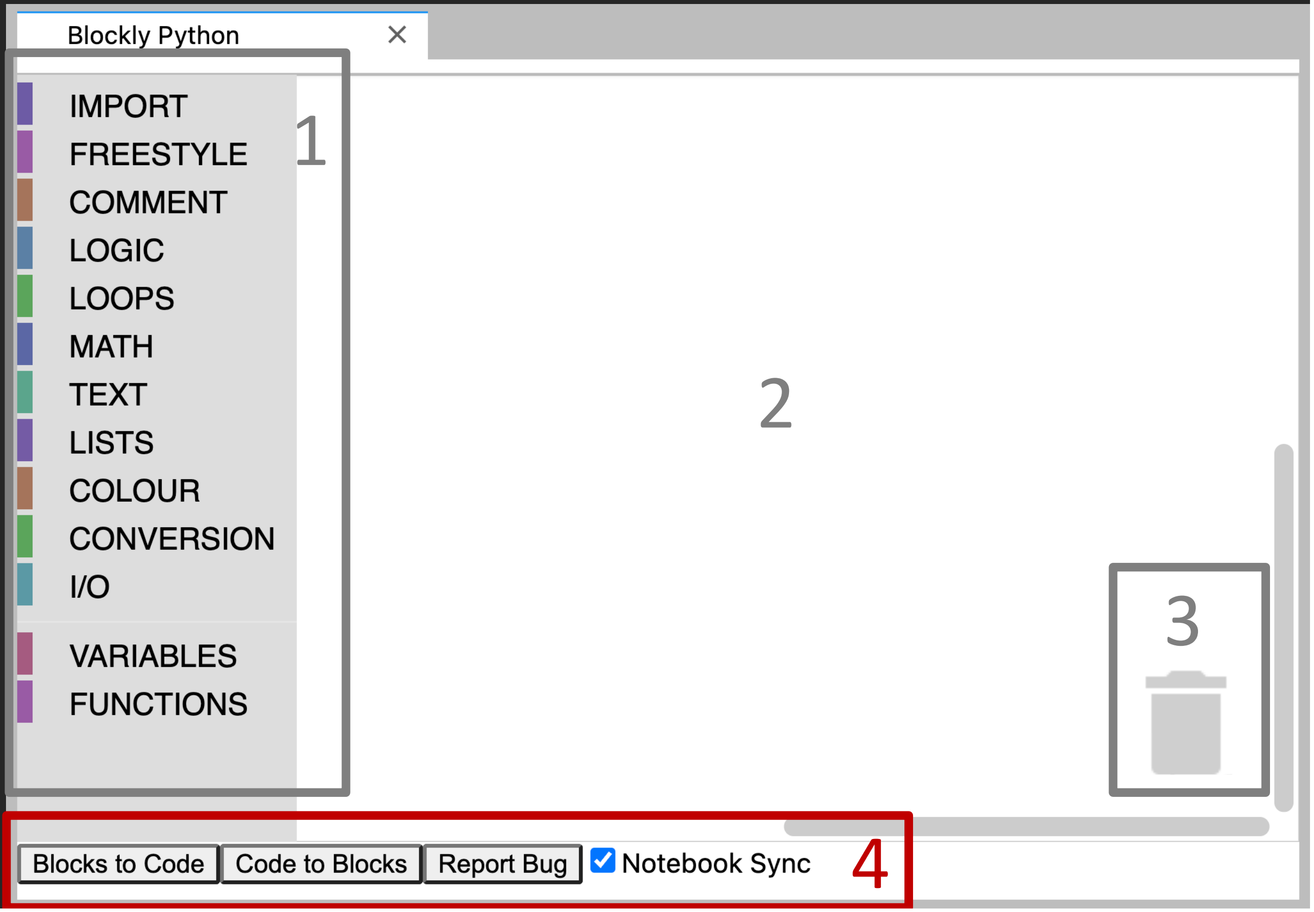
1. Blockly Toolbox
2. Blockly Workspace
3. Blockly Trash Can



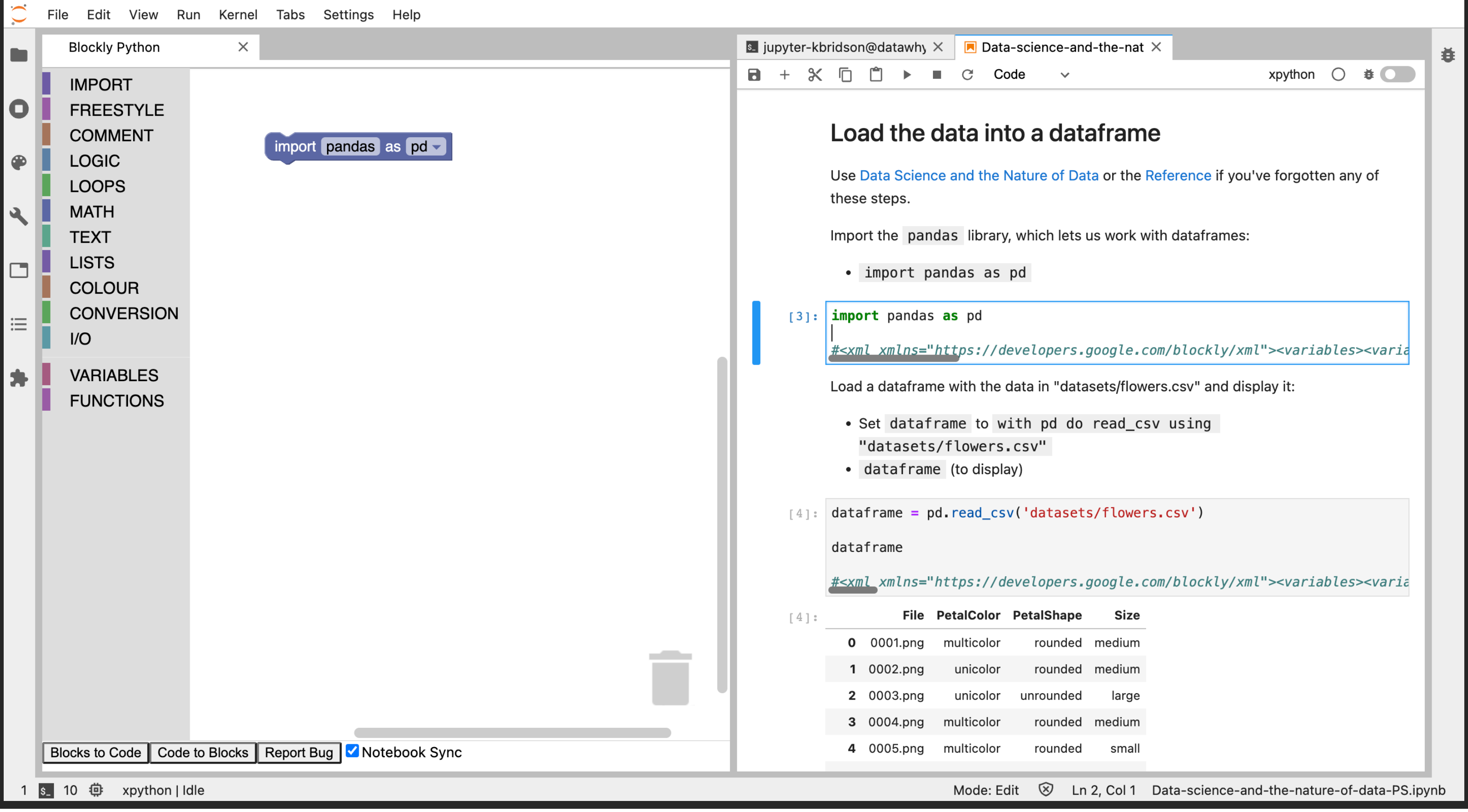
Blockly Interface

1. Blockly Toolbox
2. Blockly Workspace
3. Blockly Trash Can

4. JupyterLab Blockly Integration Toolbar



Using JupyterLab with Blockly



Load the data into a dataframe

Use Data Science and the Nature of Data or the Reference if you've forgotten any of these steps.

Import the `pandas` library, which lets us work with dataframes:

- `import pandas as pd`

```
[3]: import pandas as pd

     #<xml xmlns="https://developers.google.com/blockly/xml"><variables><varia
```

Load a dataframe with the data in "datasets/flowers.csv" and display it:

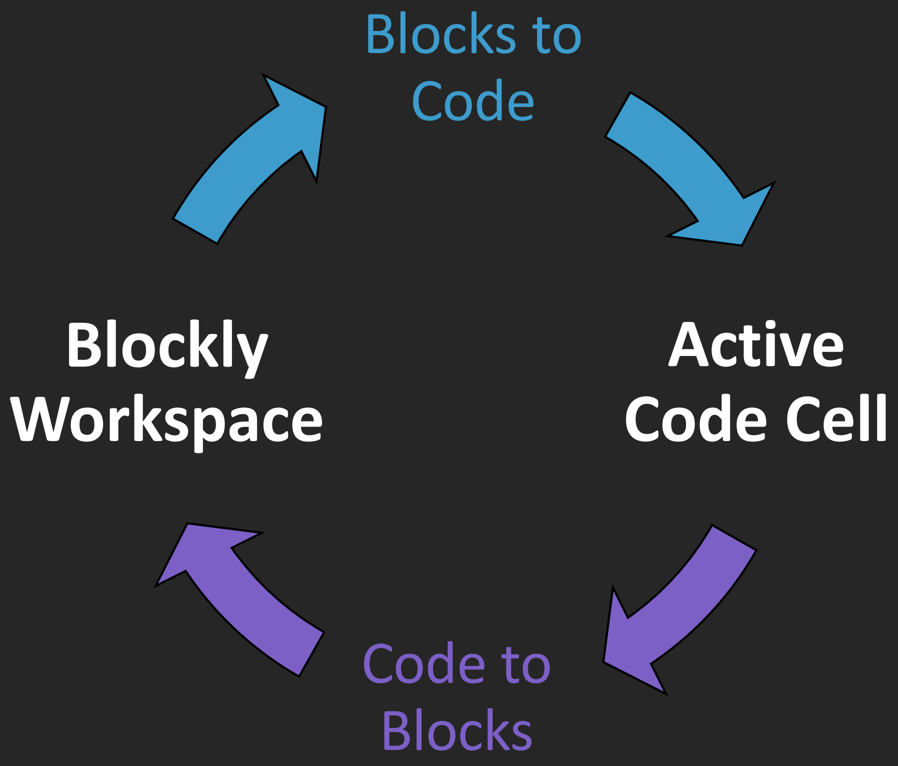
- Set `dataframe` to `with pd do read_csv using "datasets/flowers.csv"`
- `dataframe` (to display)

```
[4]: dataframe = pd.read_csv('datasets/flowers.csv')

     dataframe

     #<xml xmlns="https://developers.google.com/blockly/xml"><variables><varia
```

[4]:

	File	PetalColor	PetalShape	Size
0	0001.png	multicolor	rounded	medium
1	0002.png	unicolor	rounded	medium
2	0003.png	unicolor	unrounded	large
3	0004.png	multicolor	rounded	medium
4	0005.png	multicolor	rounded	small

JupyterLab Blockly Integration



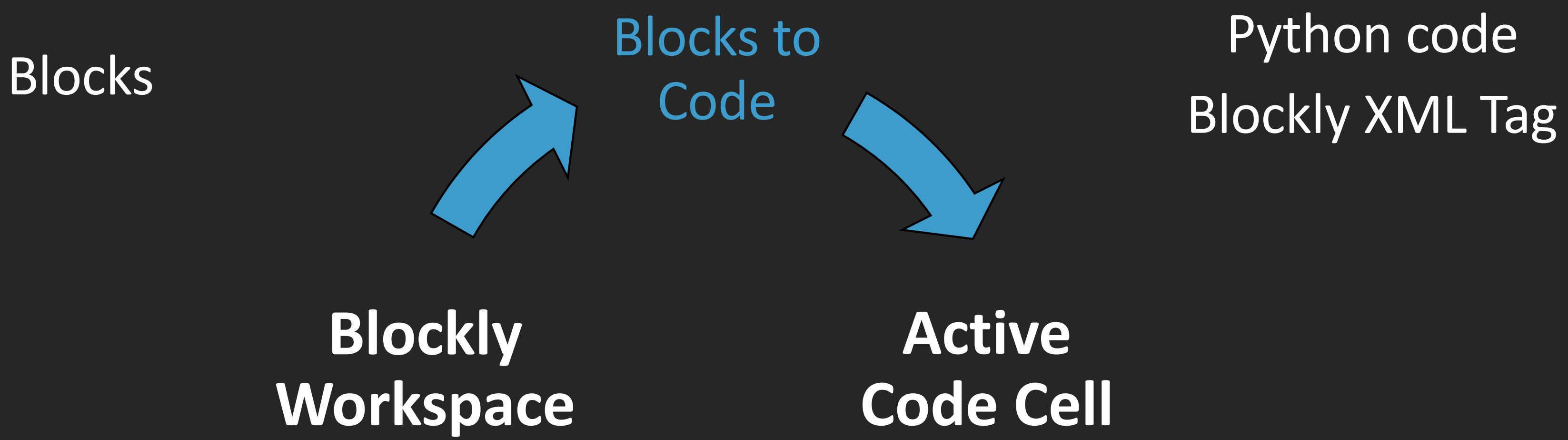
Blocks to Code

Active Code Cell

Code to Blocks

Blockly Workspace

Blocks to Code



Blocks

Blocks to Code

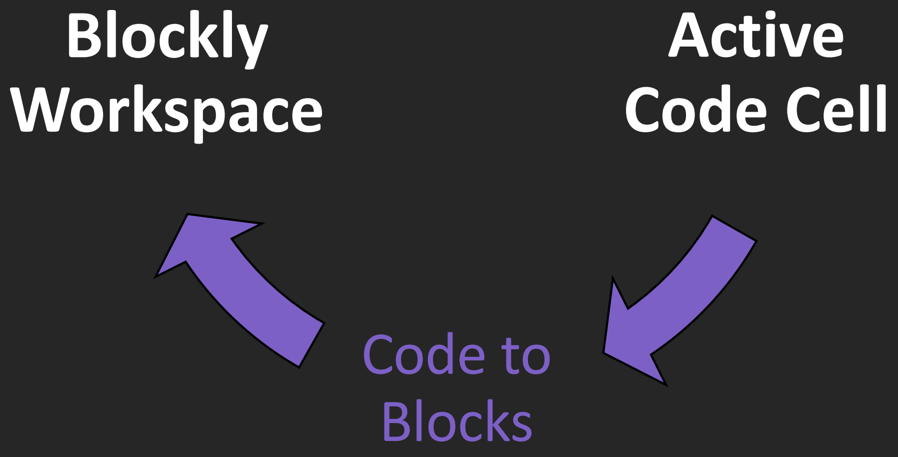
Python code

Blockly XML Tag

Blockly Workspace

Active Code Cell

Code to Blocks



Blockly Workspace

Active Code Cell

Code to Blocks

Blocks

Blockly XML Tag

Summary

- Blockly Interface
- Blocks to Code and Code to Blocks
- How to add code to notebook cell with Blockly