2. Python in Excel: Use Python directly in spreadsheets

Macros refine data

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- Can hav
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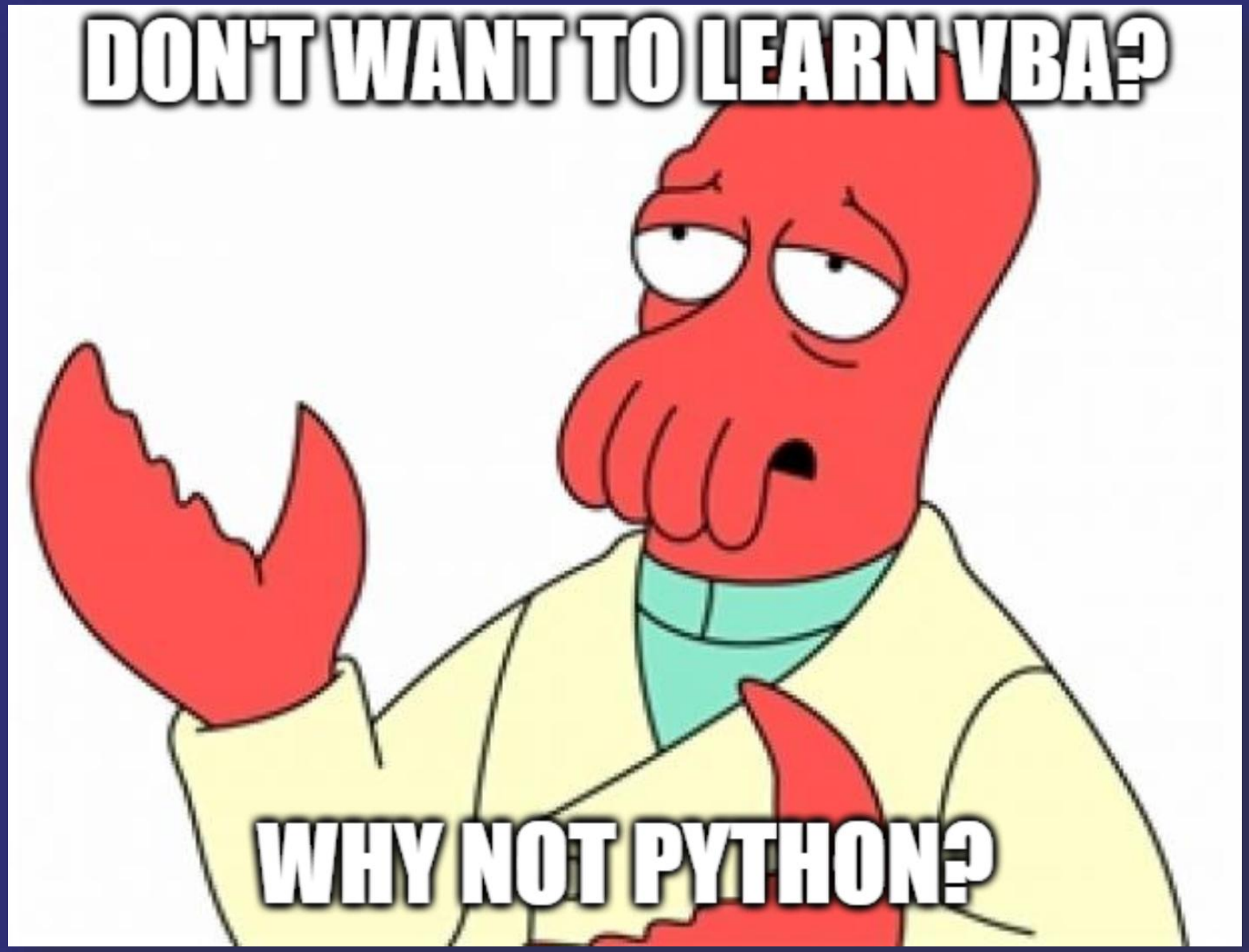
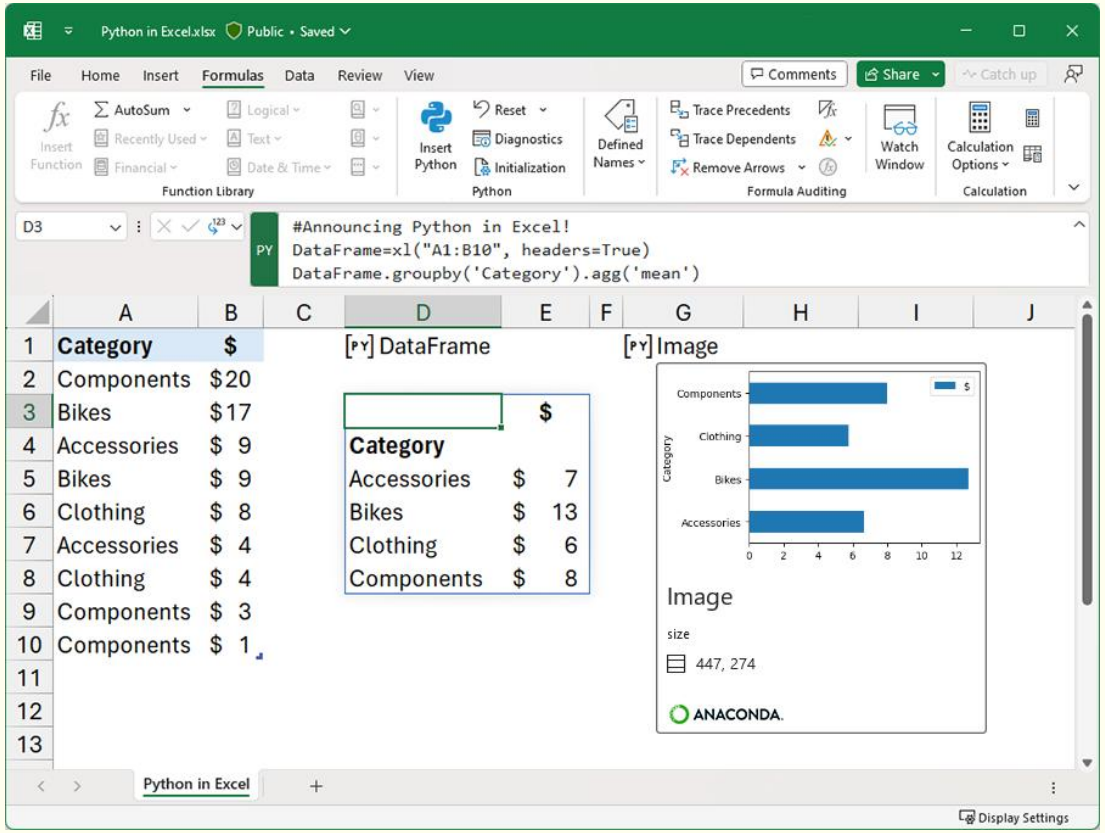

DON'T WANT TO LEARN VBA?
WHY NOT PYTHON?

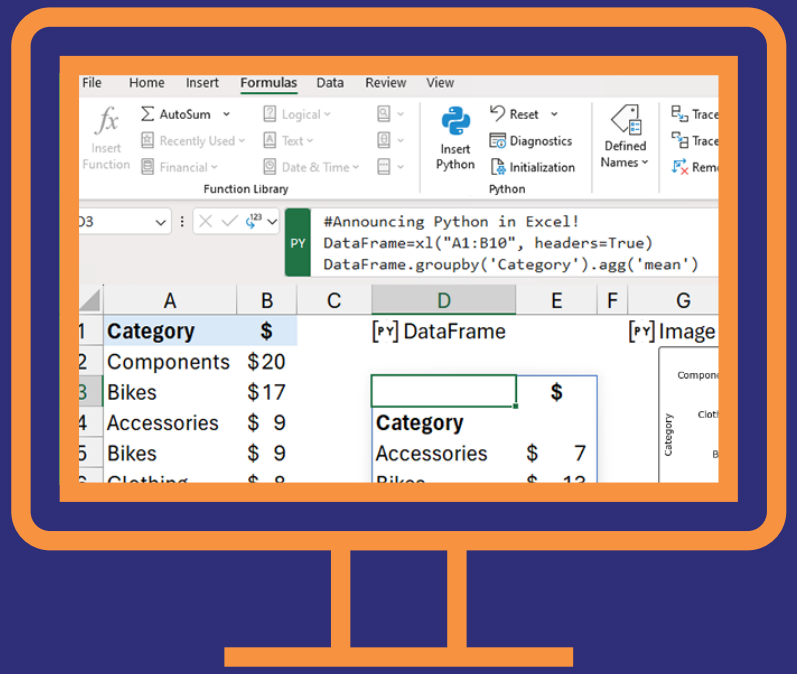
Python in Excel



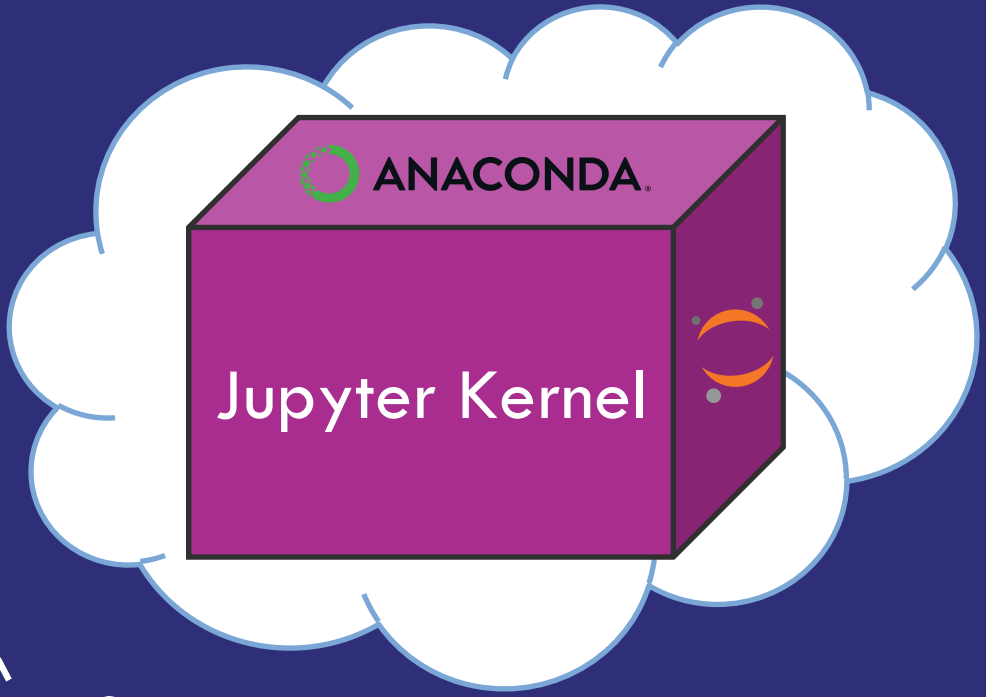
- Newish add-on feature of Excel that allows you run Python directly in the cell
- Add Python to existing workflows and analyses without creating new “projects”

How does it work?

Code cells are turned into a Jupyter notebook cells and run it in a cloud container

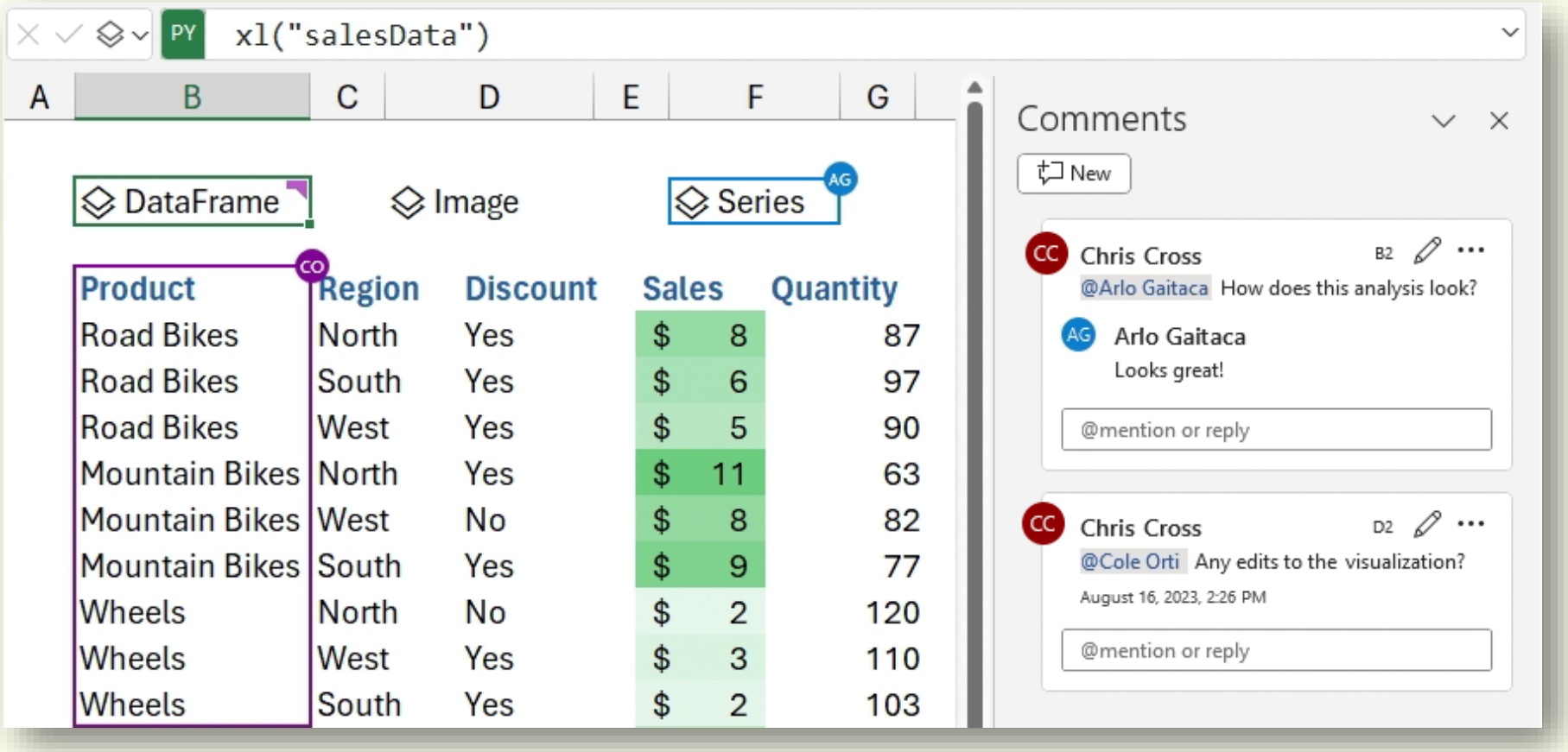


Data is exchanged with container from Excel via xl package



The container stay online as long as the workbook is open or until a timeout occurs.

Easy collaboration, no setup



But what packages do I get?

```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
import seaborn as sns
import statsmodels as sm
```

More great packages!

Python in Excel comes with a standard set of Python libraries provided by ANACONDA. through a secure distribution.

Astropy	NLTK	qrcode	tabulate
beautifulsoup4	NumPy	scikit-learn	TheFuzz
Faker	pandas	SciPy	wordcloud
imbalanced-learn	Pillow	seaborn	
IPython	plotnine	snowballstemmer	
Matplotlib	Prince	squarify	
mlxtend	PyTables	statsmodels	
NetworkX	PyWavelets	SymPy	

Remote Execution

Python code runs on hypervisor isolated containers built on Azure Container Instances.

Trusted Packaging

The container has Python and a curated set of secured libraries provided by Anaconda.

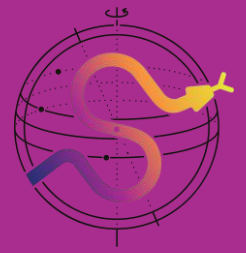
Secure Devices

No local disk access, user token, or network access.

Easy Collaboration

Connected to other tools like OneDrive, Advanced Analysis, sharing links, etc.

Let’s look at a demo!



Python in Excel tradeoffs

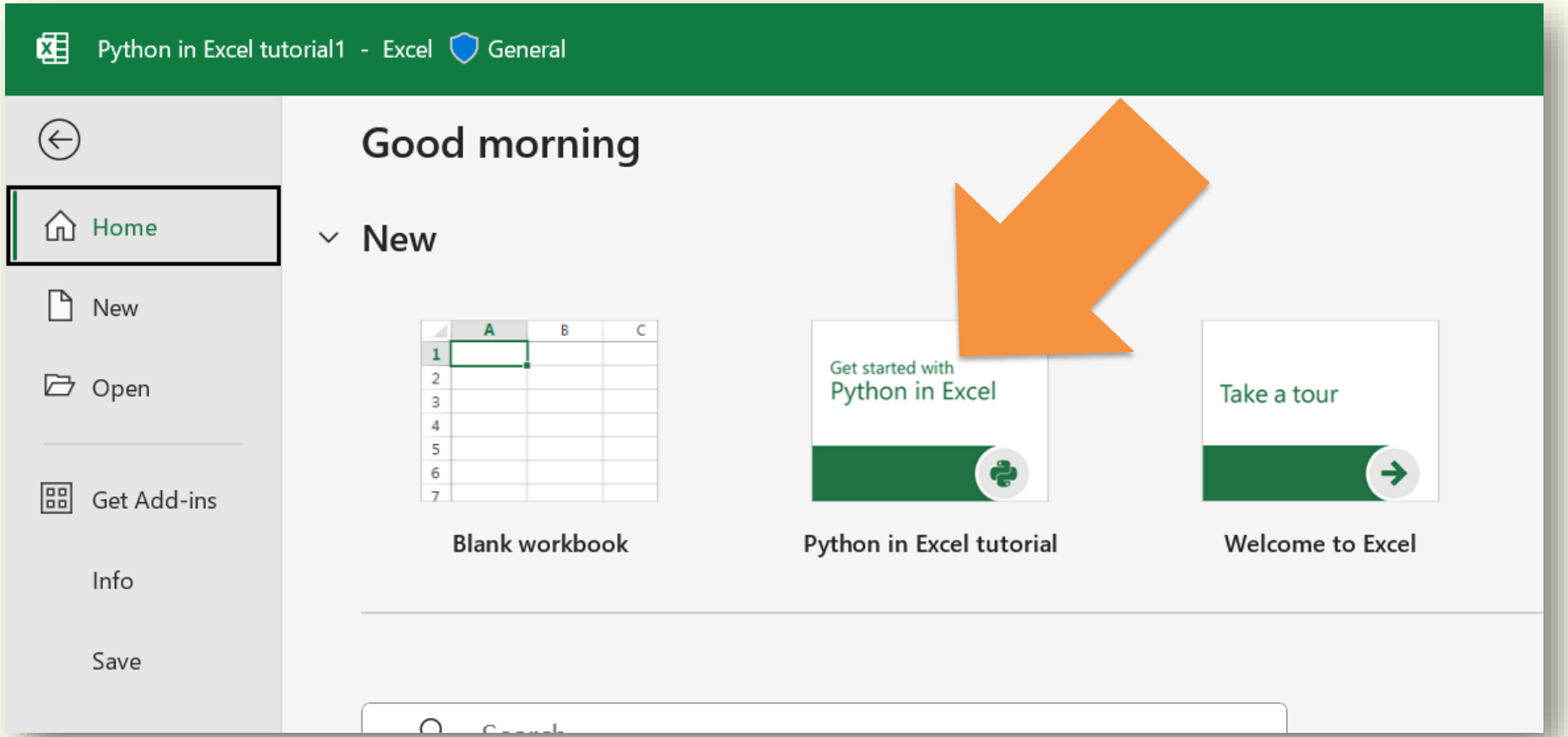
Advantages

- Highly vetted, secure environments to run code on the cloud
- Interoperates with other 365 experience tools like live editing, share links, and comments
- Copilot integration

Limitations

- Need network access to use Python and can't access internet in cloud container to get data
- Supports a small subset of the extensive Python package ecosystem
- Current data size limit (~100MB)

Fantastic built-in reference for all things Python in Excel



Exercise: Packages in Python in Excel

1. In the tutorial repo, download `python-in-excel.xlsx` which in Library Index sheet has a list of the packages in the current Python in Excel environment.

2. Pick one of the non-core libraries and in a new sheet create a code sample of using that library in Excel. Checking out the package docs for a tutorial is a good start!

aka.ms/scipy-sheets