xlwings: Python & Excel

- For Python Quants Conference
- New York City

May 6th, 2016

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Material

- **For the material presented during the demos (Part 1 &3), see:**

  https://github.com/ZoomerAnalytics/xlwings_notebooks/tree/master/for_python_quants_conference_nyc_20160506

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About me

- **Consultancy (Zurich):**
  - Analytical apps for Excel & web
  - Open-source: xlwings

- **Previously:**
  - 9yrs in Banking /Asset Management
  - Background: Finance & Economics

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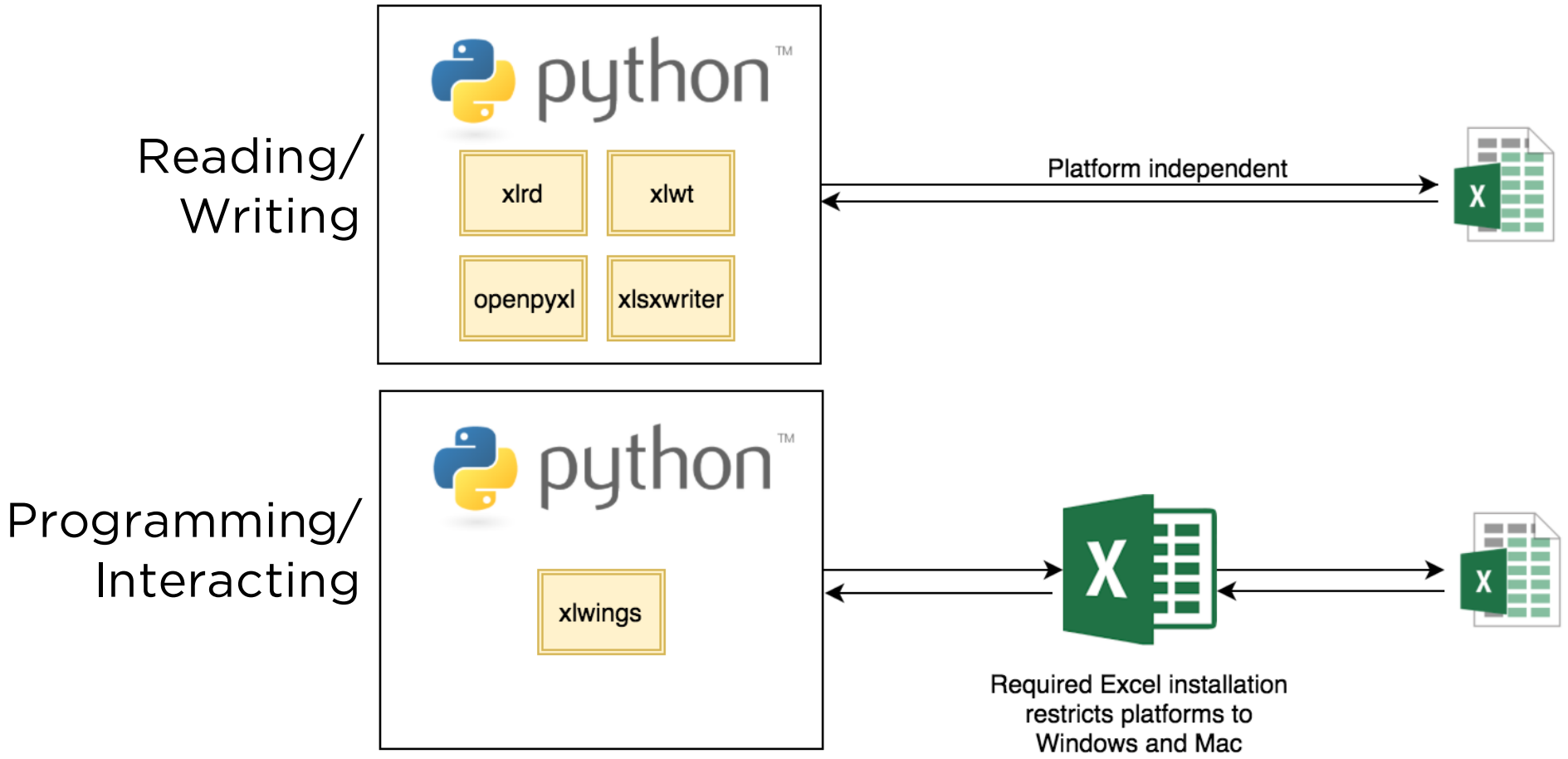
The open-source Python/Excel Landscape



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xlwings Features

1. Scripting/Interaction
2. Macros
3. User Defined Functions (UDFs)

1 Scripting/Interaction

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GDP per capita

Source of xls file:
http://data.worldbank.org/indicator/NY.GDP.PCAP.CD

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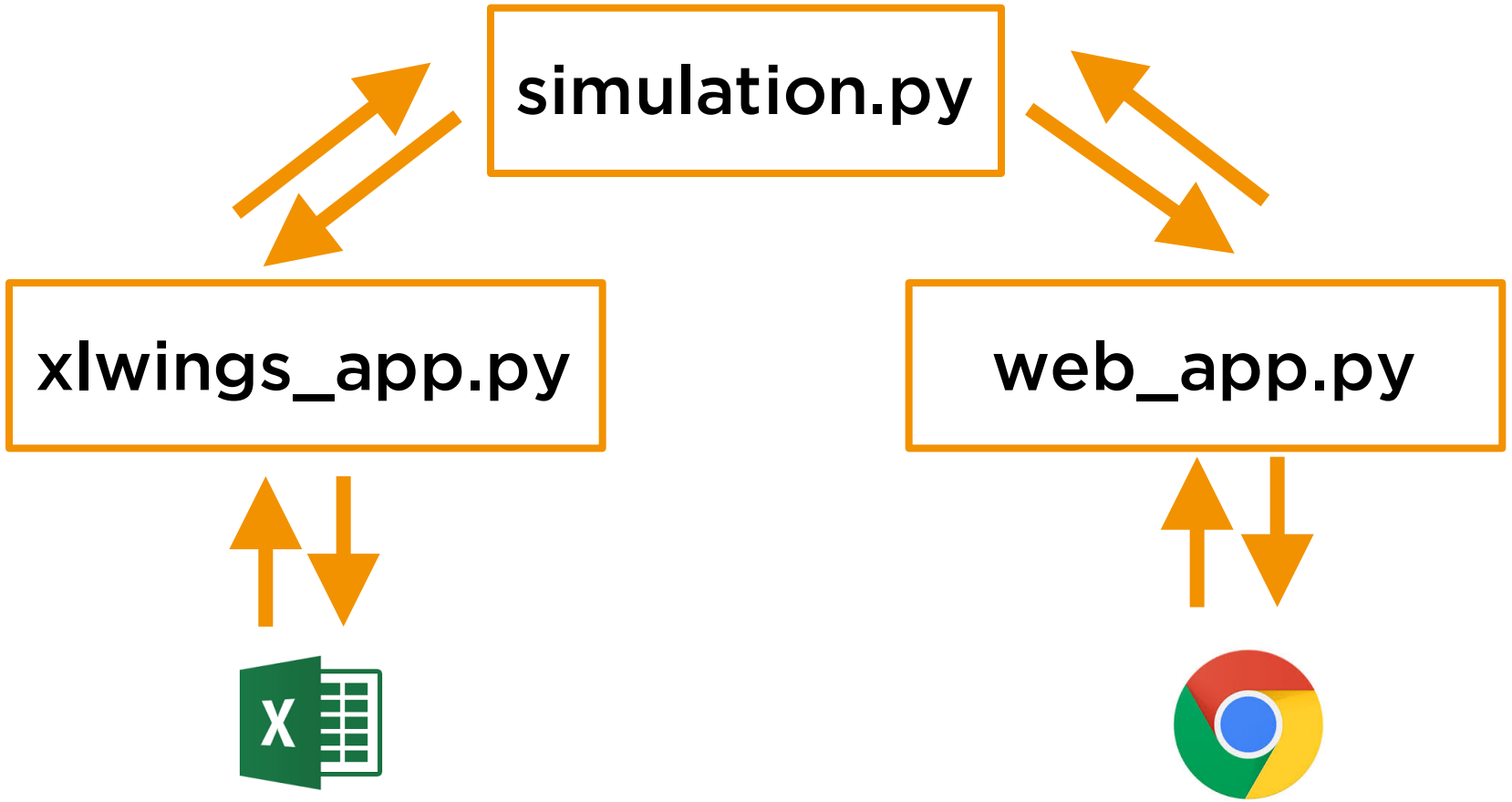
2 Macros

Monte Carlo Simulation



Source Code: https://github.com/ZoomerAnalytics/simulation-demo
Hosted Sample: www.zoomeranalytics.com/simulation-demo

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3 UDFs

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DJIA: Correlation Analysis

Excel's Correlation formula accepts just 2 data sets:

=CORREL(array1, array2)

Here's how we're going to fix this:

- Add CORREL2 to get the full correlation matrix
- Visual representation: Heatmap

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Summary

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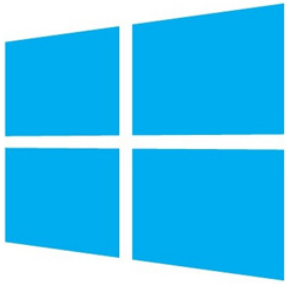
(1) Easy Installation

- pip/conda install xlwings
- included in:

(2) Cross-Platform



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(except UDFs)

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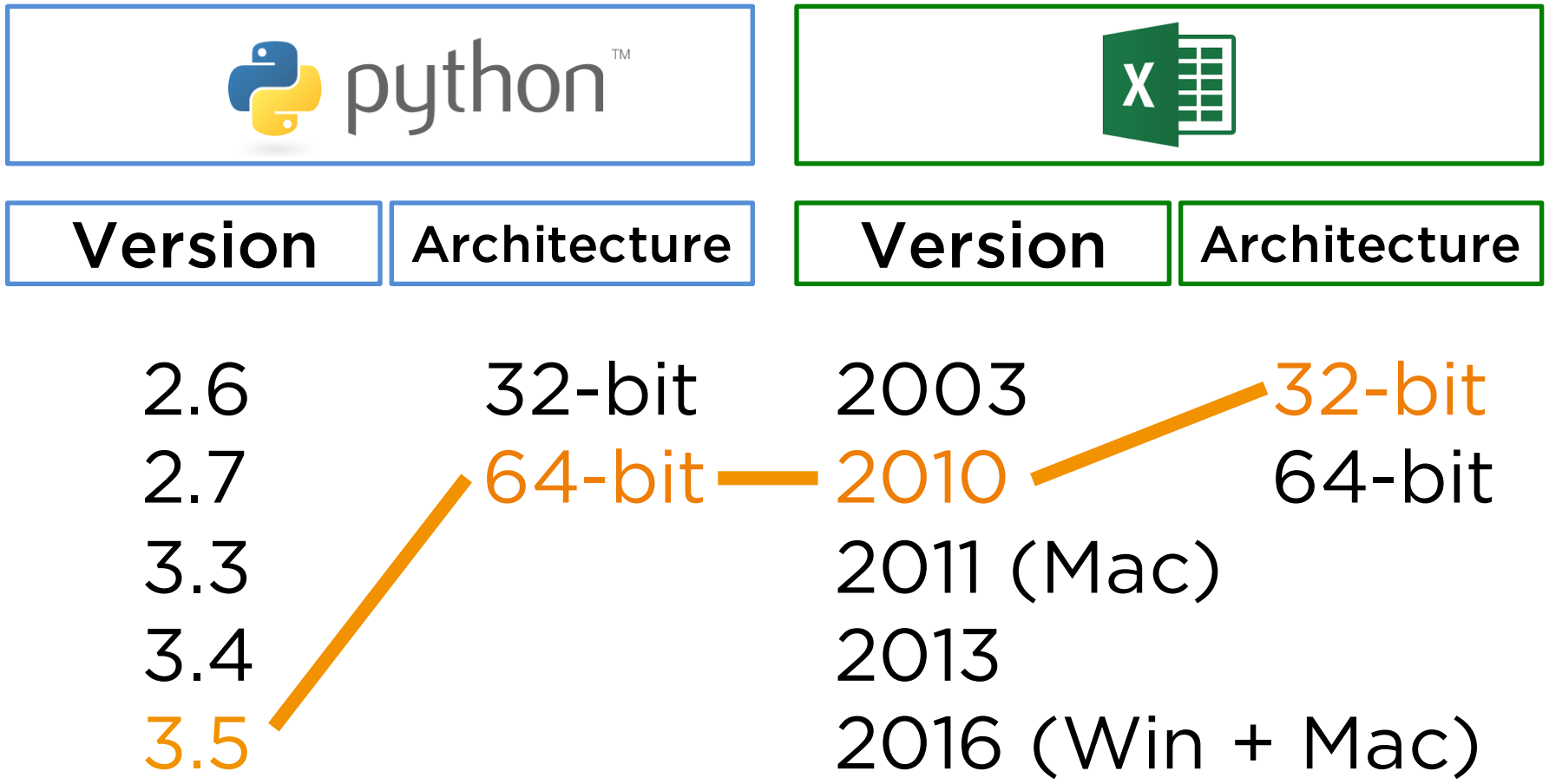
(3) Flexibility



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(4) Simplicity

```
>>> from xlwings import Workbook, Range

>>> wb = Workbook()
>>> Range("A1").value = my_variable
```

- Strings
- Numbers
- DateTime
- Lists (nested)
- NumPy arrays
- Pandas DataFrames

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(5) Powerful built-in Converters/Options

```
Range("A1").options(pd.DataFrame).value
```

```
@xw.func
@xw.arg("x", pd.DataFrame)
def myfunction(x):
    return x
```

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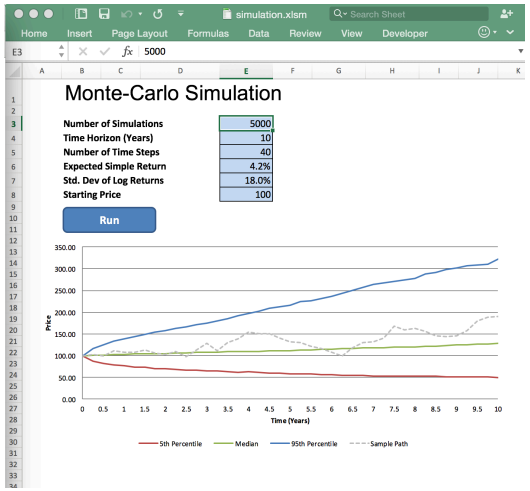
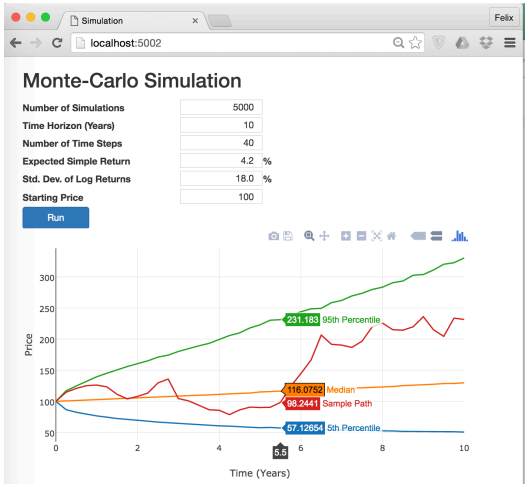
(6) Prototype analytical web apps



vs.



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Questions?

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