波万乀、

Technical Presentation



組名:環遊世界

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- Introduction and Setup
- Basic Plotting
- Styling and Theming
- Adding Annotations
- Linking and Interactions
- Data Sources and Transformations
- Bar and Categorical Data Plots
- Graph and Network Plots (圖形和網路圖)
- Exporting and Embedding (導出html和嵌入)
- Running Bokeh Applications

What is Bokeh?!

- Interactive visualization in modern browsers
- Standalone HTML documents, or server-backed apps
- Expressive and versatile graphics
- Large, dynamic or streaming data
- NO JAVASCRIPT REQUIRED

What can I do with Bokeh?

- Standard imports
- Plot a complex chart with interactive hover in a few lines of code
- Create and deploy interactive data applications

Import & Version

2.1.1

```
# standard import
    from bokeh. io import output_notebook, show
    output_notebook()
    BokehJS 2.2.1 successfully loaded.
版本:
import bokeh; print(bokeh.__version__)
```

Install or Update

```
選取 Anaconda Prompt (anancoda) - conda install bokeh

done

(base) C:\Users\user>conda install bokeh

Collecting package metadata (current_repodata.json): done
Solving environment: |
```

Anaconda : conda install bokeh conda update bokeh

cmd: pip update bokeh

Reference

models	工具		
plotting	基本圖形		
layouts	組合圖片		
io	儲存或顯示方式		
palettes	調色盤		
settings	環境設定		

application	driving	resources	tile_providers
client	embed	sampledata	transform
colors	events	server	util
command	model	sphinxext	
document	protocol	themes	

Basic Plotting

- Scatter
- Line
- Datetime axes

- more

- asterisk()
- diamond()

• square_dot()

- circle()
- diamond_cross()
- square_pin()

- circle_cross()
- diamond_dot()
- square_x()

- circle_dot()
- hex()

• triangle()

- circle_x()
- hex_dot()

• triangle_dot()

- circle_y()
- inverted_triangle()
- triangle_pin()

• cross()

• plus()

• x()

• dash()

• square()

• y()

• dot()

• square_cross()

Styling and Theming

- Colors (html, hex, (r,g,b), (r,g,b,a))
- Properties(line, fill, text)
- Plots
- Glyphs
- Axes
- Grids



Adding Annotations (添加圖例)

- Spans
- Box Annotations
- Label/Labelset
- Arrows
- Legends
- Color bar





Linking and Interactions (連接與互動)

- Linked interaction(panning, brushing)
- Hover tool
- Widgets (CustomJS)
- Callbacks(提醒視窗)
- more

Bar

- Basic Bar Charts
- Stacked Bars
- Grouped Bar Charts

Categorical data plots

- Mixing Categorical Levels
- Categorical Scatterplots

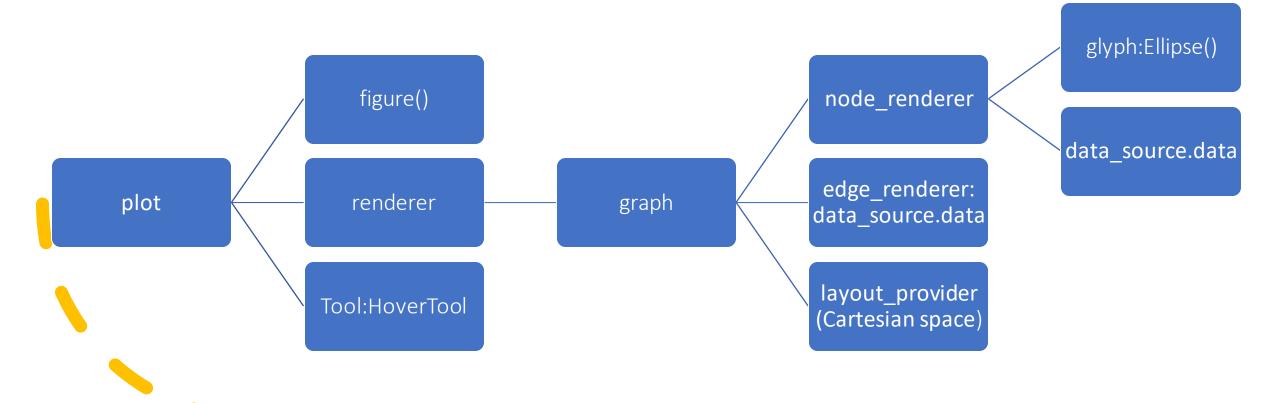
Data Sources and Transformations

- Imports and Setup
 - Creating with Python Dicts
 - Creating with Pandas DataFrames

Transformations

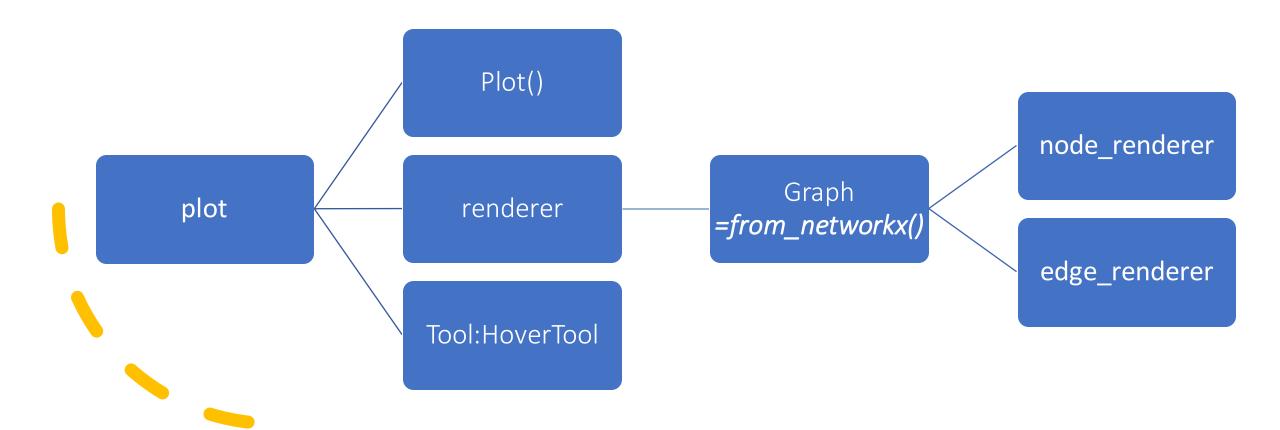
Graph and Network Plots

Native Support



Graph and Network Plots

NetworkX



Exporting and Embedding

Exporting

- PNG
- SVG

Embedding

- Displaying in the Notebook
- Saving to an HTML File

Install:

- conda install selenium
- conda install -c conda-forge firefox geckodriver

Running Bokeh Applications

- In Notebooks
 - Modify_doc(doc)
- With bokeh serve
 - Curdoc().add_root(layout)

mini-homework

參考資料

- Bokeh 2.2.1
- Python 上前端!利用 Bokeh 與 Python 製作網頁互動視覺化

