(https://bokeh.org/)

Bokeh Tutorial

00. Introduction and Setup

Tutorial Overview

The tutorial is broken into several sections, which are each presented in their own notebook:

1. Basic Plotting (01%20-%20Basic%20Plotting.ipynb)
2. Styling and Theming (02%20-%20Styling%20and%20Theming.ipynb)
3. Data Sources and Transformations (03%20-%20Data%20Sources%20and%20Transformations.ipynb)
4. Adding Annotations (04%20-%20Adding%20Annotations.ipynb)
5. Presentation and Layouts (05%20-%20Presentation%20Layouts.ipynb)
6. Linking and Interactions (06%20-%20Linking%20and%20Interactions.ipynb)
7. Bar and Categorical Data Plots (07%20-%20Bar%20and%20Categorical%20Data%20Plots.ipynb)
8. Graph and Network Plots (08%20-%20Graph%20and%20Network%20Plots.ipynb)
9. Geographic Plots (09%20-%20Geographic%20Plots.ipynb)
10. Exporting and Embedding (10%20-%20Exporting%20and%20Embedding.ipynb)
11. Running Bokeh Applications (11%20-%20Running%20Bokeh%20Applications.ipynb)

As well as some extra topic appendices:

A1. Models and Primitives (A1%20-%20Models%20and%20Primitives.ipynb)
A2. Visualizing Big Data with Datashader (A2%20-%20Visualizing%20Big%20Data%20with%20Datashader.ipynb)
A3. High-Level Charting with Holoviews (A3%20-%20High-Level%20Charting%20with%20Holoviews.ipynb)
A4. Additional Resources (A4%20-%20Additional%20Resources.ipynb)

What is Bokeh

Bokeh is an interactive visualization library that targets modern web browsers for presentation. It is good for:

- Interactive visualization in modern browsers
- Standalone HTML documents, or server-backed apps
- Expressive and versatile graphics
- Large, dynamic or streaming data
- Easy usage from python (or Scala, or R, or...)

And most importantly:

NO JAVASCRIPT REQUIRED

Bokeh is an interactive visualization library for modern web browsers. It provides elegant, concise construction of versatile graphics, and affords high-performance interactivity over large or streaming datasets. Bokeh can help anyone who would like to quickly and easily make interactive plots, dashboards, and data applications.

What can I *do* with Bokeh

In [1]:

```
# Standard imports

from bokeh.io import output_notebook, show
output_notebook()
```

(https://bokeh.org) Loading BokehJS ...

In [2]:

```
# Plot a complex chart with interactive hover in a few lines of code

from bokeh.models import ColumnDataSource, HoverTool
from bokeh.plotting import figure
from bokeh.sampledata.autompg import autompg_clean as df
from bokeh.transform import factor_cmap

df.cyl = df.cyl.astype(str)
df.yr = df.yr.astype(str)

group = df.groupby(by=['cyl', 'mfr'])
source = ColumnDataSource(group)

p = figure(plot_width=800, plot_height=300, title="Mean MPG by # Cylinders and Manu
           x_range=group, toolbar_location=None, tools="")

p.xgrid.grid_line_color = None
p.xaxis.axis_label = "Manufacturer grouped by # Cylinders"
p.xaxis.major_label_orientation = 1.2

index_cmap = factor_cmap('cyl_mfr', palette=['#2b83ba', '#abdda4', '#ffffbf', '#fda
                         factors=sorted(df.cyl.unique()), end=1)

p.vbar(x='cyl_mfr', top='mpg_mean', width=1, source=source,
       line_color="white", fill_color=index_cmap,
       hover_line_color="darkgrey", hover_fill_color=index_cmap)

p.add_tools(HoverTool(tooltips=[("MPG", "@mpg_mean"), ("Cyl, Mfr", "@cyl_mfr")]))

show(p)
```

In [3]:

```
# Create and deploy interactive data applications

from IPython.display import IFrame
IFrame('https://demo.bokeh.org/sliders', width=900, height=500)
```

Out[3]:

Getting set up

In [4]:

```
from IPython.core.display import Markdown
Markdown(open("README.md").read())
```

Out[4]:

```
<IPython.core.display.Markdown object>
```

Setup-test, run the next cell. Hopefully you should see output that looks something like this:

```
IPython - 7.9.0
Pandas - 0.25.2
Bokeh - 1.4.0
```

If this isn't working for you, see the `README.md` (README.md) in this directory.

In [5]:

```
from IPython import __version__ as ipython_version
from pandas import __version__ as pandas_version
from bokeh import __version__ as bokeh_version
print("IPython - %s" % ipython_version)
print("Pandas - %s" % pandas_version)
print("Bokeh - %s" % bokeh_version)
```

```
IPython - 7.12.0
Pandas - 1.0.1
Bokeh - 1.4.0
```

Next Section

Click on this link to go to the next notebook: 01 - Basic Plotting (01%20-%20Basic%20Plotting.ipynb)

In [ ]:

```

```