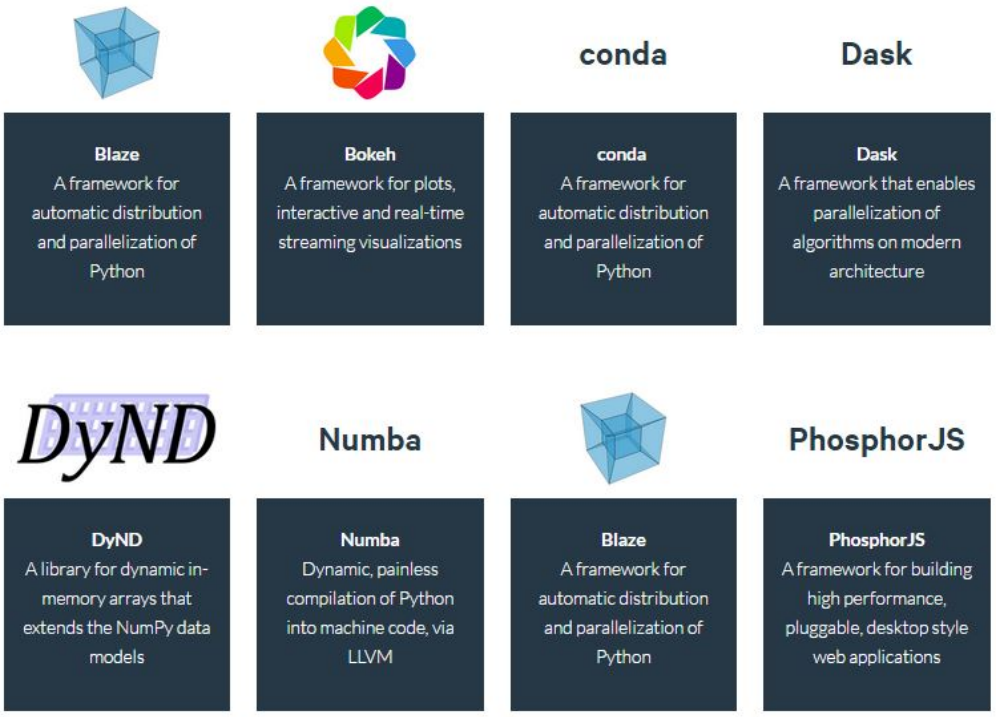
Bokeh in IPython Notebook

Bokeh is a Python interactive visualization library for large datasets that natively uses the latest web technologies. Its goal is to provide elegant, concise construction of novel graphics in the style of Protovis/D3, while delivering high-performance interactivity over large data to thin clients.

- Bokeh is developed by **Continuum Analytics**.



Bokeh scales visualization to Big Data

(From Bokeh Documentation)

- Interactive and real-time streaming visualization framework that scales to Big Data with data shading
- Bokeh is a Python data visualization library combining the ideas of the **Grammar of Graphics** and **Protovis**, with enhancements to support interactive visualization. Its primary output backend is HTML5 Canvas.
- There are many excellent plotting packages for Python, but they generally do not optimize for the particular needs of statistical plotting or multidimensional datasets.
- Additionally, advanced visual customization is typically difficult for non-programmers, and most libraries do not build a reified data processing pipeline that supports rich interactivity like linked brushing.
- Bokeh addresses these problems at their core by using a declarative data transformation scheme, and is engineered to operate in a client/server model for the modern web.
- Bokeh can produce elegant and interactive visualization like D3.js with high-performance interactivity over very large or streaming datasets. Bokeh can help anyone who would like to quickly and easily create interactive plots, dashboards, and data applications.

Benefits of Bokeh:

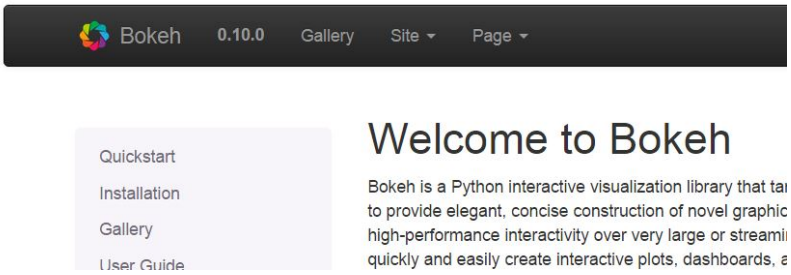
- Bokeh allows you to build complex statistical plots quickly and through simple commands
- Bokeh provides you output in various medium like html, notebook and server
- We can also embed Bokeh visualization to flask and django app
- Bokeh can transform visualization written in other libraries like matplotlib, seaborn, ggplot
- Bokeh has flexibility for applying interaction, layouts and different styling option to visualization

Installation

You may need to install a few Python packages :

```
conda install pandas
conda install bokeh
```

IMPORTANT : Version



- This workshop will be based on version 0.10.
- A lot of code for older version of Bokeh no longer work.
- To check what version you actually have installed, run the following code

```
In [1]: import bokeh
        print(bokeh.__version__)

        0.10.0
```

Challenges with Bokeh

- Like with any upcoming open source library, Bokeh is undergoing a lot of development. So, the code you write today may not be entirely reusable in future.
- It has relatively less visualization options, when compared to ***D3.js***. Hence, it is unlikely in near future that it will challenge ***D3.js*** for its crown.
- Given the benefits and the challenges, it is currently ideal to rapidly develop prototypes. However, if you want to create something for production environment, ***D3.js*** might still be your best bet.