Time to put it all together!

INTERACTIVE DATA VISUALIZATION WITH BOKEH





The Gapminder dataset

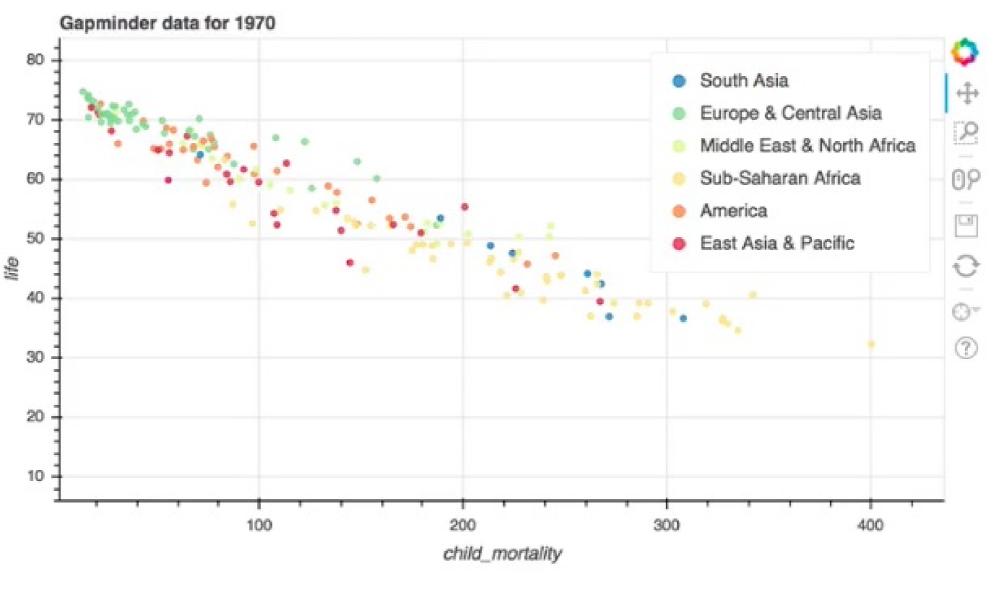
data.head()

	Со	untry	fertility	life	population	child_mortality	gdp	region
Ye	ar							
19	64 Afghan	istan	7.671	33.639	10474903.0	339.7	1182.0	South Asia
19	65 Afghan	istan	7.671	34.152	10697983.0	334.1	1182.0	South Asia
19	66 Afghan	istan	7.671	34.662	10927724.0	328.7	1168.0	South Asia
19	67 Afghan	istan	7.671	35.170	11163656.0	323.3	1173.0	South Asia
19	68 Afghan	istan	7.671	35.674	11411022.0	318.1	1187.0	South Asia



Data exploration tool





Let's practice!



Starting the app

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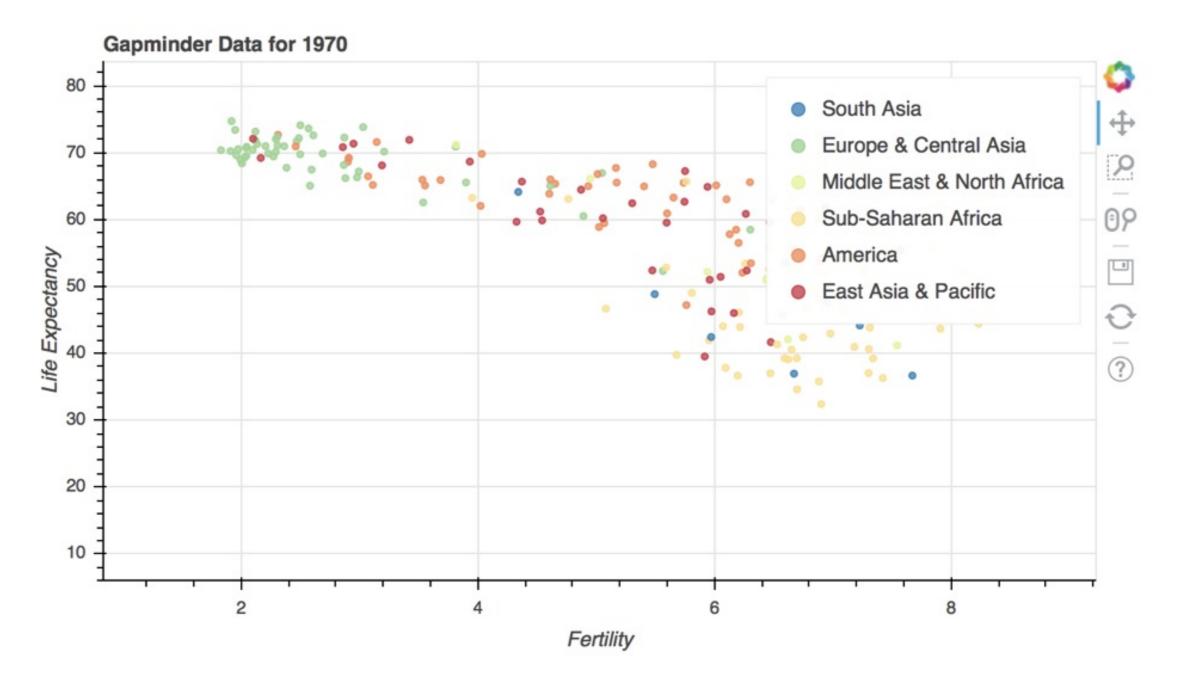




Adding just a plot

```
from bokeh.io import curdoc
# Create plots and widgets
# Add callbacks
# Arrange plots and widgets in layouts
curdoc().add_root(layout)
```

Adding just a plot

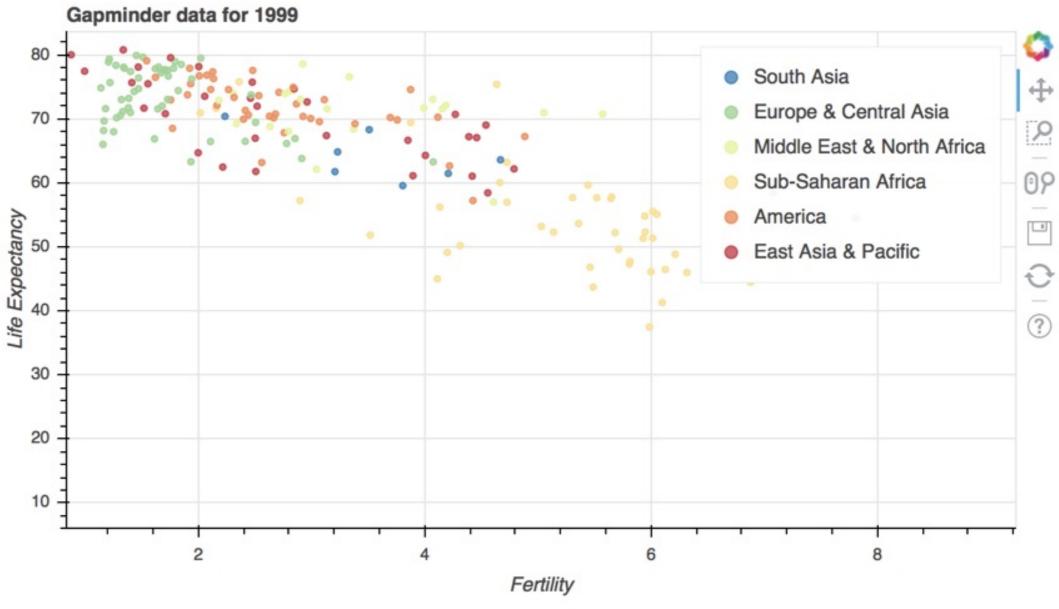


Adding a slider

```
# Define a callback taking attr, old, new
def update_plot(attr, old, new):
    yr = slider.value
    new_data = {
        # Update date here
    source.data = new data
    plot.title.text = # new title text
# Create a slider
slider = Slider(start=1970, end=2010, step=1,
            value=1970, title='Year')
# Add a callback to its value
slider.on_change('value', update_plot)
```

Result for this section





Let's practice!



Adding more interactivity to the app

INTERACTIVE DATA VISUALIZATION WITH BOKEH





Adding a Hover Tool

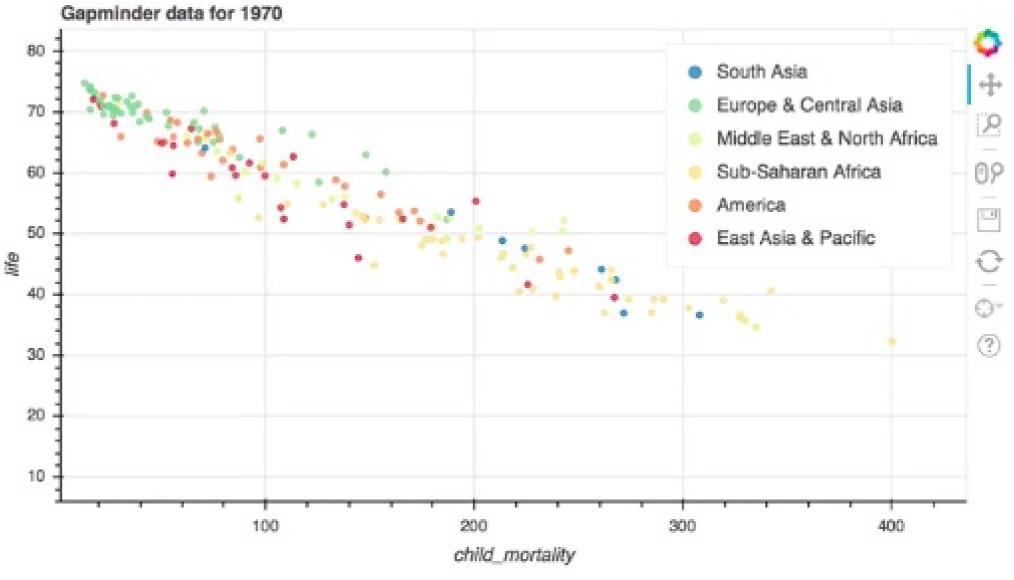
```
from bokeh.models import HoverTool
# HoverTool tooltips accepts a list of tuples
hover = HoverTool(tooltips=[
    ('species name', '@species'),
    ('petal length', '@petal_length'),
    ('sepal length', '@sepal_length')
plot = figure(tools=[hover, 'pan', 'wheel_zoom'])
```

Adding a dropdown menu

```
from bokeh.models import Select
# Define a callback taking attr, old, new
def callback(attr, old, new):
    # Update the plot here
menu = Select(options=['foo', 'bar', 'baz'],
        value='foo', title='A menu of options')
menu.on_change('value', callback)
```

The final result





Let's practice!



Congratulations!

INTERACTIVE DATA VISUALIZATION WITH BOKEH





Recap and Next Steps

- The bokeh.plotting interface for basic plotting
- How to customize plots and add layouts and interactions
- The power of the bokeh server for creating richly interactive visualization applications

https://bokeh.github.io

Congratulations!

