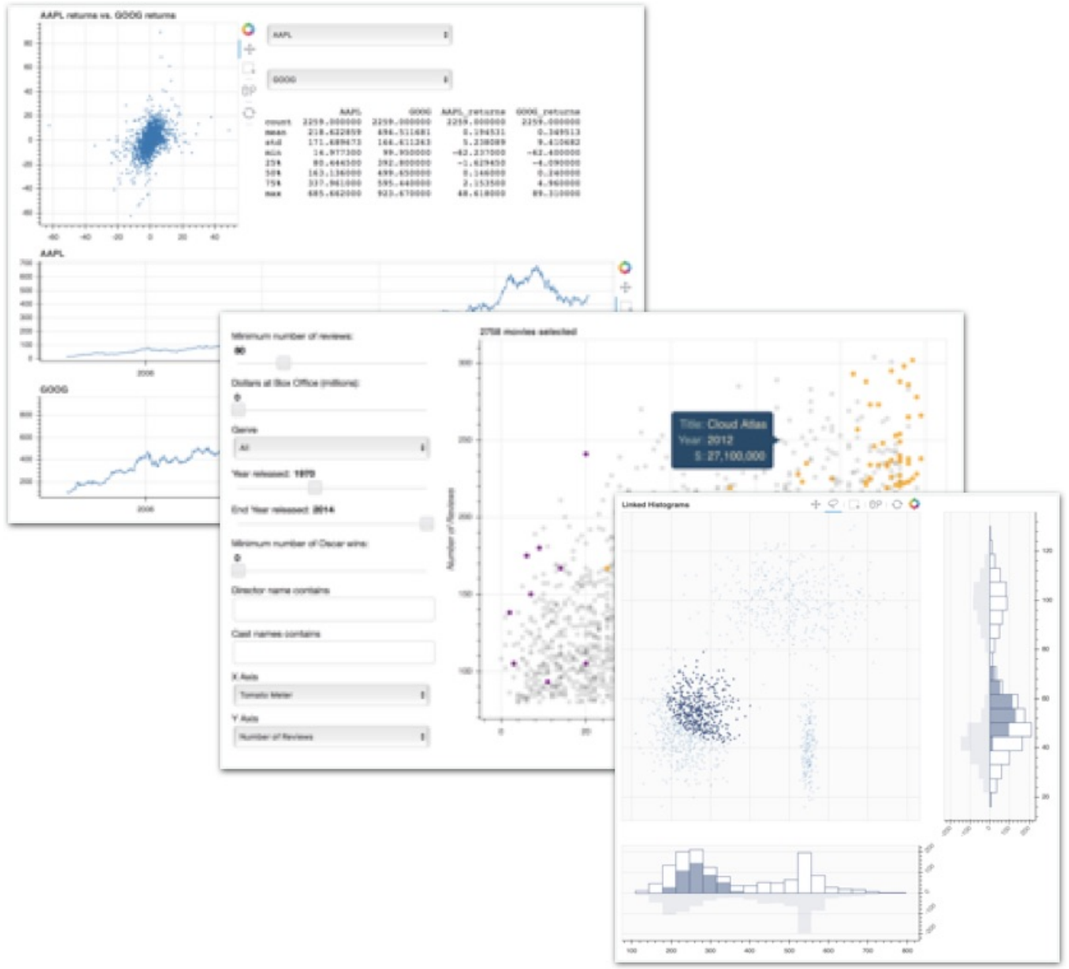
Introduction to layouts

INTERACTIVE DATA VISUALIZATION WITH BOKEH

Bryan Van de Ven
Core Developer of Bokeh

Arranging multiple plots

- Arrange plots (and controls) visually on a page.
  - rows, columns
  - grid arrangements
  - tabbed layouts

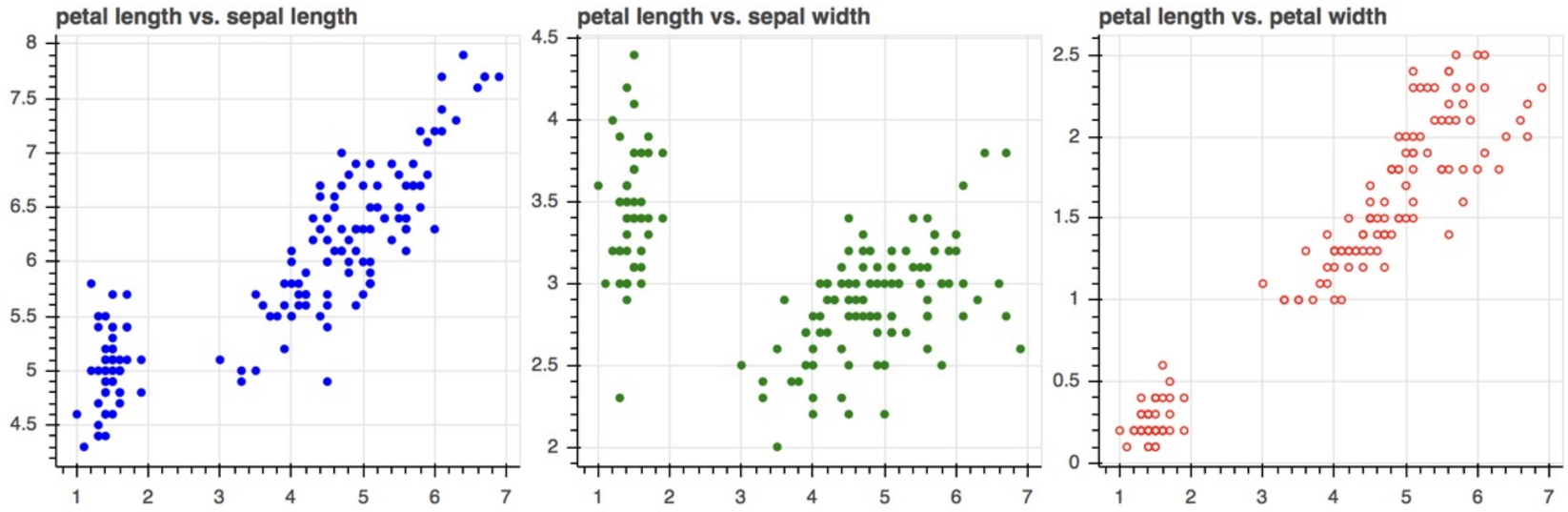


Rows of plots

```
from bokeh.layouts import row

layout = row(p1, p2, p3)

output_file('row.html')
show(layout)
```

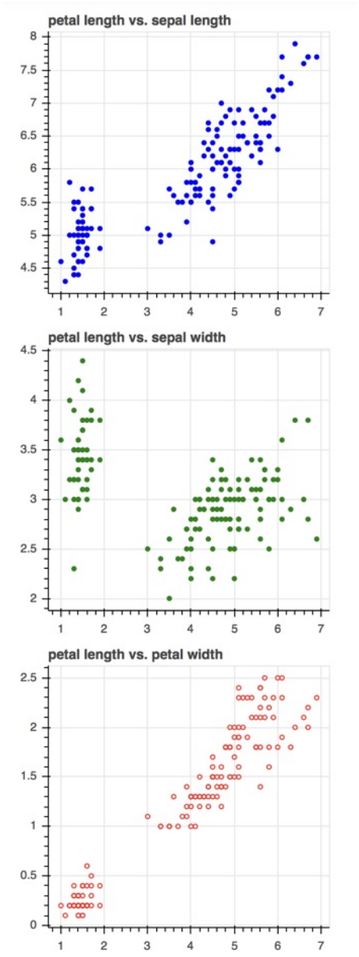


Columns of plots

```
from bokeh.layouts import column

layout = column(p1, p2, p3)

output_file('column.html')
show(layout)
```



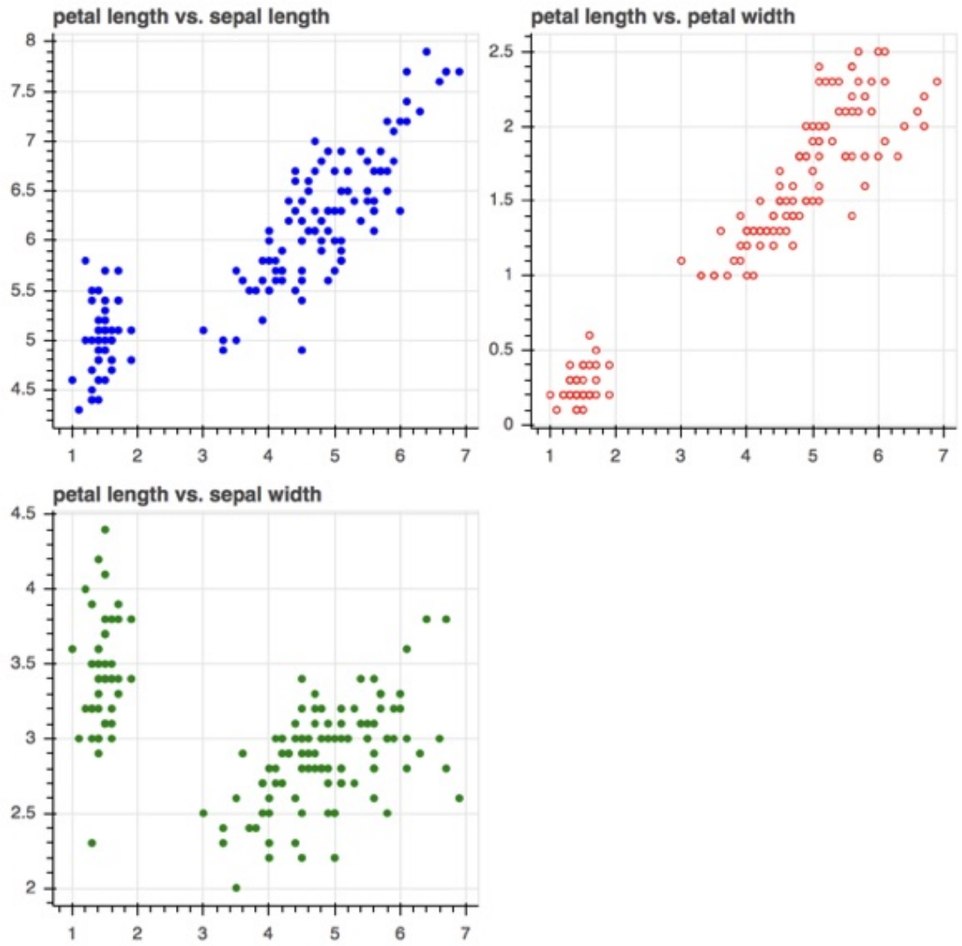
Nested layouts

Rows and columns can be nested for more sophisticated layouts

```
from bokeh.layouts import column, row

layout = row(column(p1, p2), p3)

output_file('nested.html')
show(layout)
```



Let's practice!

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Advanced layouts

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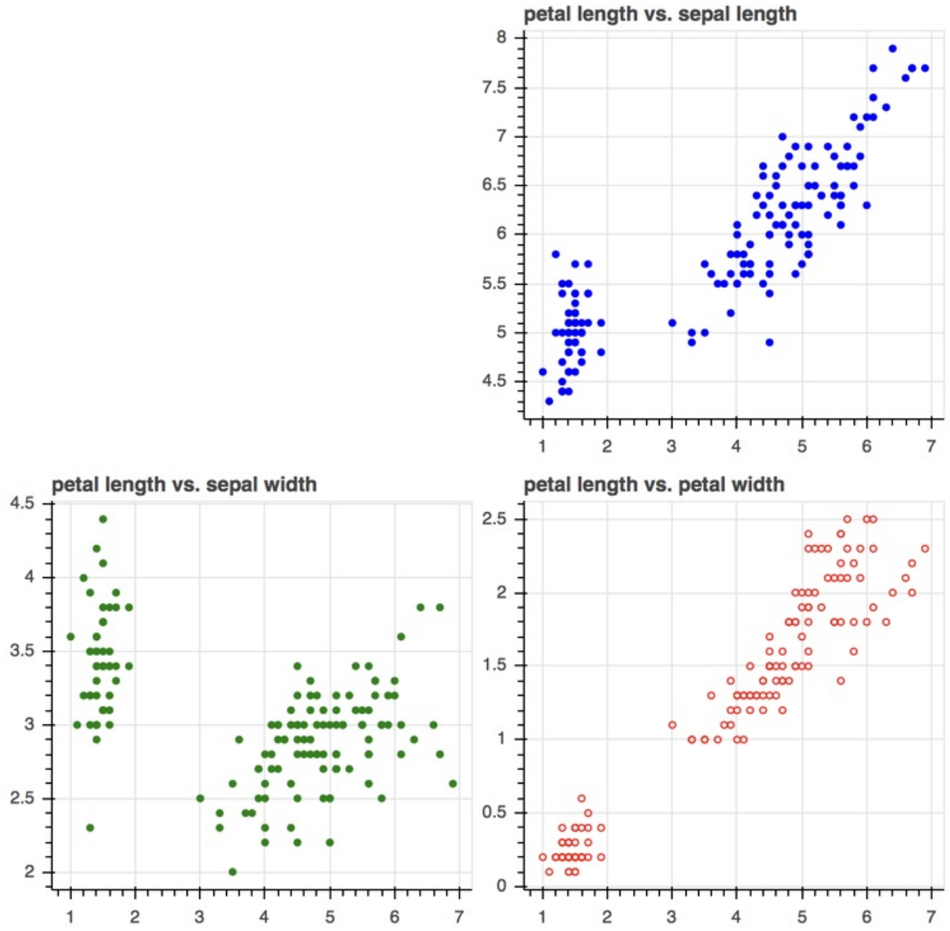
Gridplots

```
from bokeh.layouts import gridplot

layout = gridplot([[None, p1], [p2, p3]],
                  toolbar_location=None)

output_file('nested.html')
show(layout)
```

- Give a "list of rows" for layout
- Can use `None` as a placeholder
- Accepts `toolbar_location`



Tabbed layouts

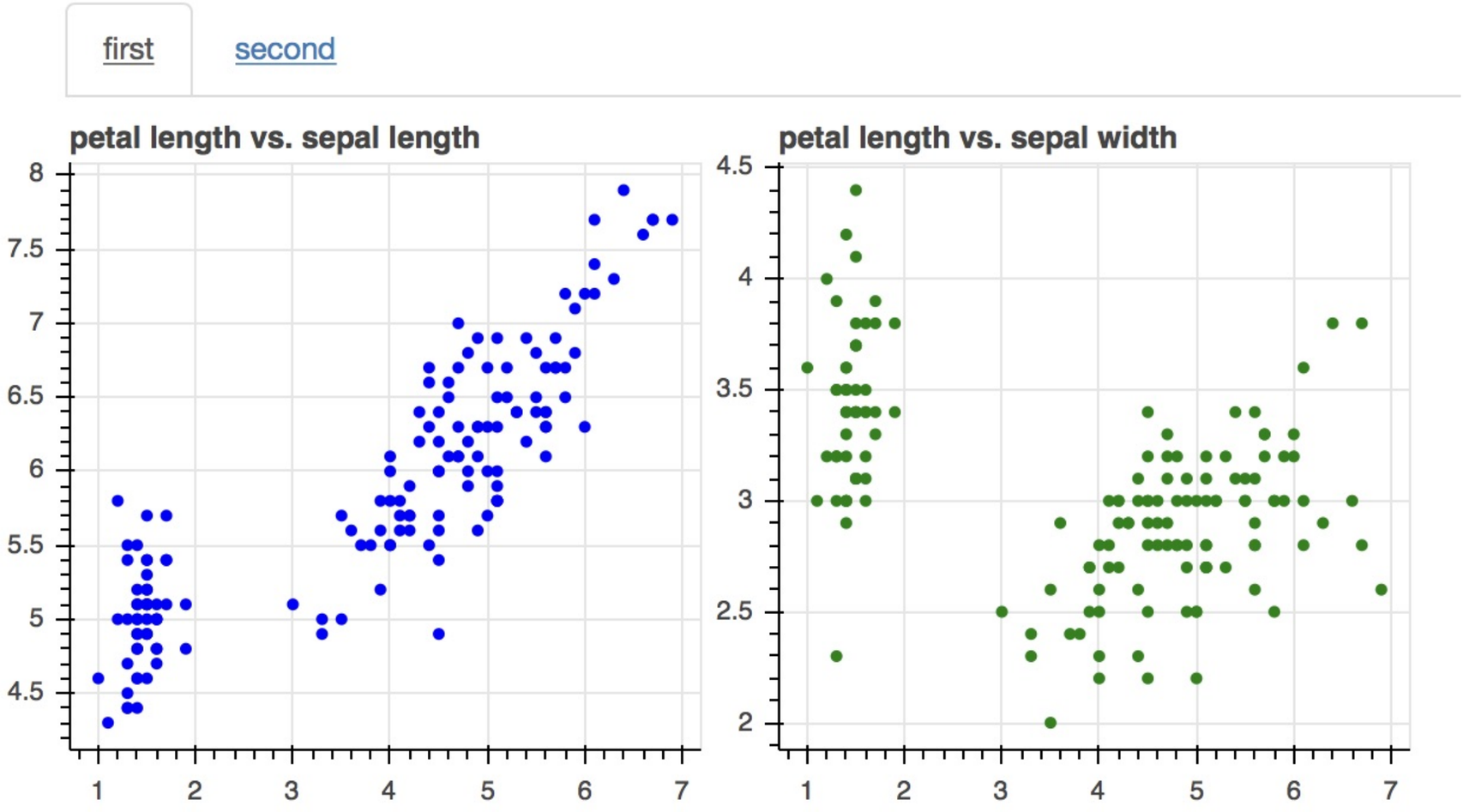
```
from bokeh.models.widgets import Panel, Tabs

# Create a Panel with a title for each tab
first = Panel(child=row(p1, p2), title='first')
second = Panel(child=row(p3), title='second')

tabs = Tabs(tabs=[first, second])

output_file('tabbed.html')
show(tabs)
```

Tabbed layouts



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Linking plots together

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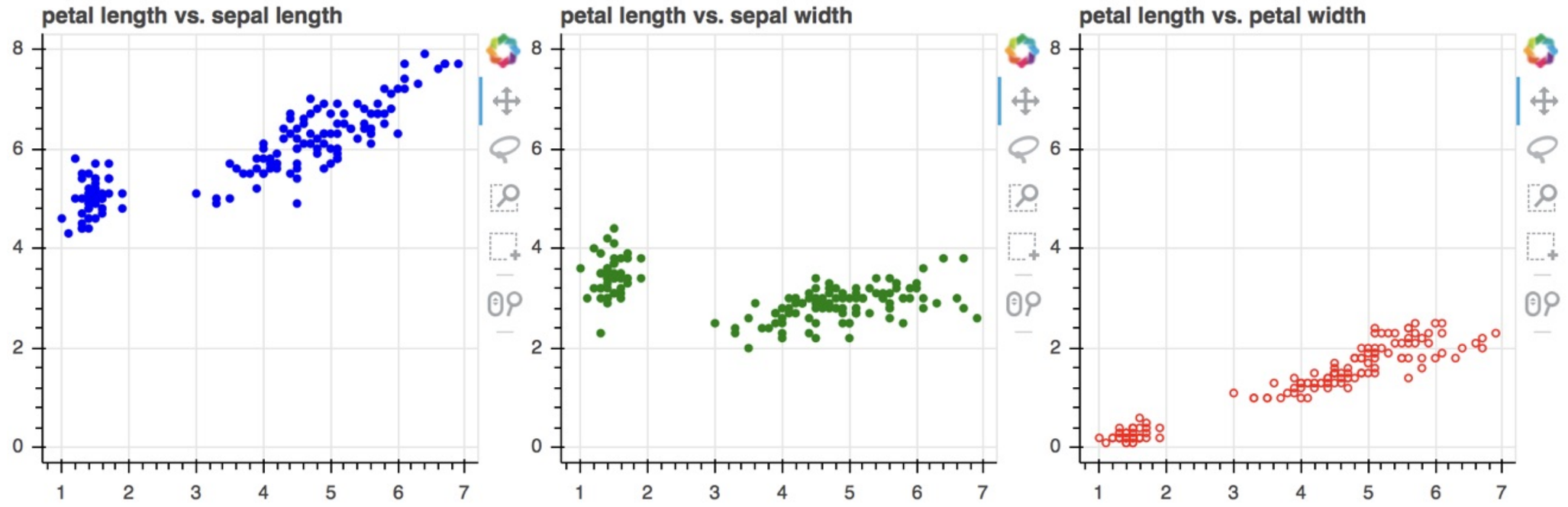
Linking axes

```
p3.x_range = p2.x_range = p1.x_range
p3.y_range = p2.y_range = p1.y_range
```



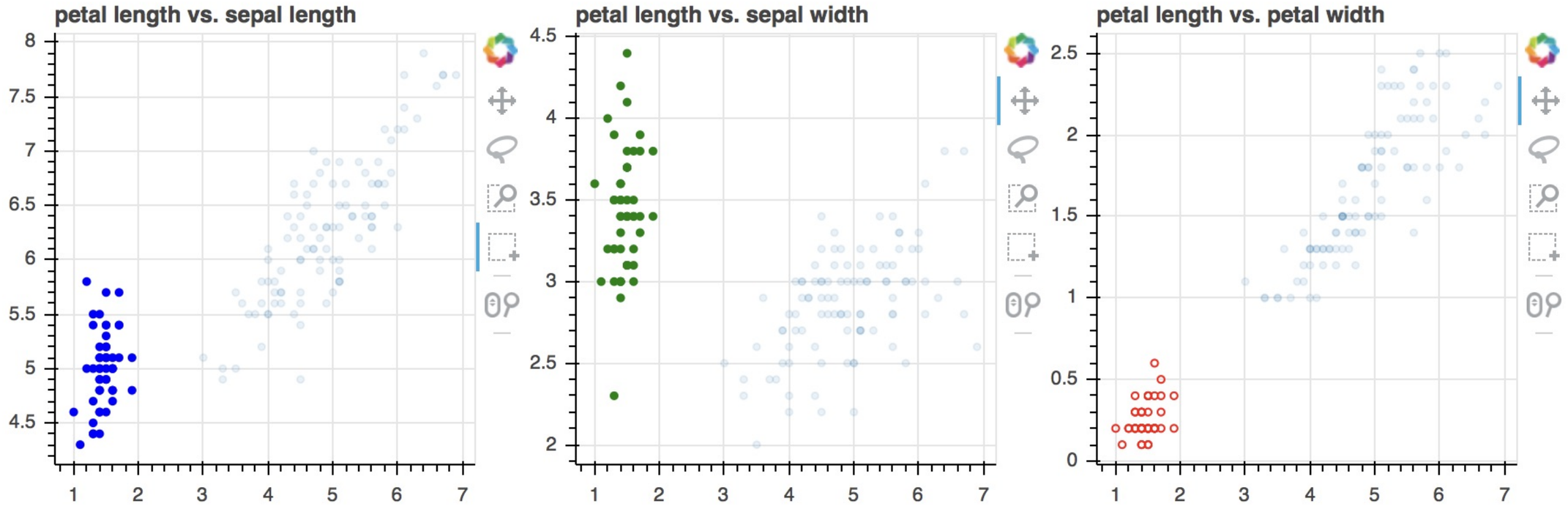
Linking selections

```
p1 = figure(title='petal length vs. sepal length')
p1.circle('petal_length', 'sepal_length',
        color='blue', source=source)

p2 = figure(title='petal length vs. sepal width')
p2.circle('petal_length', 'sepal_width',
        color='green', source=source)

p3 = figure(title='petal length vs. petal width')
p3.circle('petal_length', 'petal_width',
        line_color='red', fill_color=None,
        source=source)
```

Linking selections



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INTERACTIVE DATA VISUALIZATION WITH BOKEH

Annotations and guides

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datacamp

What are they?

- Help relate scale information to the viewer
  - Axes, Grids (default on most plots)

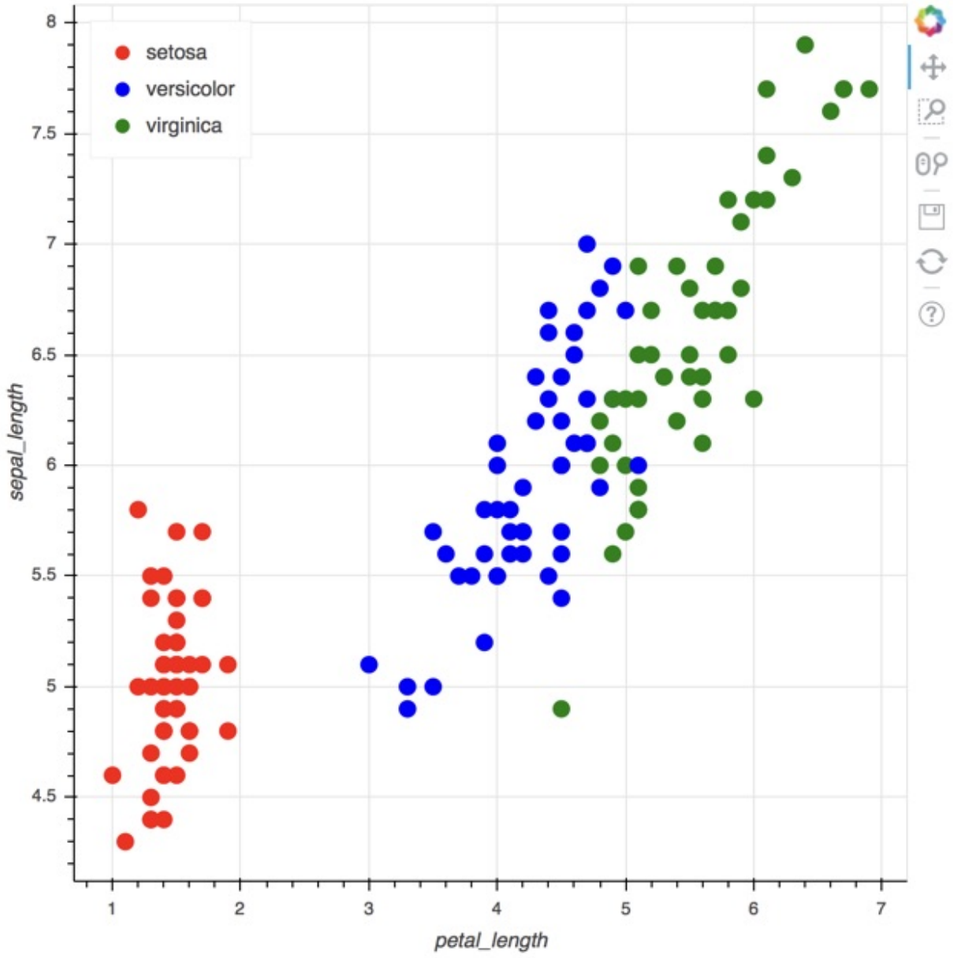
- Explain the visual encodings that are used
  - Legends

- Drill down into the details not visible in the plot
  - Hover Tooltips

Legends

```
plot.circle('petal_length', 'sepal_length',
        size=10, source=source,
        color={'field': 'species',
        'transform': mapper},
        legend='species')

plot.legend.location = 'top_left'
```

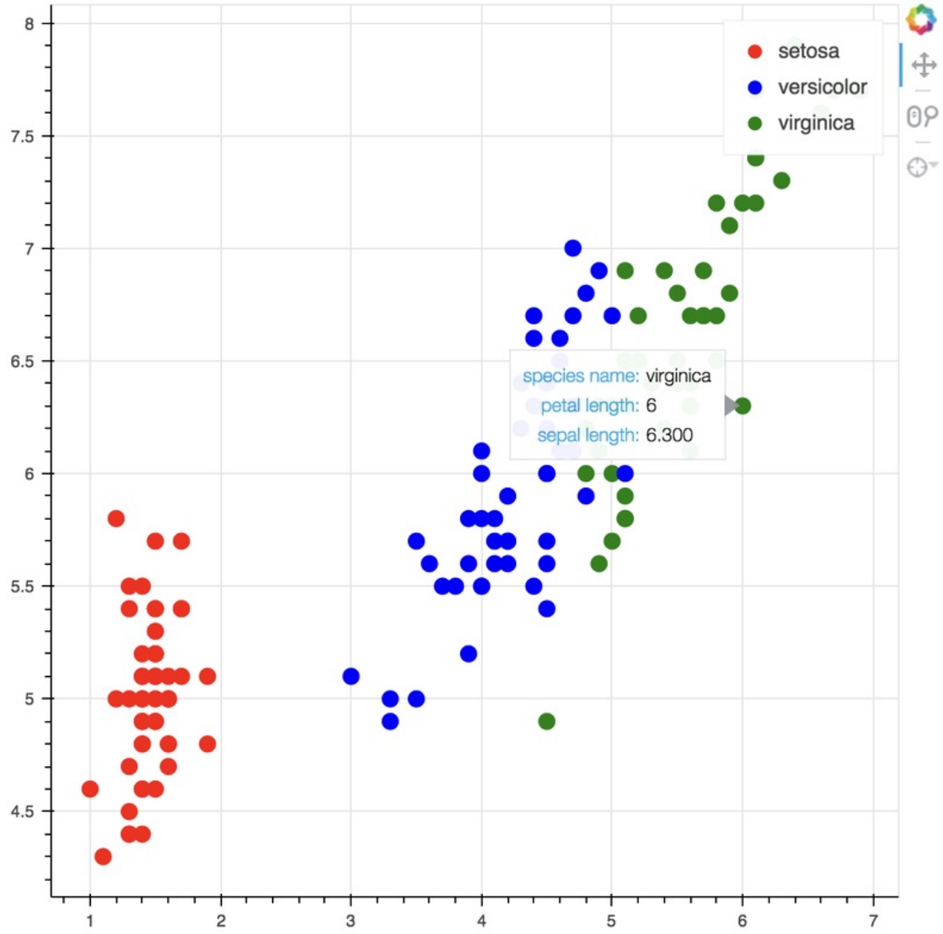


Hover Tooltips

```
from bokeh.models import HoverTool

hover = HoverTool(tooltips=[
    ('species name', '@species'),
    ('petal length', '@petal_length'),
    ('sepal length', '@sepal_length'),
    ])

plot = figure(tools=[hover, 'pan',
        'wheel_zoom'])
```



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