

Basic Premise

- ▶ Making plots is a very repetitive: draw this line, add these colored points, then add these, etc.
- ▶ Instead of re-using the same code over and over, ggplot implements them using a high-level but very expressive API.
- ▶ The result is less time spent creating your charts, and more time interpreting what they mean.

- ▶ ggplot is not a good fit for people trying to make highly customized data visualizations.
- ▶ While you can make some very intricate, great looking plots, ggplot sacrifices highly customization in favor of generally doing "what you'd expect".

Data

- ▶ ggplot has a symbiotic relationship with pandas.
- ▶ If you're planning on using ggplot, it's best to keep your data in DataFrames.
- ▶ Think of a DataFrame as a tabular data object. For example, let's look at the diamonds dataset which ships with ggplot.

```
from ggplot import *  
diamonds.head()
```

	carat	cut	color	clarity	depth	table	price	x	y	z
0	0.23	Ideal	E	SI2	61.5	55	326	3.95	3.98	2.43
1	0.21	Premium	E	SI1	59.8	61	326	3.89	3.84	2.31
2	0.23	Good	E	VS1	56.9	65	327	4.05	4.07	2.31
3	0.29	Premium	I	VS2	62.4	58	334	4.20	4.23	2.63
4	0.31	Good	J	SI2	63.3	58	335	4.34	4.35	2.75

Aesthetics

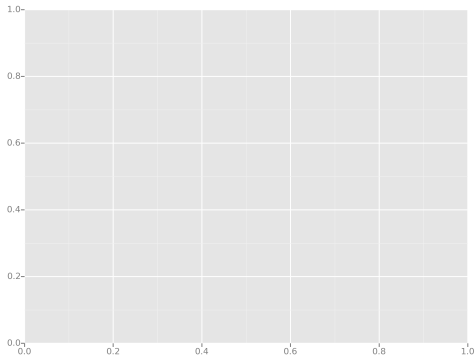
Aesthetics describe how your data will relate to your plots. Some common aesthetics are: `x`, `y`, and `color`. Aesthetics are specific to the type of plot (or layer) you're adding to your visual. For example, a scatterplot (`geom_point`) and a line (`geom_line`) will share `x` and `y`, but only a line chart has a `linetype` aesthetic.

Layers

- ▶ ggplot lets you combine or add different types of visualization components (or layers) together.
- ▶ I think this is easiest to understand with an example.

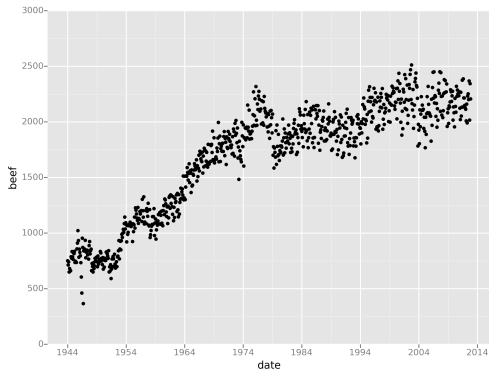
Start with a blank canvas.

```
p = ggplot(aes(x='date', y='beef'), data=meat)
p
```



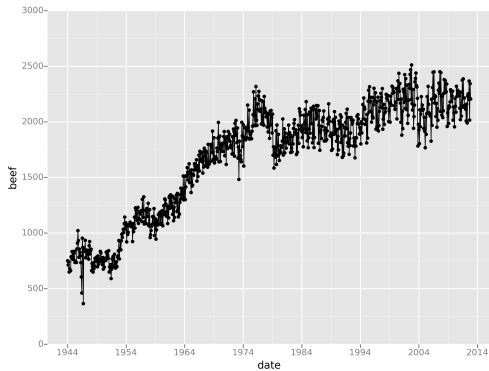
Add some points.

```
p + geom_point()
```



Add a line.

```
p + geom_point() + geom_line()
```



Add a trendline.

```
p + geom_point() + geom_line() +  
  stat_smooth(color="blue")
```

