Visualizing the distribution of a dataset

- When dealing with a set of data, often the first thing youll want to do is get a sense for how the variables are distributed.
- This chapter of the tutorial will give a brief introduction to some of the tools in seaborn for examining univariate and bivariate distributions.
- You may also want to look at the categorical plots chapter for examples of functions that make it easy to compare the distribution of a variable across levels of other variables.

```
%matplotlib inline
import numpy as np
import pandas as pd
from scipy import stats, integrate
import matplotlib.pyplot as plt
import seaborn as sns
sns.set(color_codes=True)
np.random.seed(sum(map(ord, "distributions")))
```

The most convenient way to take a quick look at a univariate distribution in seaborn is the distplot() function. By default, this will draw a histogram and fit a kernel density estimate (KDE).

```
x = np.random.normal(size=100)
sns.distplot(x);
```

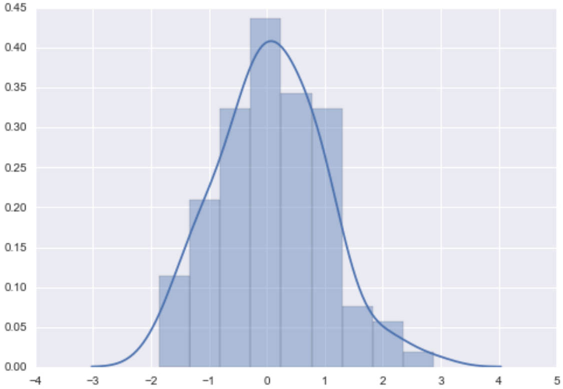


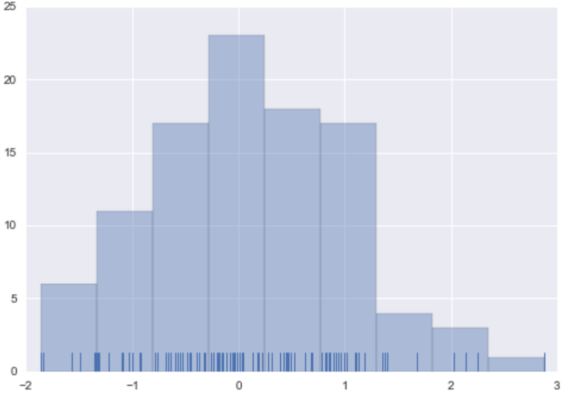
Figure:

Histograms

- Histograms are likely familiar, and a hist function already exists in matplotlib.
- A histogram represents the distribution of data by forming bins along the range of the data and then drawing bars to show the number of observations that fall in each bin.

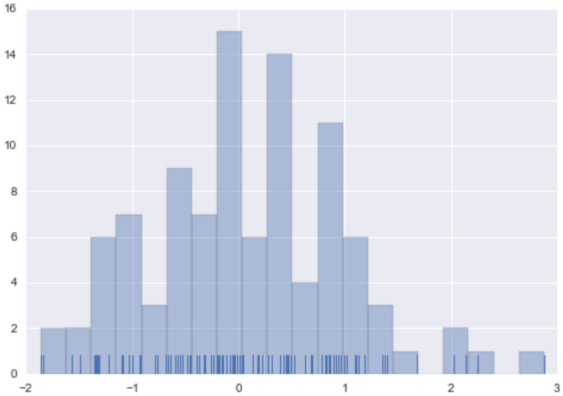
- To illustrate this, lets remove the density curve and add a rug plot, which draws a small vertical tick at each observation.
- You can make the rug plot itself with the rugplot() function, but it is also available in `distplot()`:

sns.distplot(x, kde=False, rug=True);



When drawing histograms, the main choice you have is the number of bins to use and where to place them. `distplot()` uses a simple rule to make a good guess for what the right number is by default, but trying more or fewer bins might reveal other features in the data:

```
sns.distplot(x, bins=20, kde=False, rug=True);
```


16
14
12
10
8
6
4
2
0
−2
−1
0
1
2
3