

# Educate!

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## Plotting Distributions – Histograms And Box Plots

September 22, 2016 by [Admin](#)[\(http://courselibrary.shaveensingh.com/forum/profile/admin/\)](http://courselibrary.shaveensingh.com/forum/profile/admin/)

### Plotting Distributions – Histograms And Box Plots

```
1 %matplotlib inline
2 import matplotlib.pyplot as plt
3 import numpy as np
4
5 #Optional:
6 #Setting the state of the pseudo-random number generator
7 #to a fixed value for reproducibility
8 np.random.seed(13)
```

## Histograms

**Purpose:** Showing the spread of a data column.

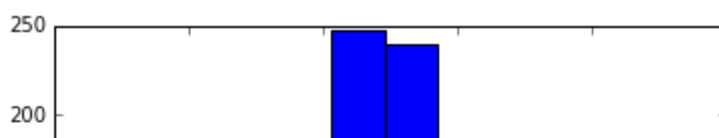
**matplotlib function:** hist(x)

- x: List of values to display the distribution of.

Example:

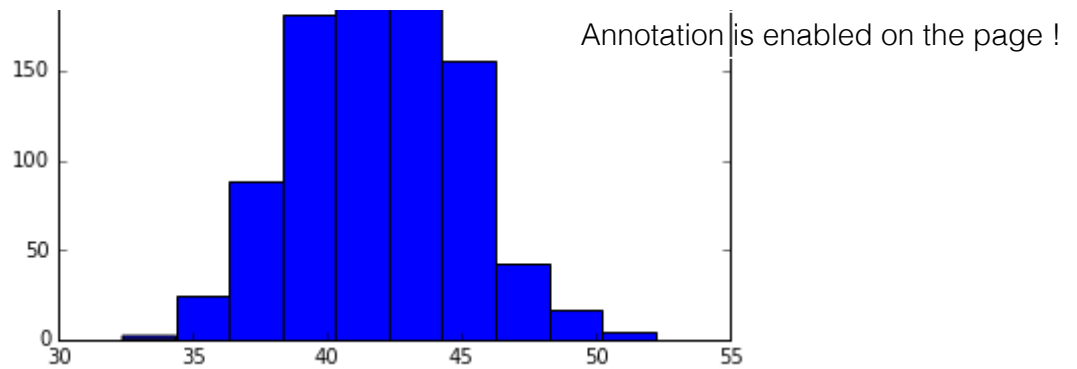
```
1 column_data = np.random.normal(42, 3, 1000)
2
3 plt.figure()
4
5 plt.hist(column_data)
6
7 ;
```

Output:



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### Commonly used parameters:

- color: Set the color of the bars in the histogram.
- bins: Set the number of bins to display in the histogram, or specify specific bins.
- normed: Indicate whether the bins should display fractions instead of counts.

Click to see more examples on histograms: ↩

## Box plots

**Purpose:** Summarize the distribution of a data column.

**matplotlib function:** boxplot(x)

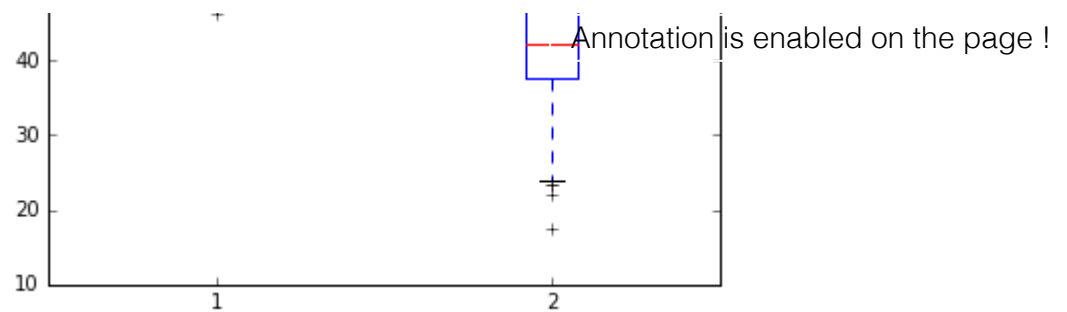
- x: List of values (or list of lists of values) to display the distribution of.

```
1 two_columns_data = [np.random.normal(57, 3, 1000),  
2 np.random.normal(42, 7, 1000)]  
3  
4 plt.boxplot(two_columns_data)  
5 ;
```



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### Commonly used parameters:

- labels: Set the labels for the box plots.
- notch: Indicate whether notches should be created around the median.
- bootstrap: Indicate whether the notches around the median should be bootstrapped.

Click to see more examples on box plots: ↩

You have now completed this section.

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