

# Visualizing Frequency Distributions: Takeaways



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## Syntax

- Generating a bar plot for a frequency distribution table:

```
### Vertical bar plot ###  
Series.value_counts().plot.bar()
```

```
### Horizontal bar plot ###  
Series.value_counts().plot.barh()
```

- Generating a pie chart for a frequency distribution table:

```
### Using the defaults ###  
Series.value_counts().plot.pie()  
  
### Making the pie chart a circle and adding percentages labels ###  
import matplotlib.pyplot as plt  
Series.value_counts().plot.pie(figsize = (6,6), autopct = '%.1f%%')  
plt.ylabel('') # removes the label of the y-axis
```

- Generating a histogram for a `Series` :

```
Series.plot.hist()
```

## Concepts

- To visualize frequency distributions for *nominal* and *ordinal* variables, we can use:
  - **Bar plots.**
  - **Pie charts.**
- To visualize frequency distributions for variables measured on an interval or ratio scale, we can use a **histogram**.
- Depending on the shape of the histogram, we can have:
  - **Skewed** distributions:
    - Left skewed (negatively skewed) — the tail of the histogram points to the left.
    - Right skewed (positively skewed) — the tail of the histogram points to the right.

- **Symmetrical** distributions:
  - **Normal** distributions — the values pile up in the middle and gradually decrease in frequency toward both ends of the histogram.
  - **Uniform** distributions — the values are distributed uniformly across the entire range of the distribution.

## Resources

- [An introduction](#) to bar plots.
- [An introduction](#) to pie charts.
- [An introduction](#) to histograms.
- [An introduction](#) to skewed distributions.
- [More details](#) on the normal distribution.