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

- <u>An introduction</u> to bar plots.
- <u>An introduction</u> to pie charts.
- An introduction to histograms.
- An introduction to skewed distributions.
- More details on the normal distribution.

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