Dimensionality Reduction
Exercises

Exercise 1. (💻 Clustering Wines)
Load the wine dataset from `sklearn`.

1. Conduct a quick initial analysis.
2. Compute k-Means clusterings and determine the best k using the silhouette coefficient. Do not forget scaling!
3. Visualize the best clustering in a 2D scatter plot.
4. Find an argument, why PCA could be helpful in this case.
5. Run PCA and plot the explained-variance graph.
6. Select the components that each contribute more than 10% of the explained variance.
7. Run the k means clusterings again on the transformed data and compare the results.