Features - In **machine learning**, **features** are individual independent variables that act like a input in your system.

A **label** is the thing we're predicting—the y variable in simple linear regression. The label could be the future price of wheat, the kind of animal shown in a picture, the meaning of an audio clip, or just about anything.

A classifier in machine learning is an algorithm that automatically orders or categorizes data into one or more of a set of “classes.”

A classifier is the algorithm itself – the rules used by machines to classify data. A classification model, on the other hand, is the end result of your classifier’s machine learning. The model is trained using the classifier, so that the model, ultimately, classifies your data.

* Describe a method we discussed in class to determine the value of *k* to use in k-means clustering.

            Solution: We discussed a method called the "elbow method" in which the sum of squared errors (average distance to cluster centers) is plotted as a function of the number of clusters, k. When the graph changes from a steep downward slope to more of a plateau, the improvement in compactness due to increasing clusters is declining. This change is referred to as the elbow and signifies a good choice of k to yield compact clusters that effectively separate the data.