

Give examples of situations in which cluster analysis would be an appropriate data mining technique.

Cluster algorithms are used when the data records do not have predefined class identifiers (i.e., it is not known to what class a particular record belongs).

Give examples of situations in which association would be an appropriate data mining technique.

Association rule mining is appropriate to use when the objective is to discover two or more items (or events or concepts) that go together. Students' answers will differ.

Give examples of situations in which classification would be an appropriate data mining technique. Give examples of situations in which regression would be an appropriate data mining technique.

Students' answers will differ, but should be based on the following issues. Classification is for prediction that can be based on historical data and relationships, such as predicting the weather, product demand, or a student's success in a university. If what is being predicted is a class label (e.g., "sunny," "rainy," or "cloudy") the prediction problem is called a classification, whereas if it is a numeric value (e.g., temperature such as 68°F), the prediction problem is called a regression.