

Module 04: Classification

### Binary Classification

Artificial Intelligence

Machine Learning

Traditional Rule-Based

Unsupervised

Supervised

Clustering

Regression

Binary Classification

Multiclass Classification

The model predicts whether a record is an instance of a specific class or category

Example: A model that predicts whether a customer will cancel their subscription

In Supervised Machine Learning, inputs are called feature values while outputs are called label values

Age	Gender	Booked Hotel	Linked To Social Media	Frequent Flyer Member	Income Class	Churn
24	M	Y	N	Y	Middle Income	Y
29	M	N	N	N	Middle Income	N
34	F	Y	Y	Y	High Income	N
43	M	Y	N	N	High Income	N
44	F	N	N	N	Middle Income	N
27	F	Y	Y	Y	Low Income	Y
33	M	N	N	N	Middle Income	N
31	F	N	Y	N	Low Income	Y
22	F	Y	N	Y	Low Income	Y
26	F	N	Y	N	Middle Income	N
51	M	N	Y	N	Middle Income	N

Feature values

Labels

The available data set is split into training data and test data. Typical training data is around 70% to 80%.

Training Data

24	M	Y	N	Y	Middle Income	Y
29	M	N	N	N	Middle Income	N
34	F	Y	Y	Y	High Income	N
43	M	Y	N	N	High Income	N
44	F	N	N	N	Middle Income	N
27	F	Y	Y	Y	Low Income	Y
33	M	N	N	N	Middle Income	N

Test Data

31	F	N	Y	N	Low Income	Y
22	F	Y	N	Y	Low Income	Y
26	F	N	Y	N	Middle Income	N
51	M	N	Y	N	Middle Income	N