

Instance (observation, sample, Data point)

- is a single complete unit of data that includes all Features and in supervised learning its target val

Ex: The following Data set has 2 instances

Features				target
Person	Name	age	Sex	Married?
1	Alice	21	.	Yes
2	Bob	32	.	No

* an instance is basically one row in a data table and cols = Features + target

Label (class, target value) • only for supervised learning

- is the known correct output associated with an instance in supervised learning. it is the value the target variable takes in each instance
- so the target = output $\text{target val}(\text{label}) = \text{true output}$

Ex: in the previous data set the label was the target

Person	Name	...	target
1	Bob	...	Yes
2	Jan	...	No

label ←

Ex: in an image rec system for cats / Dogs each img has its label (true val) i.e cat or Dog the model might predict either (target, output) but the labels tells us the true output this helps the model learn and get better

* ML models (supervised learning ones) need a lot of labeled data this requires manual human effort to label lots of images this is called labeling data