**SUPERVISED LEARNING**

Supervised learning is where you have input variables (x) and an output variable (Y) and you use an algorithm to learn the mapping function from the input to the output.

The goal is to approximate the mapping function so well that when you have new input data (x) that you can predict the output variables (Y) for that data.

Supervised learning problems can be further grouped into regression and classification problems.

* **Classification**: A classification problem is when the output variable is a category, such as “red” or “blue” or “disease” and “no disease”.
* **Regression**: A regression problem is when the output variable is a real value, such as “dollars” or “weight”.