

What is the goal?

We want to find a function  $f$  that maps input features to output values.

Let  $X$  be the input features, and  $Y$  be the output values.

We want to find a function  $f$  such that  $Y = f(X)$ .

$$Y = f(X) + \epsilon$$

where  $f$  is a function of  $X_1, \dots, X_p$ ,  $Y$  is the output, and  $\epsilon$  is the error term.