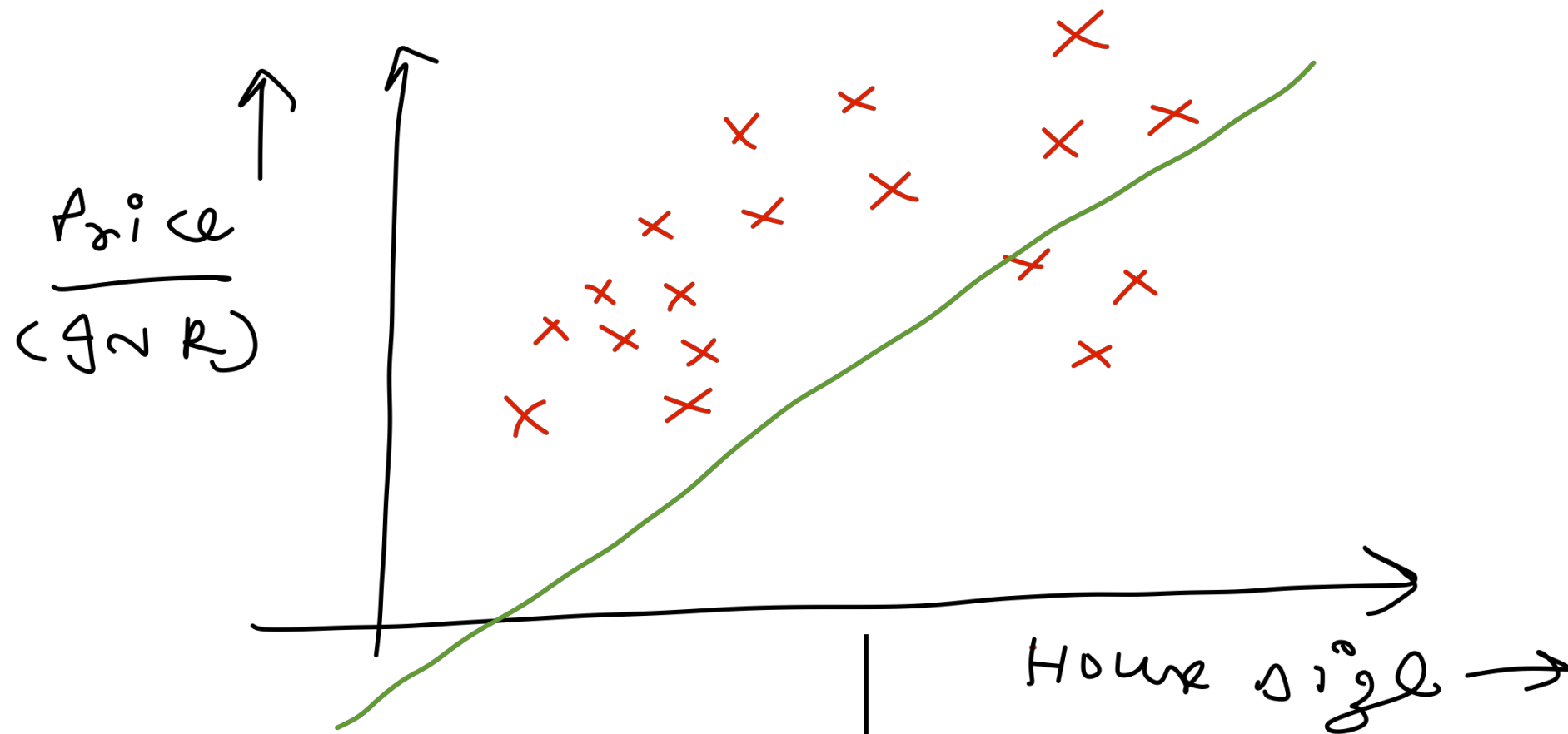


# Representing ML Models



## Supervised Learning

Every example has an “answer” associated with it.

## Regression Problem

A continuous stream of values is being predicted



features

labels

Area of House(Sq Feet)	Price(INR)
100 Sq feet	INR 50
200 Sq Feet	INR 80
300 Sq Feet	INR 120
400 Sq Feet	INR 200
410 Sq Feet	INR 225
420 Sq Feet	INR 300
450 Sq Feet	INR 400
...	...

examples

**'m'**- No of training examples

**'X'**- Features/input to the machine learning model

**'Y'**- Output Labels

$(x, y)$  - training example

$[x^{(i)}, y^{(i)}]$  -  $i^{th}$  example

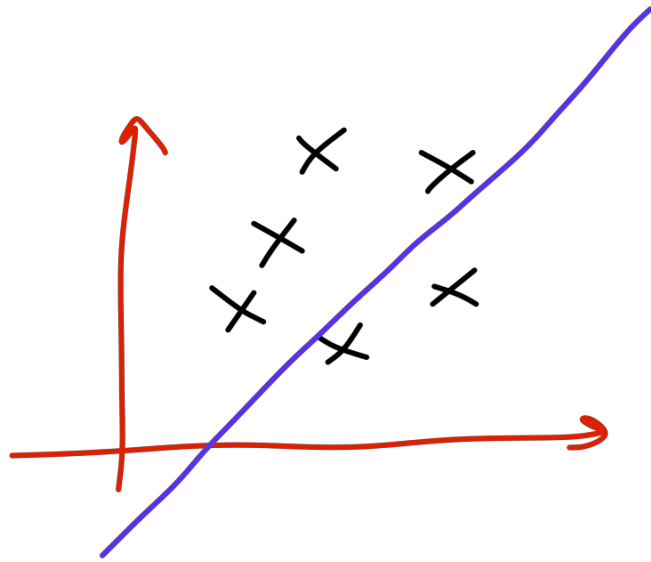
$[x^{(2)}, y^{(2)}]$  - (200 sq feet, 80)

Area of House(Sq Feet)	Price(INR)
100 Sq feet	INR 50
200 Sq Feet	INR 80
300 Sq Feet	INR120
400 Sq Feet	INR 200
410 Sq Feet	INR 225

**In the table given above,**

- **What are the no of training examples**
- **What is the names of features**
- **What are the Labels**
- **What is the value of  $(x(4),y(4))$**

$$h_{\theta}(x) = \theta_0 + \theta_1 x$$



Training Set



Learning Algorithm



h

Input



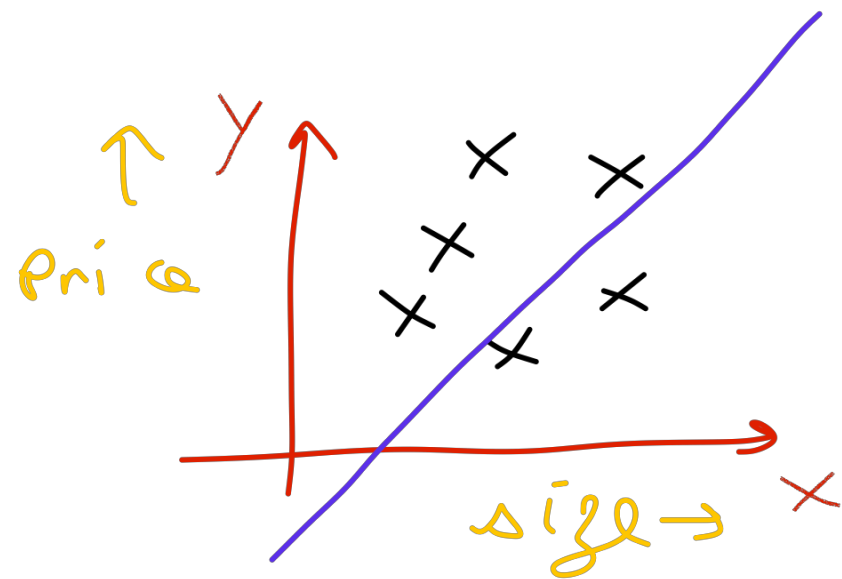
size of  
house

output



Price of  
house

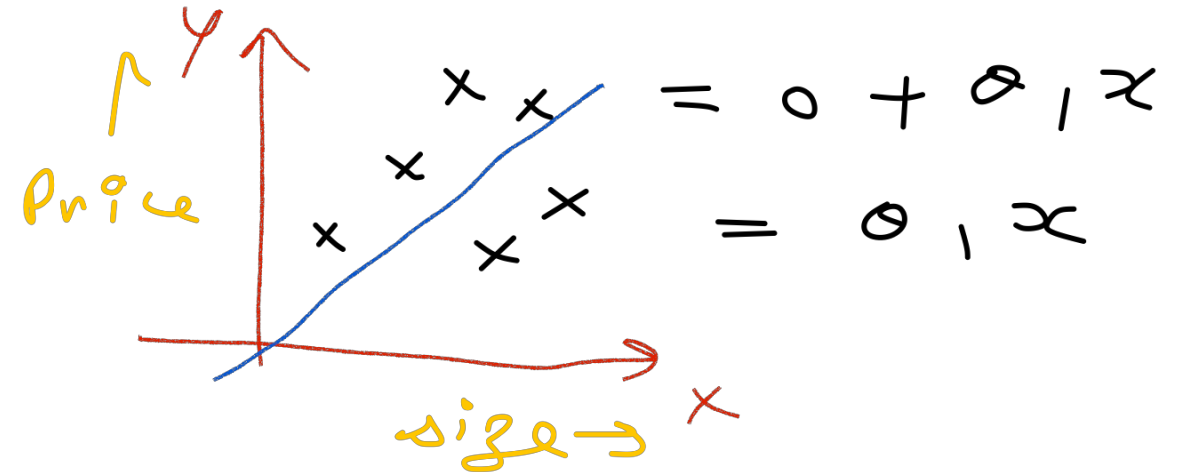
$$h_{\theta}(x) = \theta_0 + \theta_1 x$$



Get the best possible line

Case 1  $\theta_0 = 0$

$$h_{\theta}(x) = \theta_0 + \theta_1 x$$

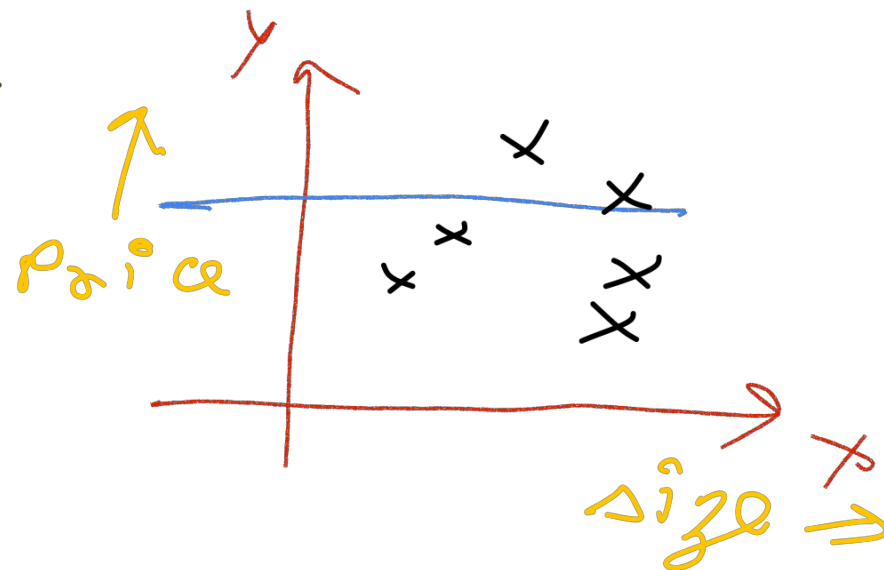


Case 2  $\theta_1 = 0$

$$h_{\theta}(x) = \theta_0 + \theta_1 x$$

$$= \theta_0 + 0$$

$$= \theta_0$$



**THANK YOU !!!!**



**Rajat Modi**