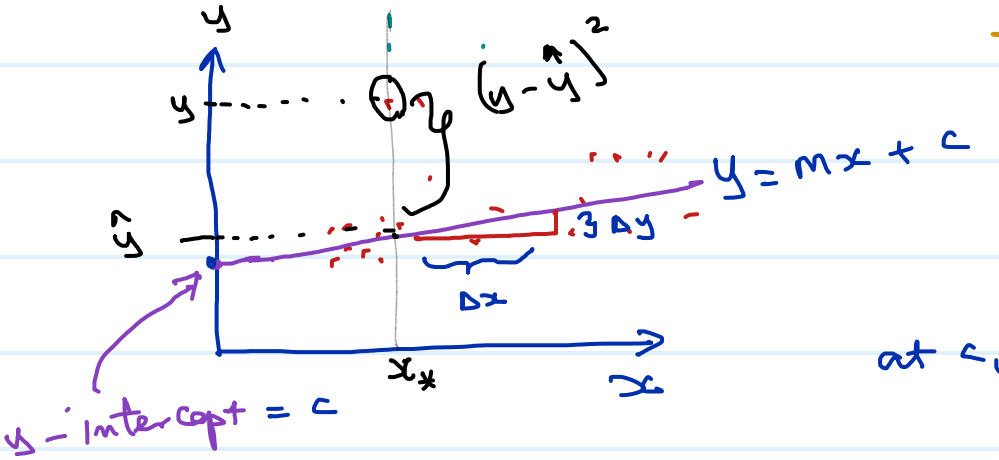
REGRESSION



x	y	ŷ
x_*	y	ŷ

estimated by model

original y

at c, x = 0

They are on line

m = gradient = $\frac{\Delta y}{\Delta x}$ (change in y) / (change in x)

Simple linear regression $y : x_1$

$y = mx_1 + c$

$y = a_1 x_1 + a_0$

a_0, a_1 y parameters of the regression

x_1	x_2	x_3	x_4	y

$y = a_4 x_4 + a_3 x_3 + a_2 x_2 + a_1 x_1 + a_0$

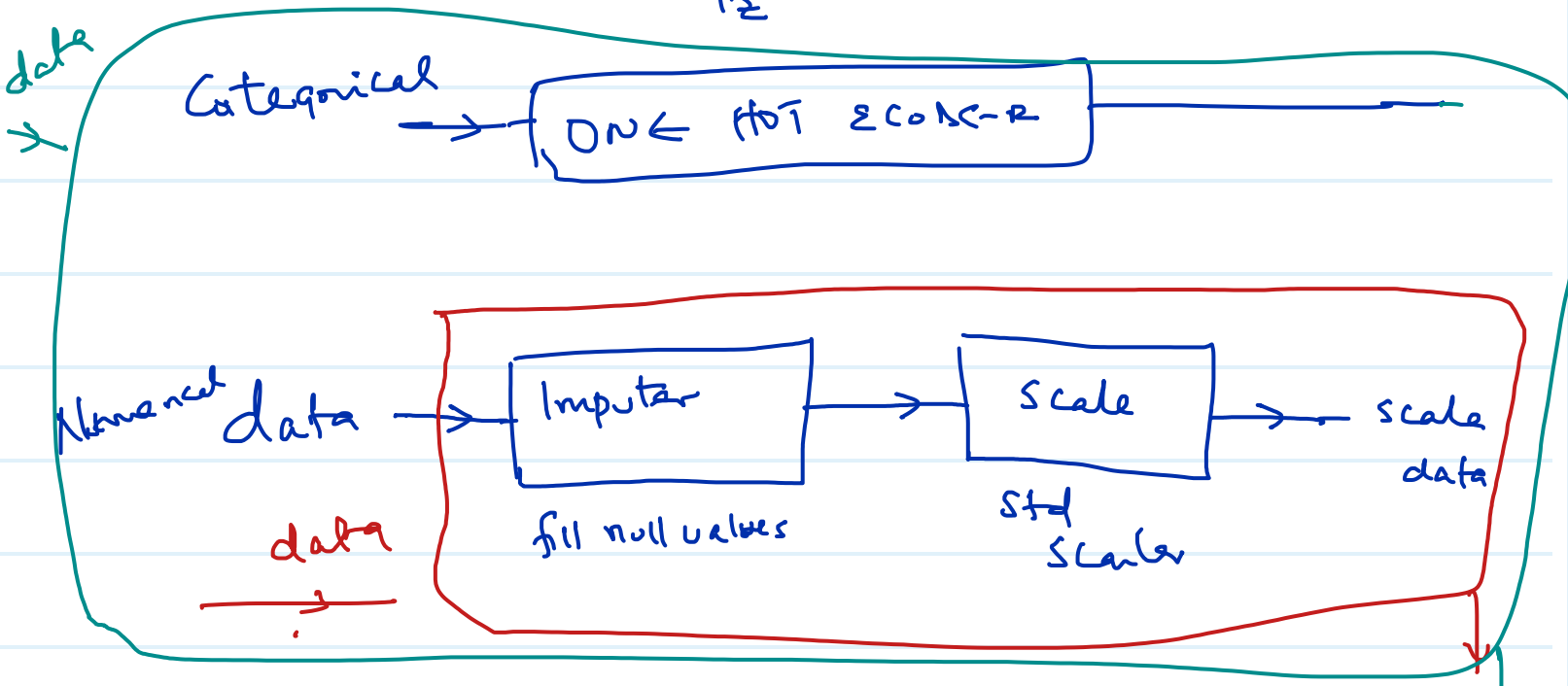
gradient = slope = $\{a_4, a_3, a_2, a_1\}$

Intercept = $\{a_0\}$

$$\text{loss function} = \frac{1}{N}\sum_{i=1}^{N}(y-\hat{y})^2 = MSE$$ (Error squared mean)

$$z = \frac{x-\mu}{\sigma}$$ Standard Scalar

$$T_z : x \longrightarrow z$$



way of Encoding Categorical values with multiple levels

<1H OCEAN	9136
INLAND	6551
NEAR OCEAN	2658
NEAR BAY	2290

1	0	0	0
0	1	0	0
0	0	1	0
0	0	0	1

YES - <1H OCEAN

NO	YES
1	1
0	1

BAY VS OCEAN — 1 / 0

BAY VS (INLAND) — 1 / 0