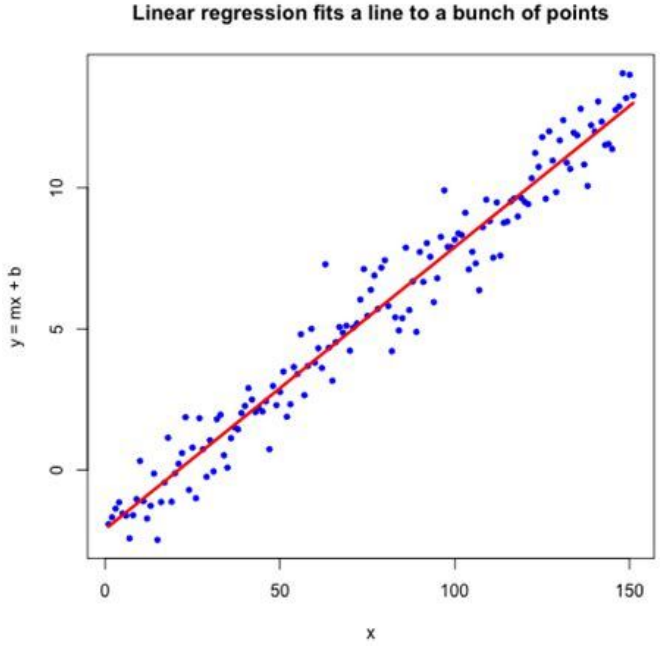
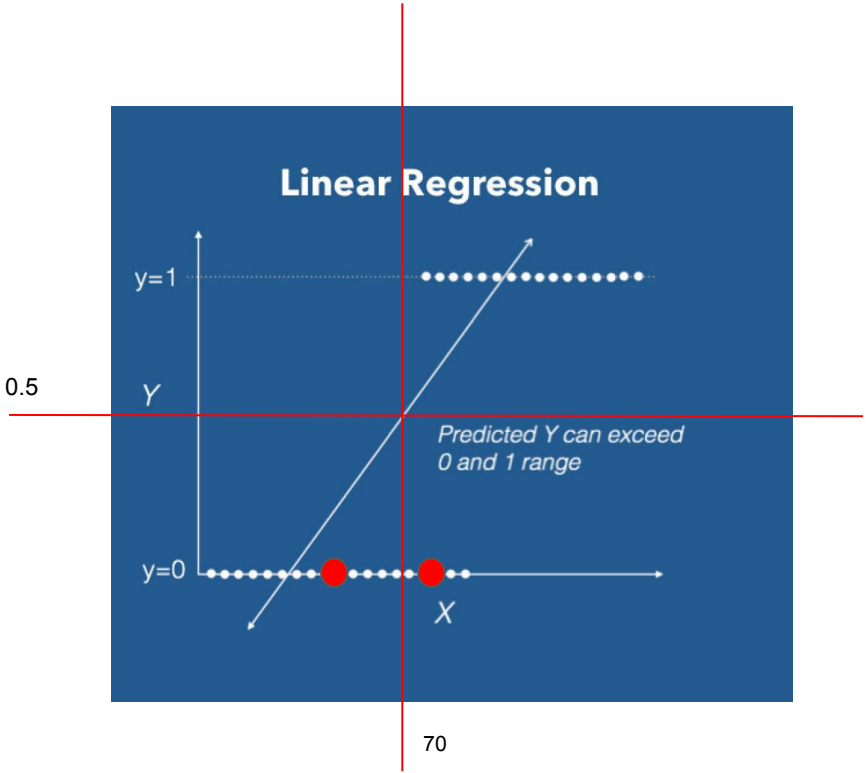
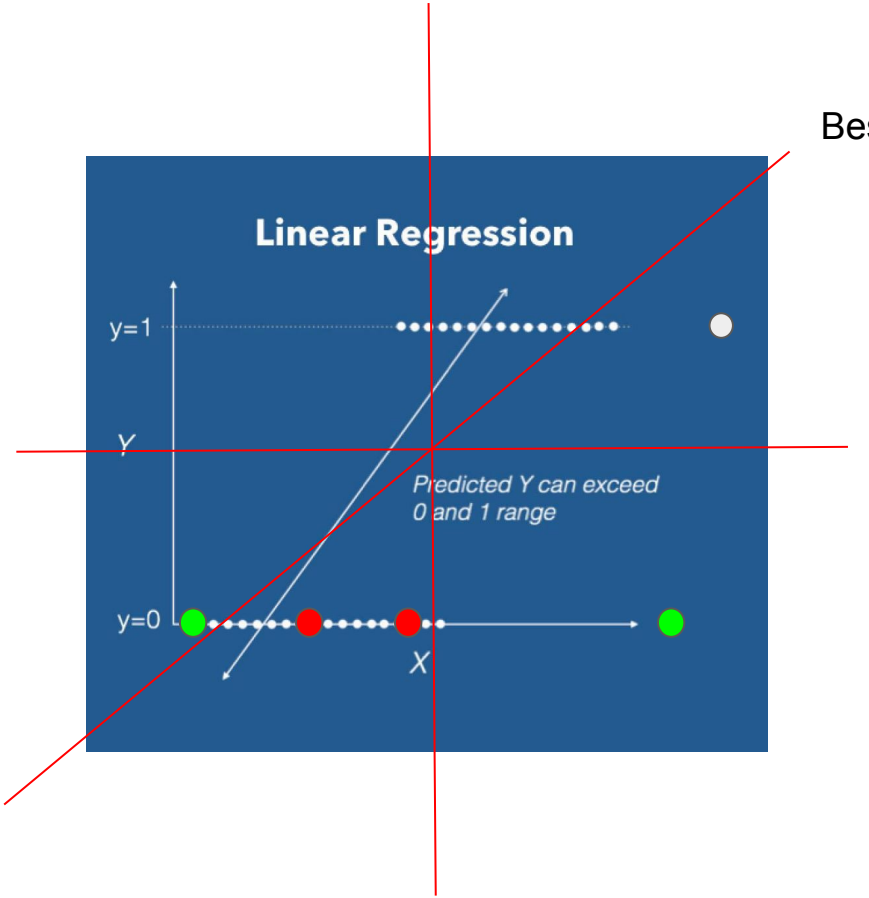
MACHINE LEARNING

DAY 3

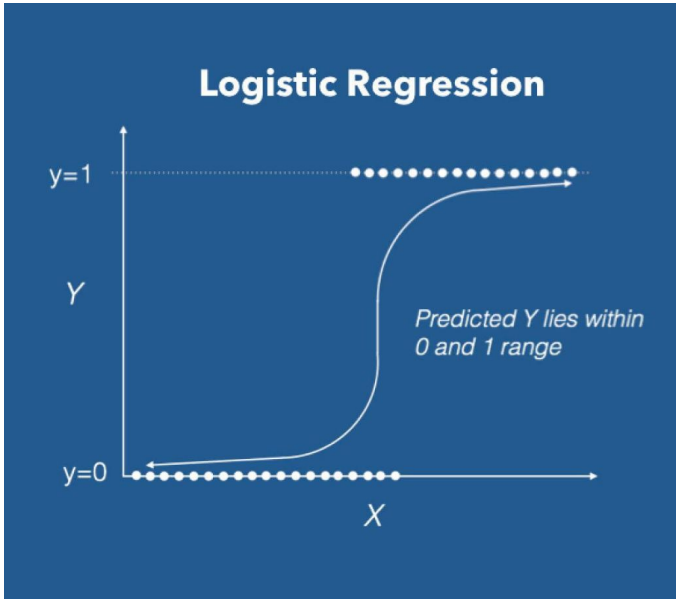

Linear regression fits a line to a bunch of points
y = mx + b
0
5
10
0
50
100
150
x


Linear Regression
y=1
Y
Predicted Y can exceed
0 and 1 range
y=0
X
0.5
70

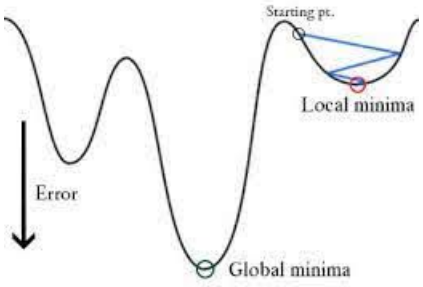


Best fit line

LOGISTIC REGRESSION

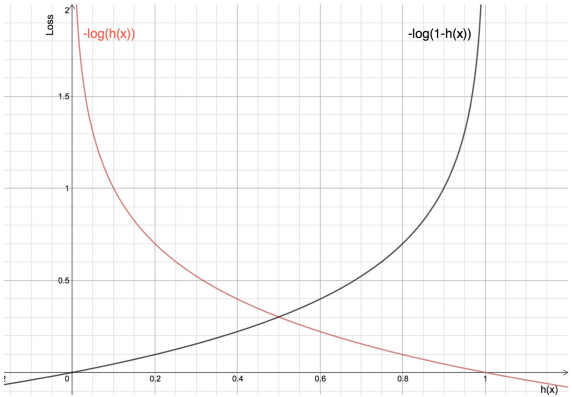


$$\text{RMSE} = \sqrt{\sum \frac{(y_{pred} - y_{ref})^2}{N}}$$

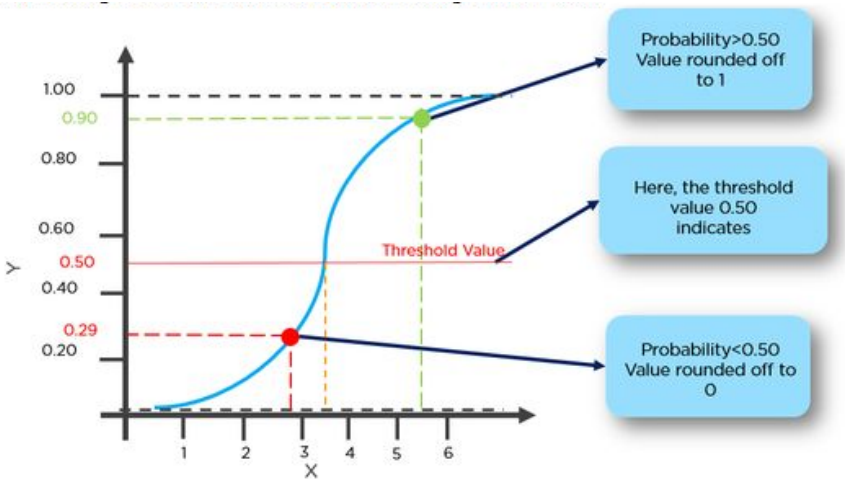


$$-\frac{1}{N}\sum_{i=1}^{N} y_i \cdot log(p(y_i)) + (1 - y_i) \cdot log(1 - p(y_i))$$

Binary Cross-Entropy / Log Loss



$$Y = \frac{1}{1 + e^{-X}}$$


Probability>0.50
Value rounded off to 1
Here, the threshold value 0.50 indicates
Probability<0.50
Value rounded off to 0
Threshold Value
1.00
0.90
0.80
0.60
0.50
0.40
0.29
0.20
Y
1
2
3
4
5
6
X

SIGMOID FUNCTION