〈 Classification 〉

ex) classification problem

Question	Answer "y"
Is this email spam?	No or Yes
Is the transaction fraudulent?	No or Yes
Is the tumor malignant?	No or Yes

⇓

prediction y can only be two values : Yes or No

⇒ "binary classification" = there are only two possible output

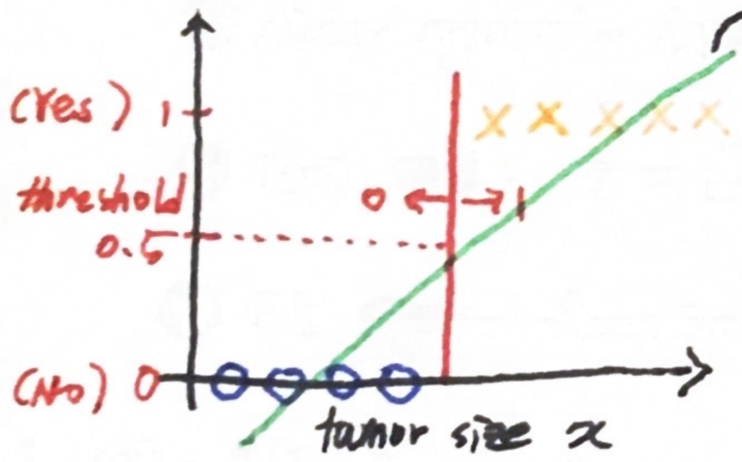
* class = category can be...

- Yes or No
- True or False
- 1 or 0

↑ positive class ↑ negative class

〈 Classification Algorithm 〉

if using linear regression model for classification problem...



⇓

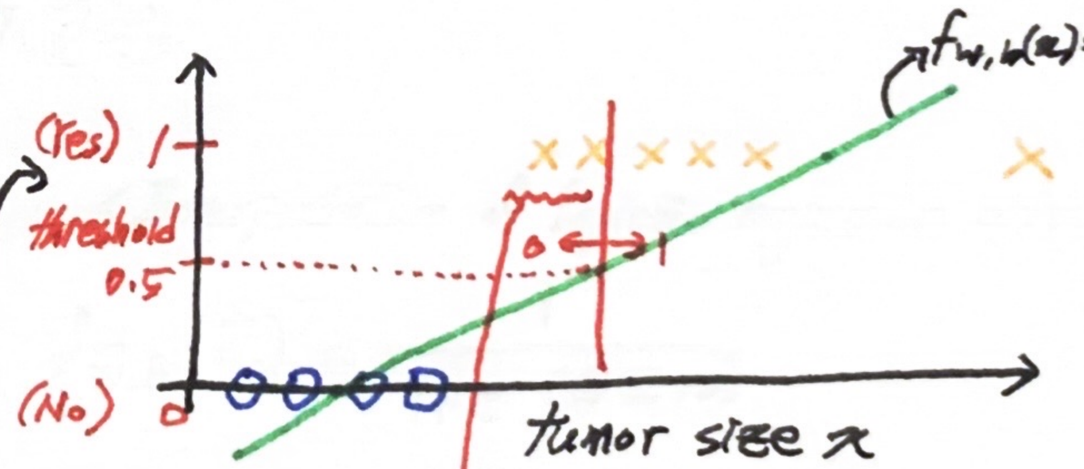
if $f_{w,b}(x) < 0.5 \Rightarrow \hat{y} = 0$

if $f_{w,b}(x) \geq 0.5 \Rightarrow \hat{y} = 1$

⇓

pretty good model with linear regresson

however... if train set is like this...



worse : misclassified

∴ New algorithm is necessary for classification problem

⇒ "Logistic Regression"