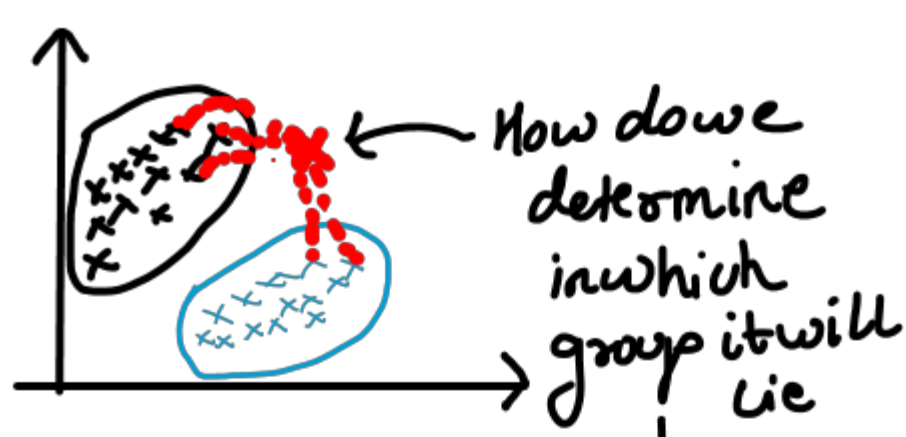


# K-nearest neighbour algorithm

→ Super easy way to classify data

## 1) Classification



∴ we use KNN  
↑ It will take  
n- points which  
are nearest to  
the x point

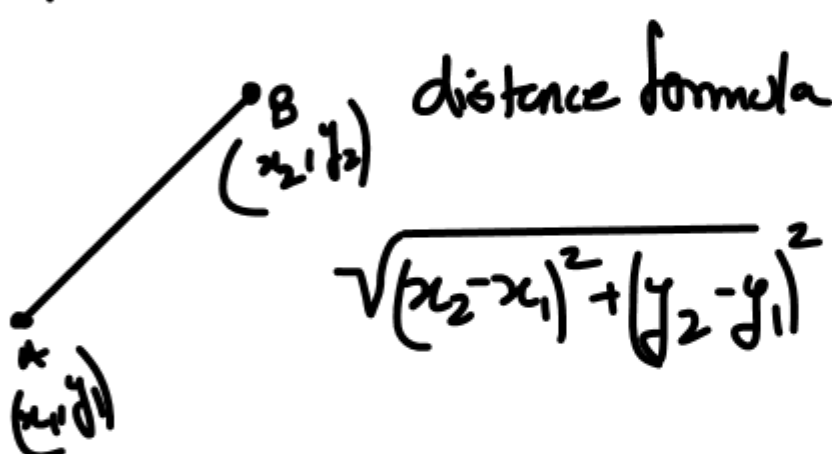
Max no. points are:

3- black  
2- red

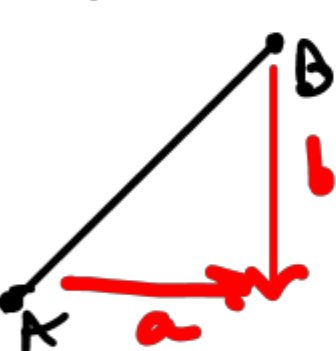
∴ x will belong to black class/group

To find the nearest points KNN uses:

## 1) Euclidean distance

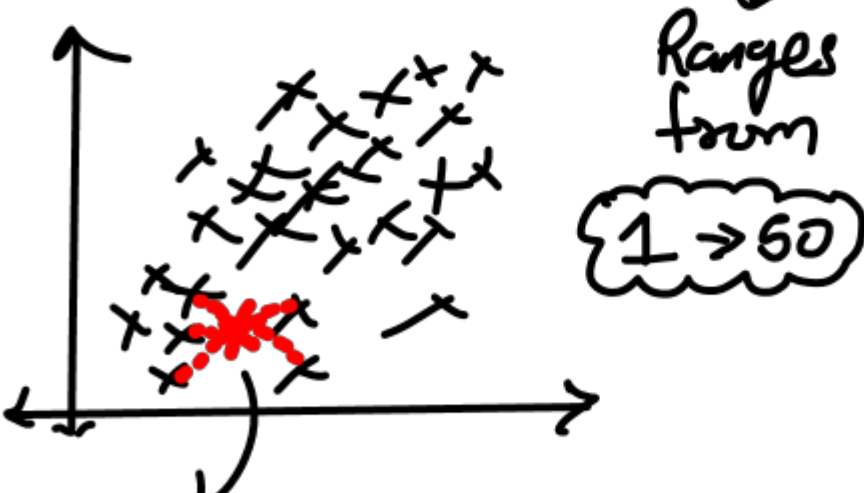


## Manhattan distance



## 2) Regression

K=5 ← Hyperparameter



Will try to calculate the avg of n-points

where n- is the Hyperparameter

K=n

$1 \leq n \leq 60$

- Error rate ↓ ↓ ↓  
↳ Then only we select it

## Disadvantages of KNN

→ Works bad with **Outliers**

→ Works bad when it has **Imbalanced data**