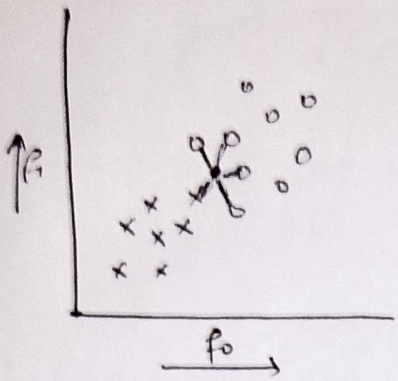
# KNN

→ K-Nearest Neighbours work both as Classifier and Regressor

→ Let there be 2 features:- $f_0$ & $f_1$

(x - 0)




x → Class-1

0 → Class-2

• → To be predicted / classified.

for K=5, those distances are considered (5 nearest points)

Then,

Classify:

→ Classified to the class with max number of data only points.

Regression:

→ Take average of individual abscissa & ordinate.

→ Or take weighted average.

$$\hat{c} = \frac{\sum_{j=1}^{K} c_j \cdot \frac{1}{dist_j}}{\sum_{j=1}^{K} \frac{1}{dist_j}}$$

→ Feature Scaling is very important as the difference in scales may sometimes lead to ignoring / giving less importance to important features.

Pros:

(i) Simple.

(ii) Less computationally expensive

Cons:

(i) Cannot predict outliers

(ii) Does not work well incase of outliers.