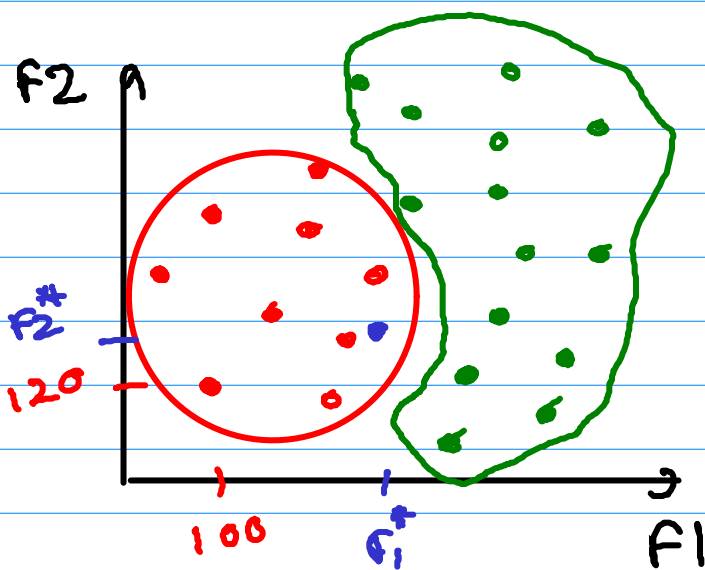


Supervised ML



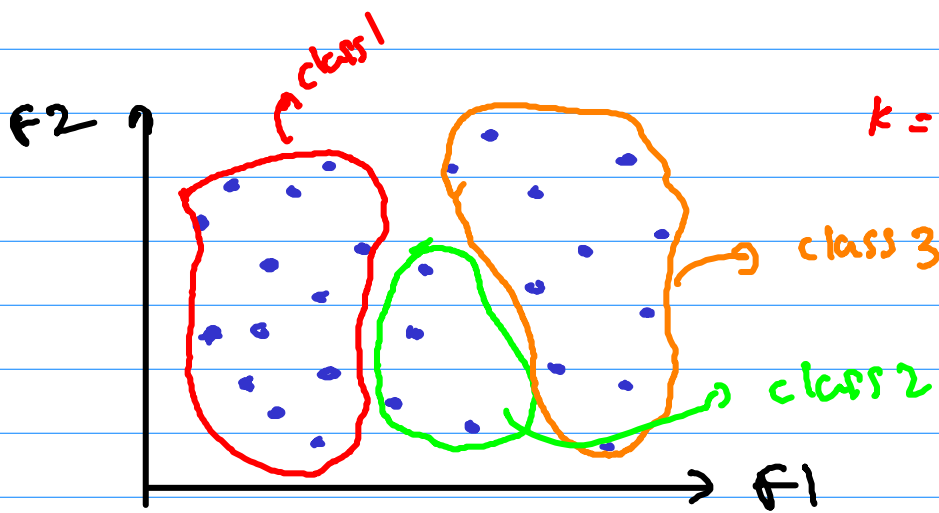
● - Apple
● - orange

$F1, F2$ - weight & texture

unsupervised ml

* features are known

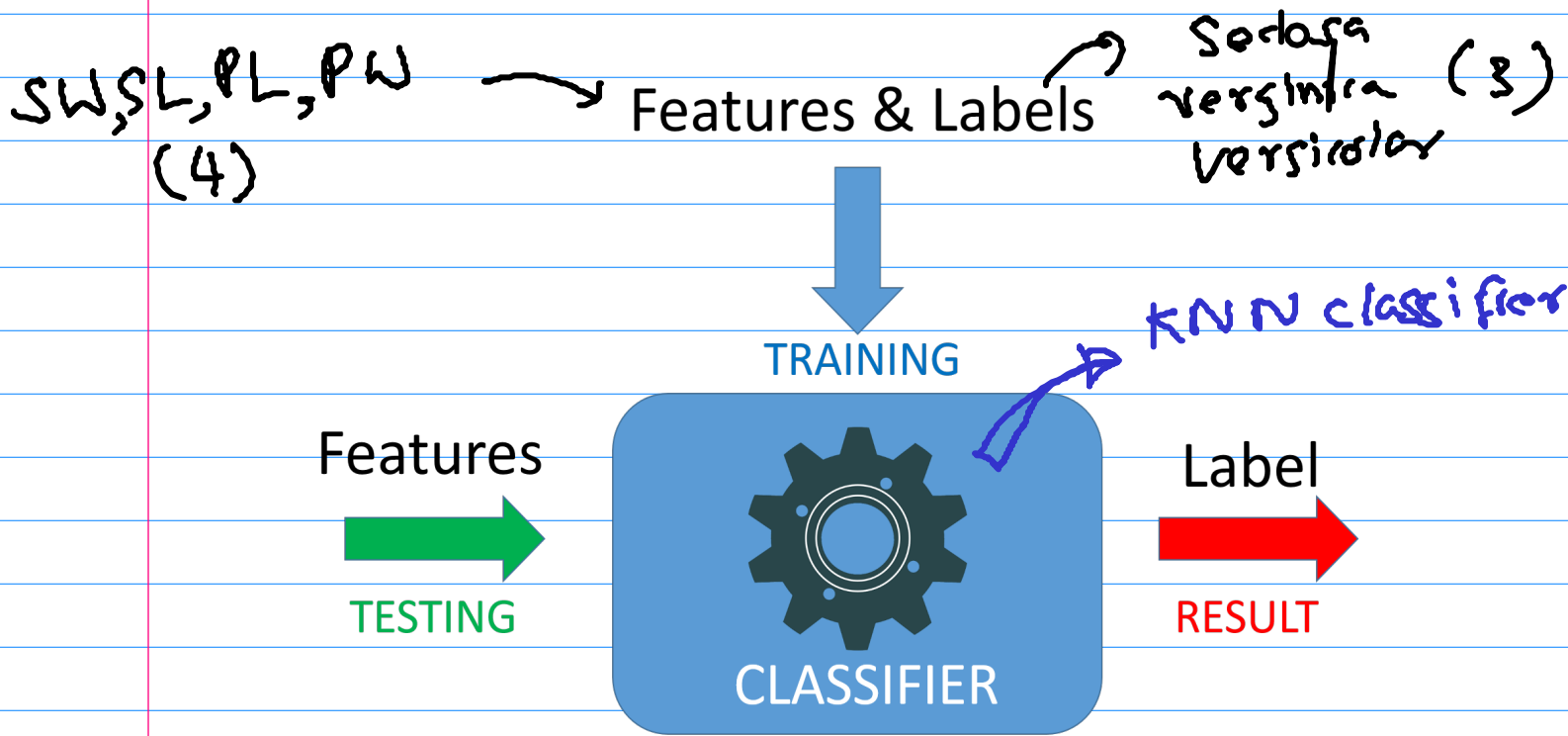
* not labeled



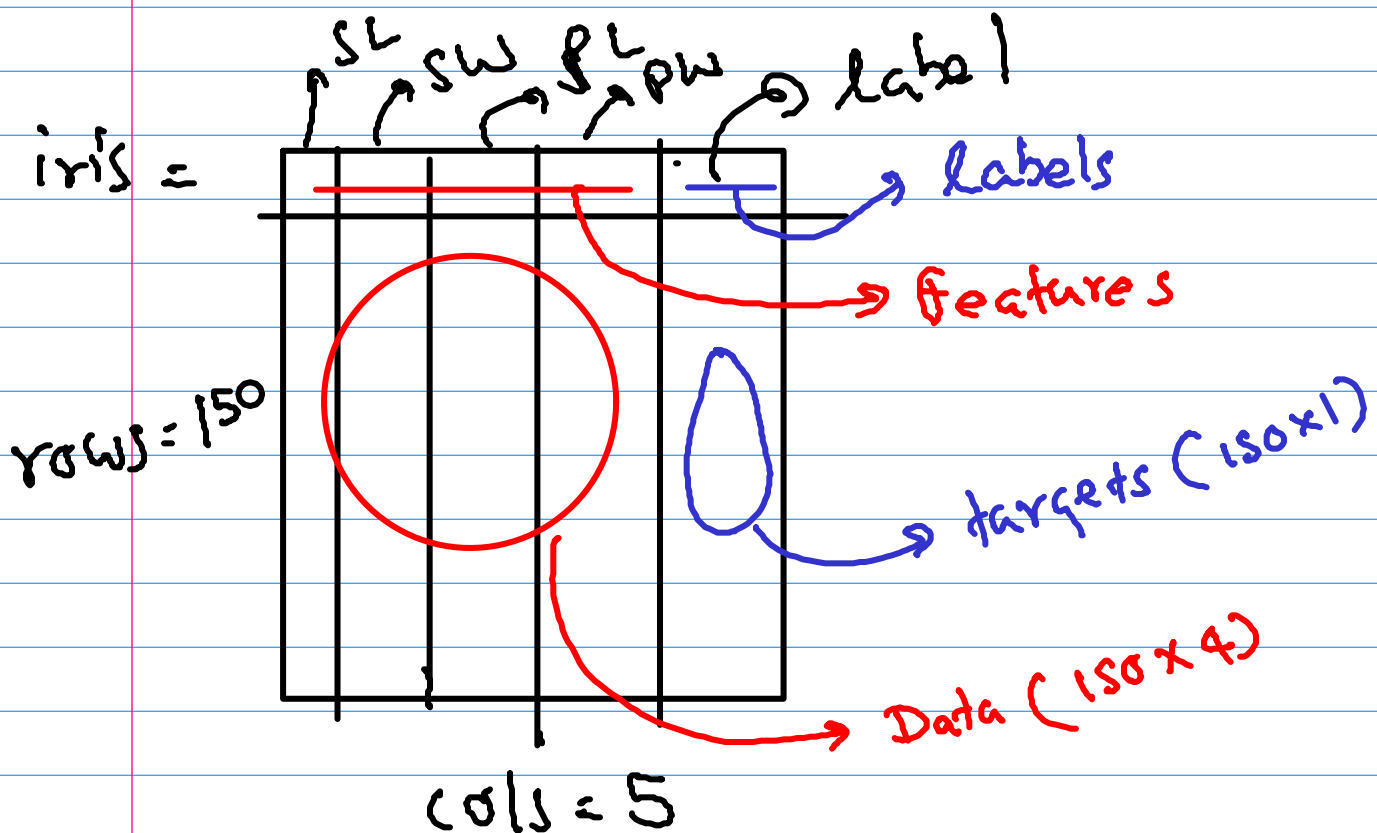
$k = 3$

- * kmeans
- * meanshift

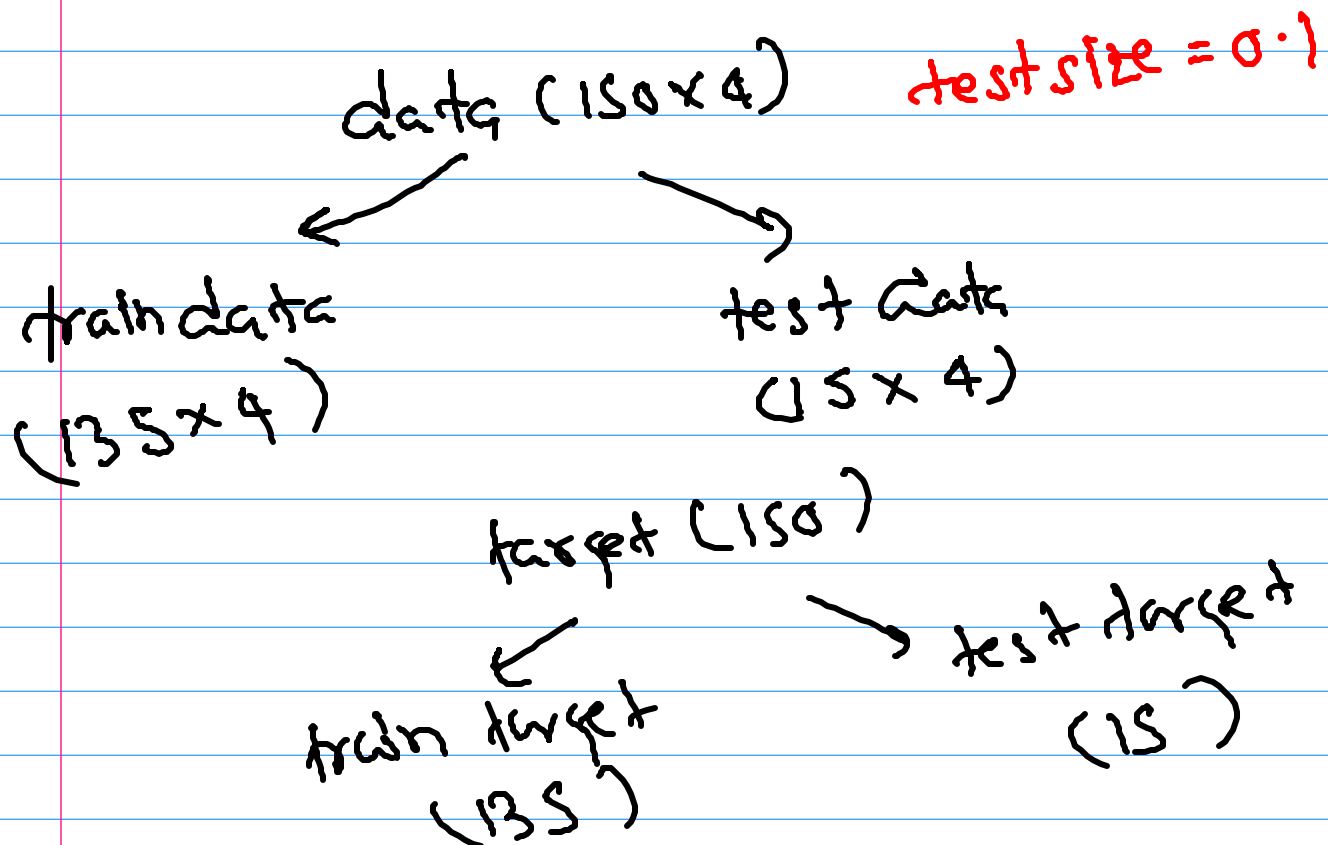
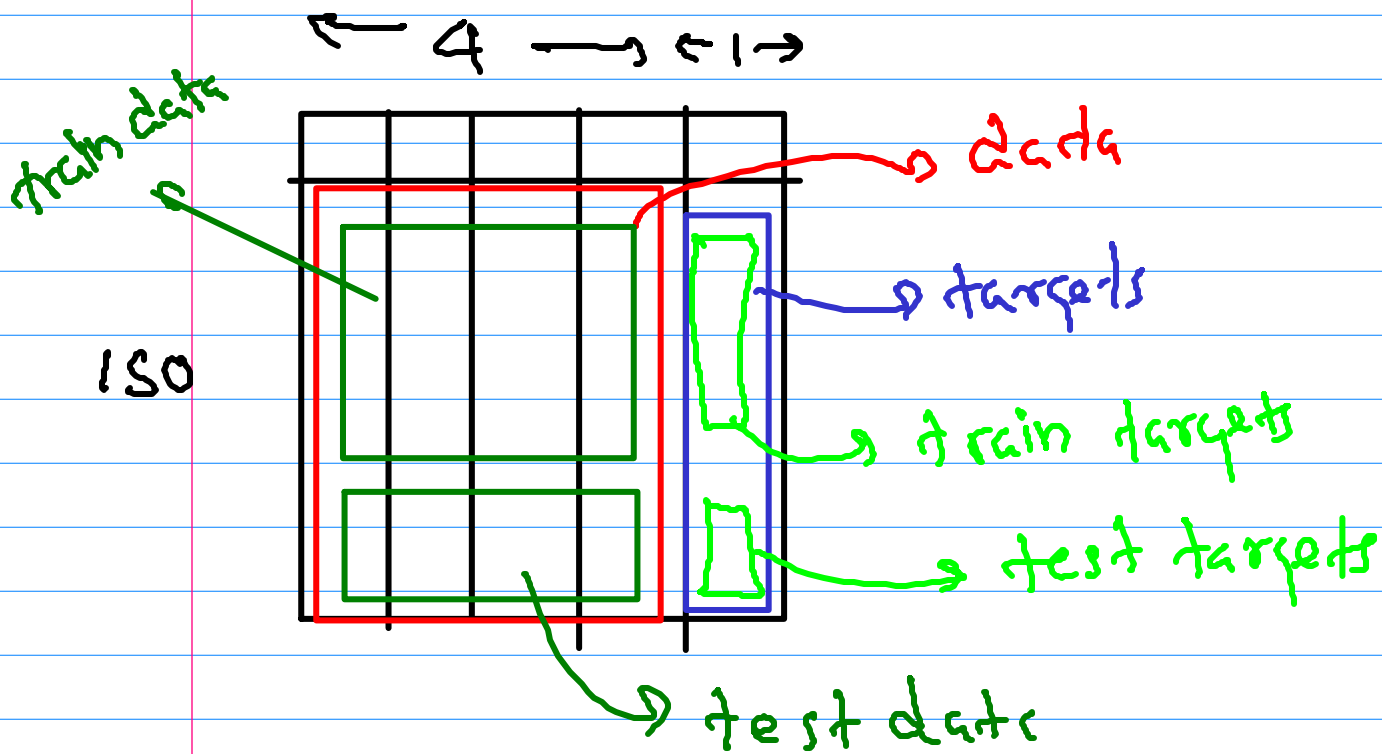
Applying KNN to iris Flower Dataset



KNN - Supervised / classification type



Train test split



train data

train target

Features & Labels

①

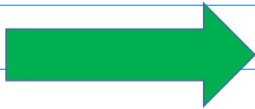
TRAINING

koron

results

test data

Features

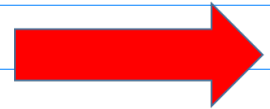


TESTING

②

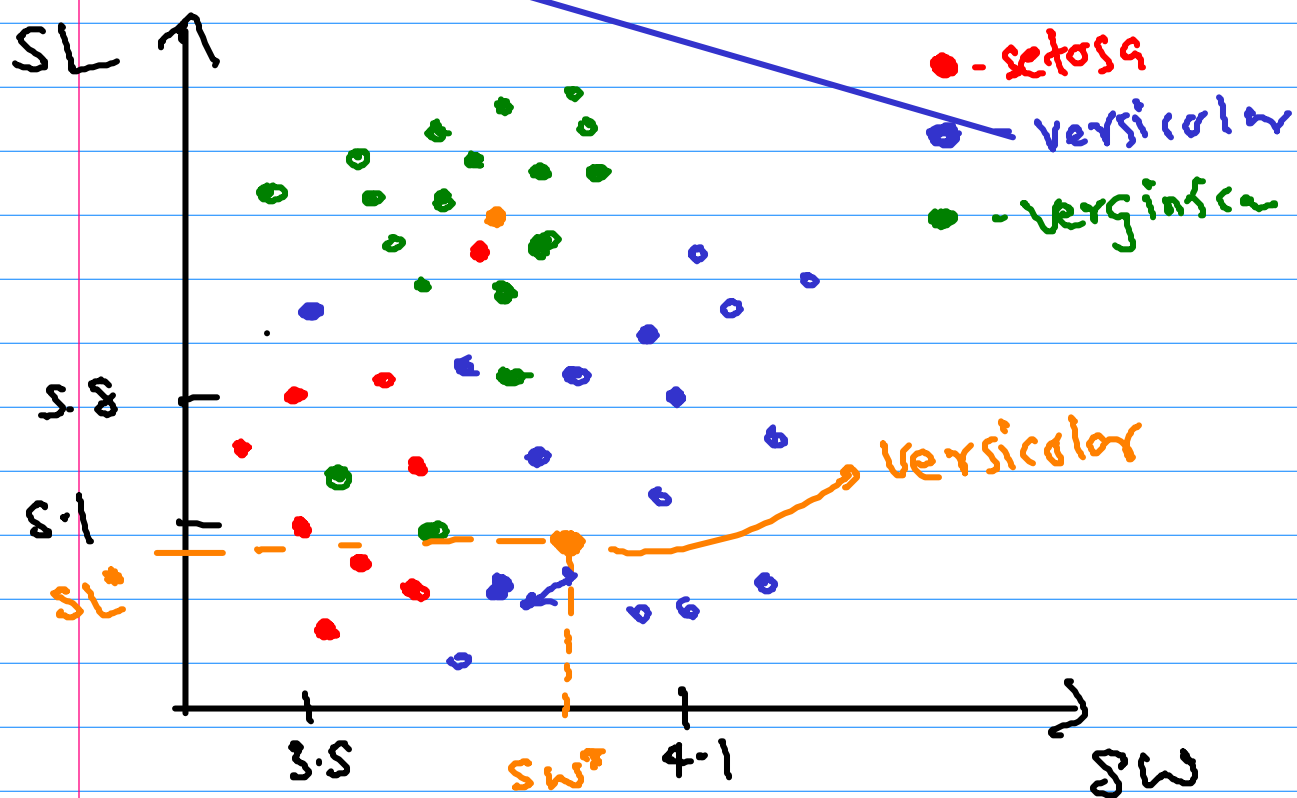


Label

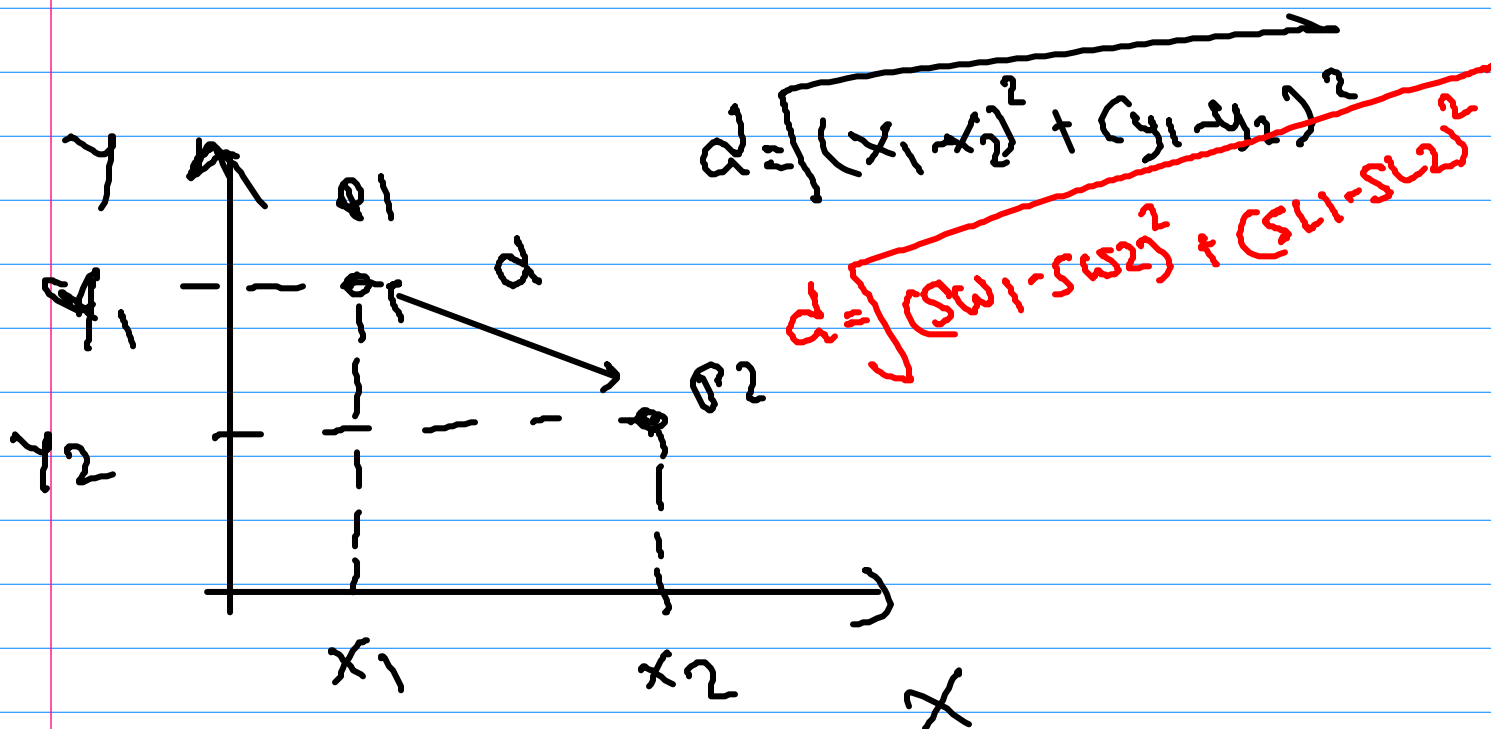


RESULT

Actual results → test target



$(SW^*, SL^*) \rightarrow$ test data



Euclidean distance

$$d = \sqrt{(S_{W1} - S_{W2})^2 + (S_{L1} - S_{L2})^2 + (P_{W1} - P_{W2})^2 + (P_{L1} - P_{L2})^2}$$

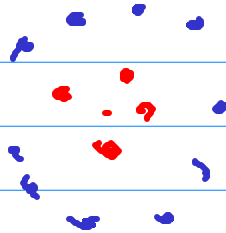
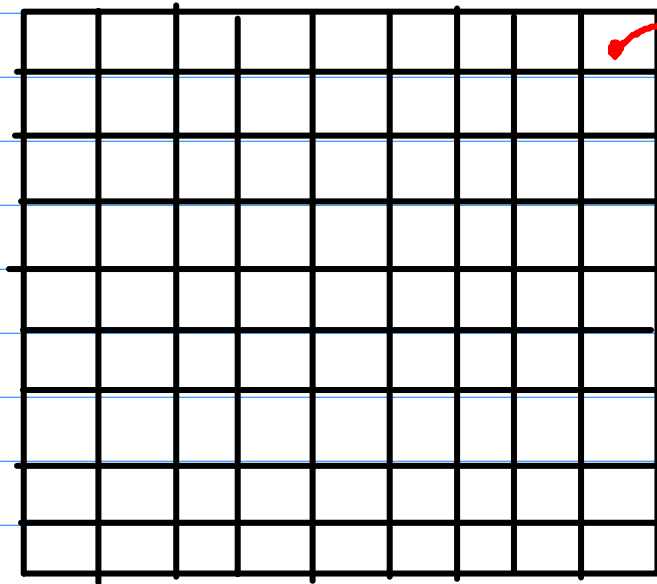


Image Representation

Resolution = $m \times n$

n - cols

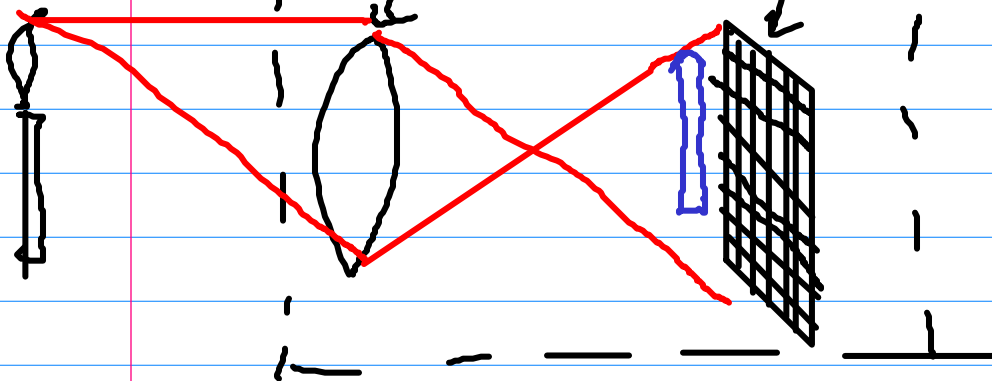


pixel

Camera

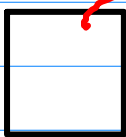
lense

camera sensor



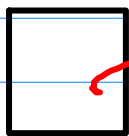
camera

Pixel



$R, G, B \rightarrow$ color image
8bit 8bit 8bit = 24 bits
numbers

Pixel



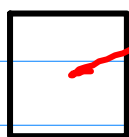
8 bit number [array level]
* array scale
image

8 bit number (0-255)

0 - black

255 - white

Pixel



1 bit number (B/W images)
0 - black
1 - white
Binary Images

Pip install opencv-python