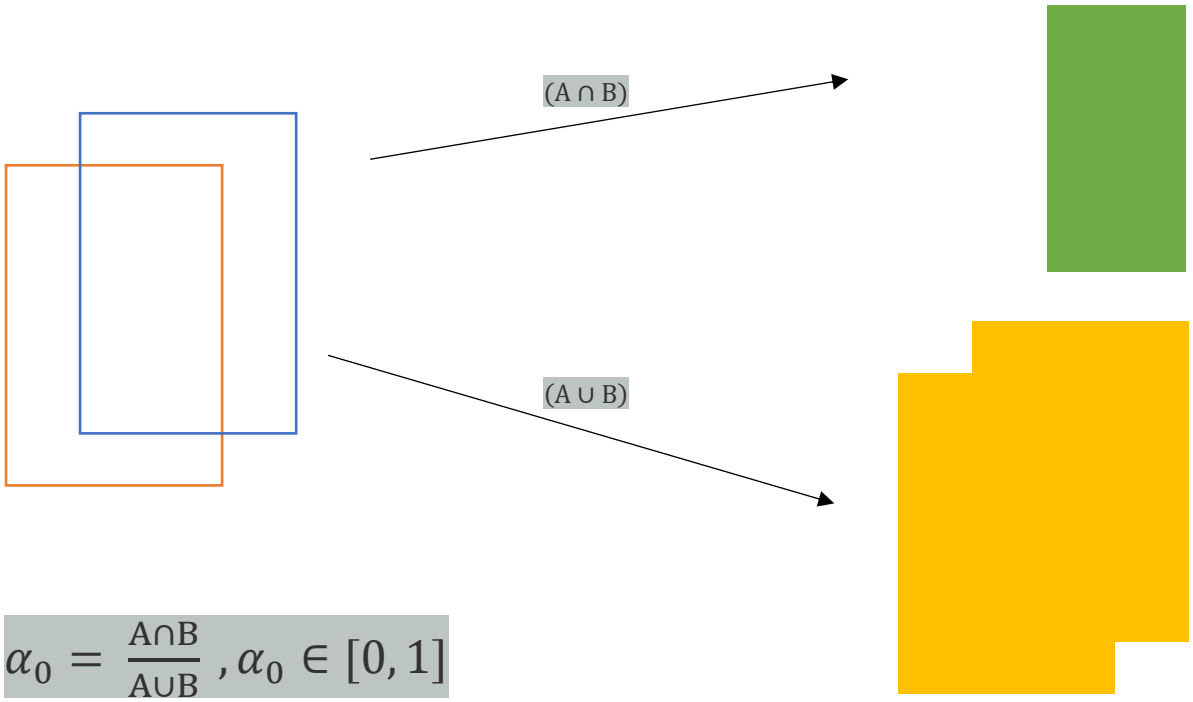
Task 1

a)

Intersection over union is a way to decide if a predicted bounding box with an associated confidence is a correct detection.



$$\alpha_0 = \frac{A \cap B}{A \cup B}, \alpha_0 \in [0,1]$$

b)

$$precision = \frac{correct\ predictions}{total\ predictions} = \frac{true\ positives}{true\ positives + false\ positives}$$

$$recall = \frac{correct\ predictions}{total\ wanted\ entries} = \frac{true\ positives}{true\ positive + false\ negatives}$$

A true positive is a correct prediction. A false positive is a false prediction.

c)

$$average\ precision\ class\ 1\ =\ \frac{1+1+1+0.5+0.2}{5}\ =\ 0.74$$

$$average\ precision\ class\ 2\ =\ \frac{1+0.8+0.6+0.5+0.2}{5}\ =\ 0.62$$

$$mean\ average\ precision\ =\ \frac{0.74+0.62}{2}\ =\ 0.68$$

Task 2

f)