

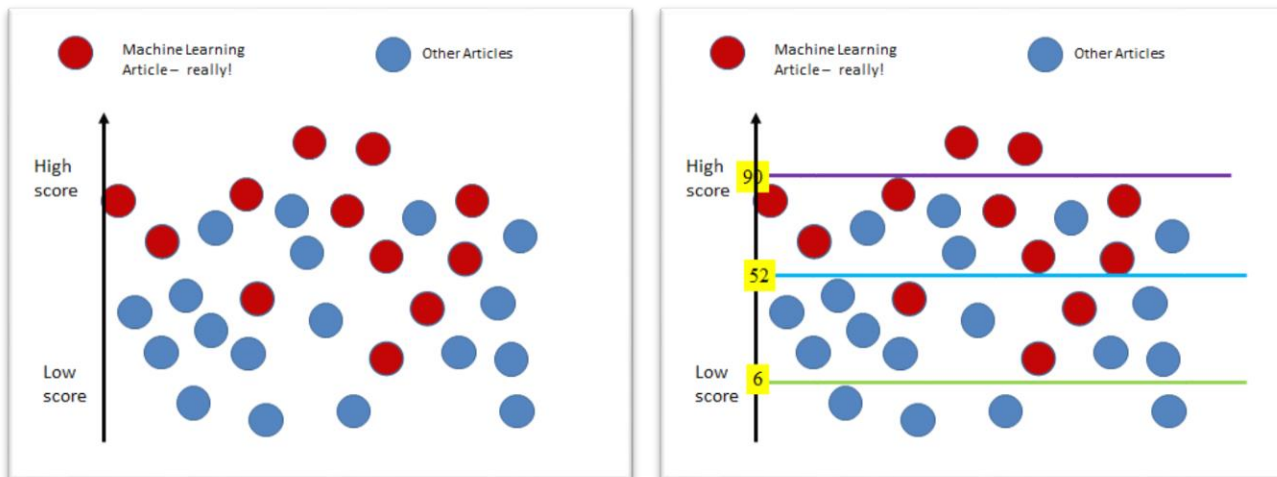
# Exercise: Confusion Matrix, Recall and Precision

A library of articles contains 30 articles;

12 red - about machine learning; 18 blue - about other topics

A classifier gives each article a score from 1 to 100. High score = lots of words relevant to machine learning.

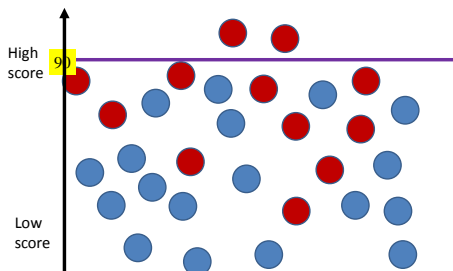
What score should an article get so that the classifier returns it in response to a search?



**Recall** = True Positives / (True Positives + False Negatives)

**Precision** = True Positives / (True Positives + False Positives)

Compare 3 classifier settings – purple line (score > 90), blue line (score > 52) and green line (score > 6)

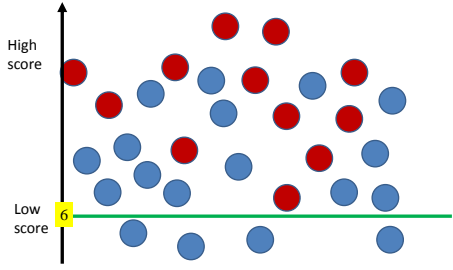
1.		<p>Suppose the classifier returns all the articles with a score more than 90 (above the purple line)</p> <ul style="list-style-type: none"> <li>Is that 100% Recall or 100% Precision or both or something else?</li> </ul>
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- If you're not sure – fill in the Confusion Matrix and then use the definitions above for Precision and Recall

	Returned	Not returned
Machine learning	TP	FN
Other topic	FP	TN

## Exercise: Confusion Matrix, Recall and Precision

2.



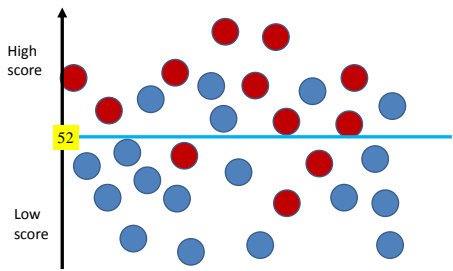
Suppose the classifier returns all the articles with a score more than 6 (above the green line)

- Is that 100% Recall or 100% Precision or both or something else?

- If you're not sure – fill in the Confusion Matrix and use the definitions above

	Returned	Not returned
Machine learning	TP	FN
Other topic	FP	TN

3.



Suppose the classifier returns all the articles with a score more than 52 (above the blue line)

- Fill in the Confusion Matrix below.
- What is the Recall?
- What is the Precision?
- Is returning articles with scores above 52 a “good” setting?

	Returned	Not returned
Machine learning	TP	FN
Other topic	FP	TN