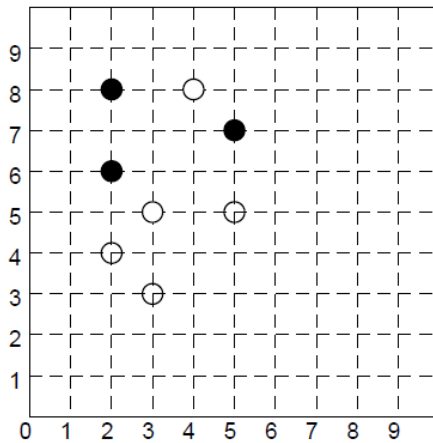


Lab 8

Note: Show all your work in detail. Provide screenshots or code if you use R or other software.

1. The KNN algorithm is being run on a small dataset ($k=3$). Here, clear circles belong to class 'YES' and filled circles belong to class 'NO'. Determine the class for (1,5). Show all your work and use Euclidean distance when calculating distances.



'YES' objects: (2,4) (3,3) (3,5) (4,8) (5,5)

'NO' objects: (2,6) (2,8) (5,7)

2. Consider the following confusion matrix. Compute sensitivity, specificity, precision, accuracy, recall and F-measure.

actual class	predicted class		
		C1	C2
	C1	425	58
	C2	63	241

Note: C1 is positive and C2 is negative.

3. The following table shows a test result of a classifier on a dataset. For each row, compute TP , FP , TN , FN , TPR , and FPR , then plot the ROC curve for the dataset.

Tuple_id	Actual Class	Probability
1	P	0.79
2	N	0.95
3	N	0.82
4	P	0.86
5	P	0.73
6	P	0.69
7	N	0.87
8	P	0.71
9	N	0.75
10	P	0.90