Maimoona Khilji
BS-DS
Semester 6

Lab Submission 13

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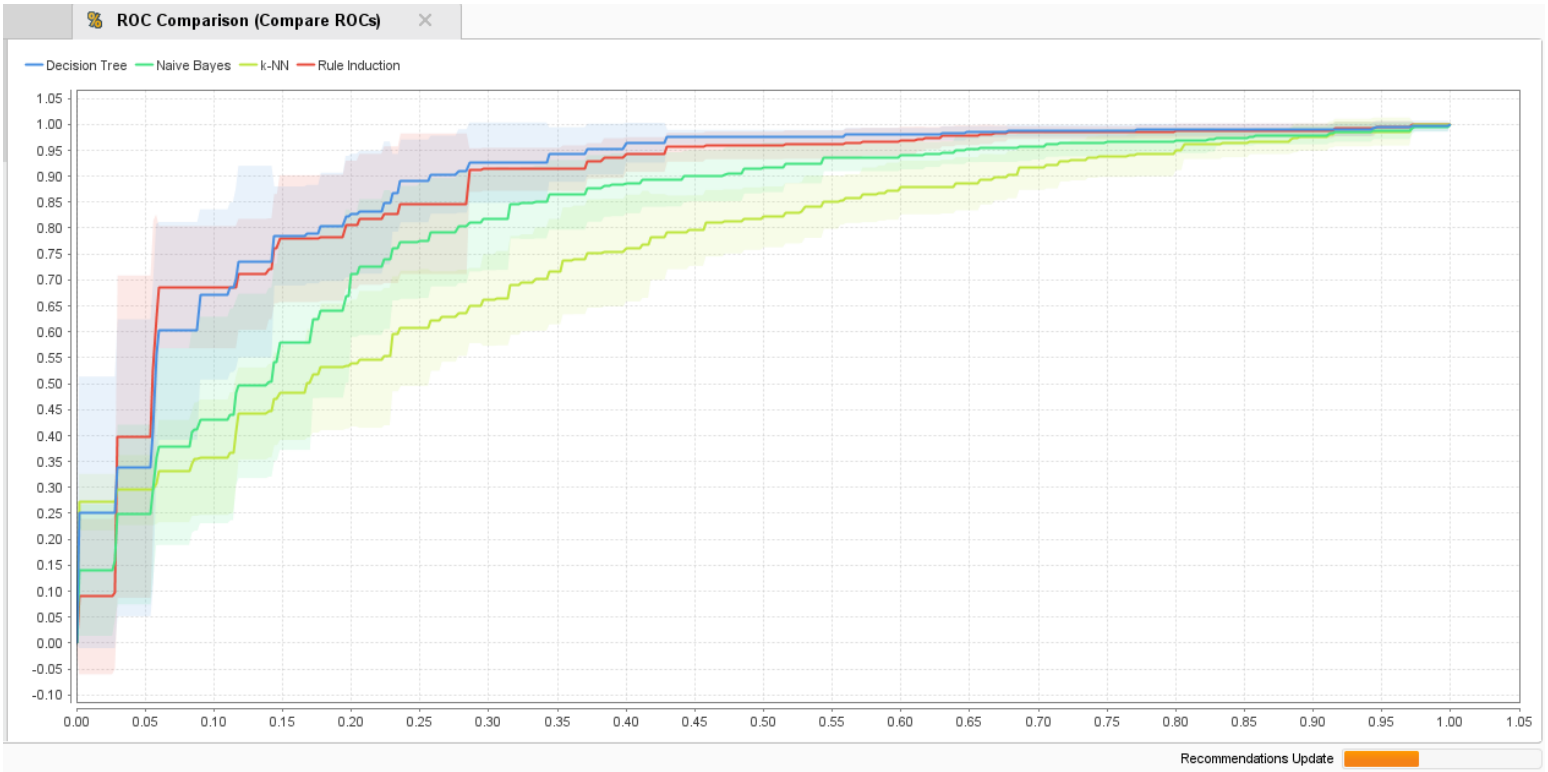
1. ADD K-NN to sub-process. Compare which one is best.

ROC Curve

(Decision Tree, Naïve Bayes, KNN, Rule Induction)

In this given ROC curve, the performance of **decision tree** (blue line) is better than others.



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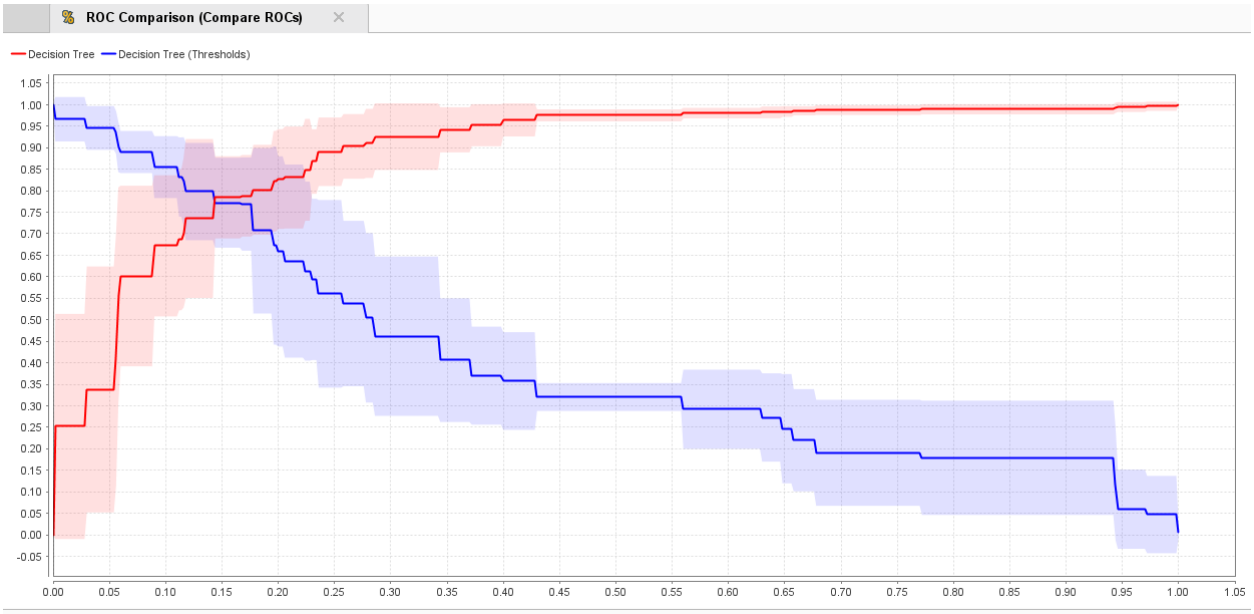
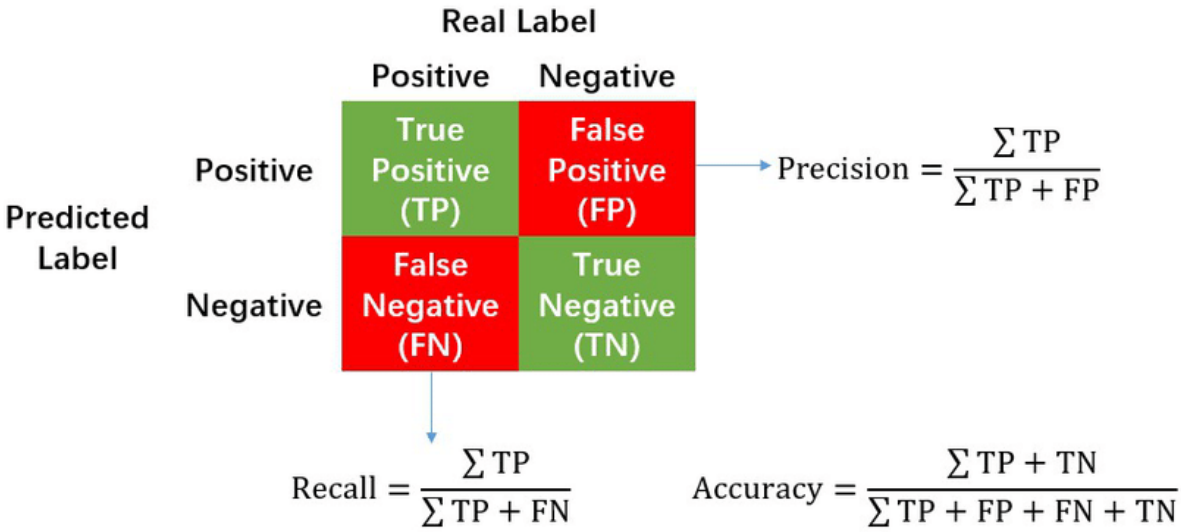
2. Calculate precision and recall for the best model also discuss what precision is and what recall is.

ROC curve of Decision Tree





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accuracy: 80.35% +/- 4.69% (micro average: 80.35%)

	true Yes	true No	class precision
pred. Yes	253	84	75.07%
pred. No	96	483	83.42%
class recall	72.49%	85.19%	

Precision

Out of all the positive predicted, what percentage is truly positive. The precision value lies between 0 and 1.

$$Precision = \frac{TP}{TP + FP}$$

Precision: sum of True Positive /sum of (True Positive and False Positive)

Precision: 253 / (253+84) = **0.75**

Recall

Out of the total positive, what percentage are predicted positive. It is the same as TPR (true positive rate).

$$Recall = \frac{TP}{TP + FN}$$

Recall: sum of True Positive /sum of (True Positive and False Negative)

Recall: 253 / (253+96) = **0.72**