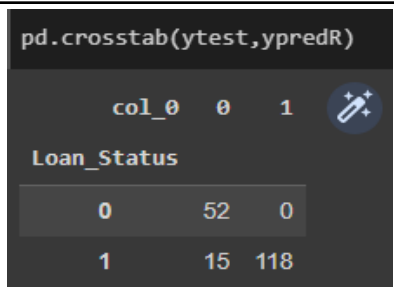


Project Development Phase Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID27218
Project Name	Smart Lender - Applicant Credibility Prediction for Loan Approval
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot																																																																																				
1.	Metrics	<p>Classification Model: Confusion Matrix :</p> <table><tr><td>Col_0</td><td>Loan_Status</td><td>1</td><td>0</td></tr><tr><td>0</td><td></td><td>52</td><td>0</td></tr><tr><td>1</td><td></td><td>15</td><td>118</td></tr></table> <p>Accuracy Score: <u>Random Forest Model Testing Accuracy:</u> 0.918918918918919 <u>Random Forest Model Training Accuracy:</u> 0.9300699300699301</p> <p>Classification Report:</p> <table><tr><td></td><td>precision</td><td>recall</td><td>f1-score</td><td>support</td></tr><tr><td>0</td><td>0.78</td><td>1.00</td><td>0.87</td><td>52</td></tr><tr><td>1</td><td>1.00</td><td>0.89</td><td>0.94</td><td>133</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.92</td><td>185</td></tr><tr><td>macro avg</td><td>0.89</td><td>0.94</td><td>0.91</td><td>185</td></tr><tr><td>weighted avg</td><td>0.94</td><td>0.92</td><td>0.92</td><td>185</td></tr></table>	Col_0	Loan_Status	1	0	0		52	0	1		15	118		precision	recall	f1-score	support	0	0.78	1.00	0.87	52	1	1.00	0.89	0.94	133	accuracy			0.92	185	macro avg	0.89	0.94	0.91	185	weighted avg	0.94	0.92	0.92	185	 <pre>pd.crosstab(ytest,ypredR)</pre> <table><tr><td>col_0</td><td>0</td><td>1</td></tr><tr><td>Loan_Status</td><td></td><td></td></tr><tr><td>0</td><td>52</td><td>0</td></tr><tr><td>1</td><td>15</td><td>118</td></tr></table> <pre>print("Random Forest Model Testing Accuracy") print(accuracy_score(ytest,ypredR)) print("Random Forest Model Training Accuracy") print(accuracy_score(ytrain,ypred2R))</pre> <p>Random Forest Model Testing Accuracy 0.918918918918919 Random Forest Model Training Accuracy 0.9300699300699301</p> <pre>print(classification_report(ytest,ypredR))</pre> <table><tr><td></td><td>precision</td><td>recall</td><td>f1-score</td><td>support</td></tr><tr><td>0</td><td>0.78</td><td>1.00</td><td>0.87</td><td>52</td></tr><tr><td>1</td><td>1.00</td><td>0.89</td><td>0.94</td><td>133</td></tr><tr><td>accuracy</td><td></td><td></td><td>0.92</td><td>185</td></tr><tr><td>macro avg</td><td>0.89</td><td>0.94</td><td>0.91</td><td>185</td></tr><tr><td>weighted avg</td><td>0.94</td><td>0.92</td><td>0.92</td><td>185</td></tr></table>	col_0	0	1	Loan_Status			0	52	0	1	15	118		precision	recall	f1-score	support	0	0.78	1.00	0.87	52	1	1.00	0.89	0.94	133	accuracy			0.92	185	macro avg	0.89	0.94	0.91	185	weighted avg	0.94	0.92	0.92	185
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2. Tune the Model

Hyperparameter Tuning:

No tuning is necessary as we have more than 90% accuracy.

Parameters used:

n_estimators=100

Validation Method:

In-Simple Validation

```
Rmodel=RandomForestClassifier(n_estimators=100)

Rmodel.fit(x_res,y_res)

RandomForestClassifier()

ypredR=Rmodel.predict(xtest)

ypred2R=Rmodel.predict(xtrain)

print("Random Forest Model Testing Accuracy")
print(accuracy_score(ytest,ypredR))
print("Random Forest Model Training Accuracy")
print(accuracy_score(ytrain,ypred2R))

Random Forest Model Testing Accuracy
0.918918918918919
Random Forest Model Training Accuracy
0.9300699300699301
```

[illegible]