

Project Development Phase Model Performance Test

Date	14 November 2022
Team ID	PNT2022TMID52913
Project Name	Project - 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	Classification Model: Confusion Matrix - , Accuracy Score- & Classification Report -	Figure 1 and Figure 2
2.	Tune the Model	Hyperparameter Tuning - Validation Method -	Figure 3

Random Forest Model

```
In [52]: Rmodel=RandomForestClassifier(n_estimators=100)
```

```
In [53]: Rmodel.fit(x_res,y_res)
```

```
Out[53]: RandomForestClassifier()
```

In a Jupyter environment, please rerun this cell to show the HTML representation or trust the notebook.
On GitHub, the HTML representation is unable to render, please try loading this page with nbviewer.org.

```
In [54]: ypredR=Rmodel.predict(xtest)
```

Figure 1

```
In [63]: print("Random Forest Model Testing Accuracy")
print(accuracy_score(ytest,ypredR))
```

Random Forest Model Testing Accuracy
0.8972972972972973

```
In [64]: from sklearn.metrics import confusion_matrix
cf = confusion_matrix(ytest, ypredR)
import seaborn as sns
sns.heatmap(cf, annot=True)
```

Out[64]: <AxesSubplot:>

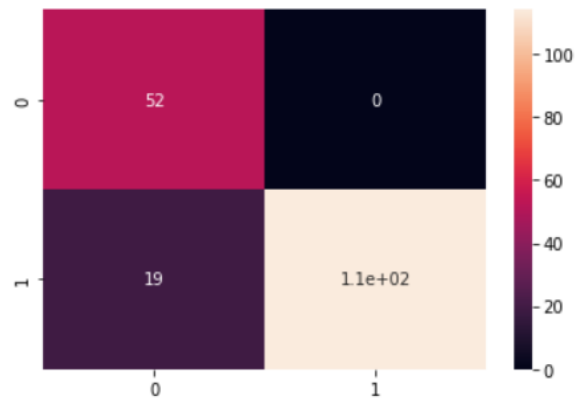


Figure 2

Evaluating Preformance and Saving the Model

Random Forest is selected

```
In [69]: print(classification_report(ytest,ypredR))
```

	precision	recall	f1-score	support
0	0.73	1.00	0.85	52
1	1.00	0.86	0.92	133
accuracy			0.90	185
macro avg	0.87	0.93	0.88	185
weighted avg	0.92	0.90	0.90	185

Figure 3