Project Development Phase
Model Performance Test

Date	10 November 2023
Team ID	PNT2022TMID591862
Project Name	Project - IDENTIFING AIRLINE PASSENGERS' SATISFACTION Using ML
Maximum Marks	10 Marks

Model Performance Testing:

S.No.	Parameter	Values	Screenshot
| 1. | Metrics | **Classification Model:** Confusion Matrix, Accuracy Score- & Classification Report | ```
cm=confusion_matrix(y_test,y_pred)
cm

array([[2836,  109],
       [ 173, 2078]])
```<br><br>Accuracy after tuning the model:<br>0.9443802925327175<br><br>```
Accuracy
Training accuracy= 1.0
Test accuracy= 0.9463048498845266
Test data confusion  matrix: [[2839  106]
 [ 173 2078]]
Test data classification report:         precision   recall f1-score   support

              0      0.94      0.96      0.95      2945
              1      0.95      0.92      0.94      2251

       accuracy                          0.95      5196
      macro avg      0.95      0.94      0.95      5196
   weighted avg      0.95      0.95      0.95      5196
```<br>• RandomForestClassifier<br>RandomForestClassifier() |
| 2. | Tune the Model | Hyperparameter Tuning - Validation Method - | ```
best_accuracy= 0.9482194417709335
best_parameters= {'criterion': 'gini', 'max_depth': 25, 'n_estimators': 300}
```<br><br>```
parameters={
    'n_estimators':[25,50,200,300],
    'criterion':['gini','entropy'],
    'max_depth':[14,20,25,30]
}
``` |