Model Development Phase Template

Date	15 March 2024
Team ID	738193
Project Title	Hospital Readmission Prediction Using Machine Learning
Maximum Marks	4 Marks

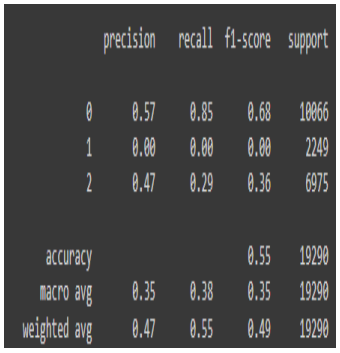
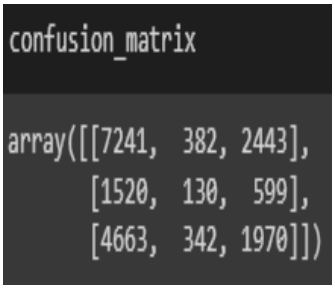
Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include classification reports, accuracy, and confusion matrices for multiple models, presented through respective screenshots.

Initial Model Training Code:

Paste the screenshot of the model training code

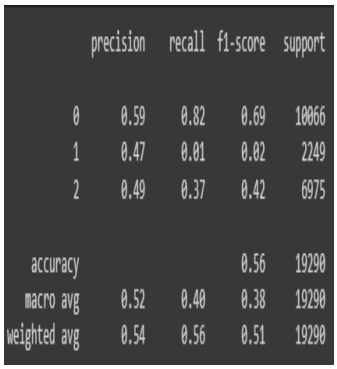
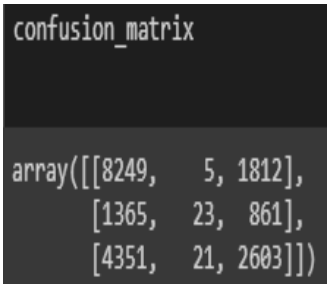
Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Model 1 LogisticRegression_Classifier		0.55	

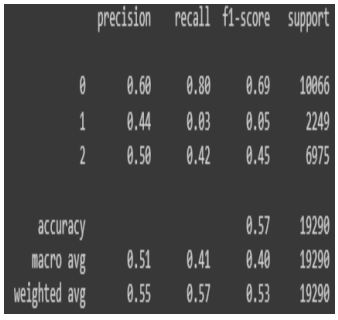
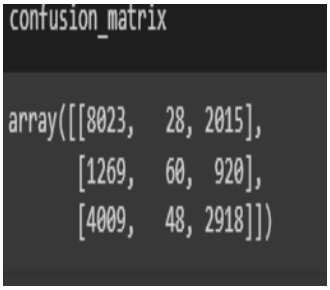
	precision	recall	f1-score	support
0	0.57	0.85	0.68	10066
1	0.00	0.00	0.00	2249
2	0.47	0.29	0.36	6975
accuracy			0.55	19290
macro avg	0.35	0.38	0.35	19290
weighted avg	0.47	0.55	0.49	19290

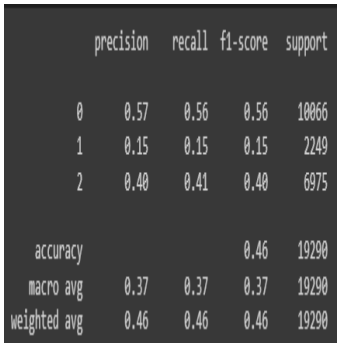
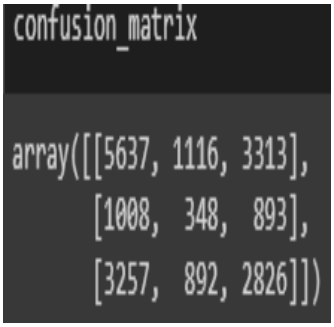
```
confusion_matrix

array([[7241,  382, 2443],
       [1520,  130,  599],
       [4663,  342, 1970]])
```

Model Validation and Evaluation Report:

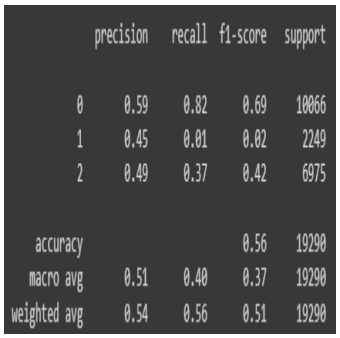
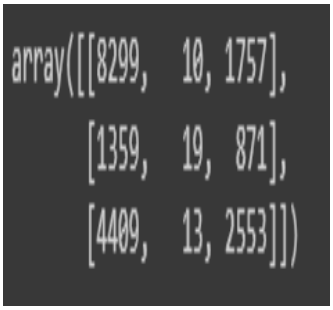
Model	Classification Report	Accuracy	Confusion Matrix
Model 2 RandomForest Classifier		0.56	

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Model 3 XG BOOST CLASSIFIER		0.57	

Model 4 Decision Tree Classifer		0.46	

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Model 5 AdaBoostClassifier		0.56	

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Model 6 GradientBoostingClassifier	precision recall f1-score support 0 0.60 0.83 0.70 10066 1 0.47 0.01 0.01 2249 2 0.51 0.38 0.44 6975 accuracy 0.57 19290 macro avg 0.52 0.41 0.38 19290 weighted avg 0.55 0.57 0.52 19290	0.57	confusion_matrix array([[8394, 4, 1668], [1357, 14, 878], [4309, 12, 2654]])

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Model 7 KNeighborsClassifier	precision recall f1-score support 0 0.54 0.72 0.62 10066 1 0.15 0.06 0.08 2249 2 0.39 0.28 0.33 6975 accuracy 0.48 19290 macro avg 0.36 0.35 0.34 19290 weighted avg 0.44 0.48 0.45 19290	0.48	array([[7241, 382, 2443], [1520, 130, 599], [4663, 342, 1970]])