

Project Development Phase Model Performance Test

Date	20 th October 2023
Team ID	Team-591345
Project Name	Ecommerce Shipping Prediction Using Machine Learning
Maximum Marks	10 Marks

Model Performance Testing:

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

Model Evaluation:

	Name	Accuracy	f1_score	Recall	Precision
0	logistic regression	63.91	69.06	67.94	70.21
1	logistic regression CV	63.91	69.22	68.48	69.98
2	XGBoost	64.00	68.55	66.18	71.09
3	Ridge classifier	65.23	70.47	70.02	70.94
4	KNN	63.50	68.50	66.95	70.12
5	Random Forest	65.68	68.69	63.50	74.80
6	Support Vector Classifier	65.86	67.08	58.67	78.30

S.No.	Parameter	Values	Screenshot
1.	Metrics	Regression Model: MAE - , MSE - , RMSE - , R2 score - Classification Model: Confusion Matrix - , Accuracy Score- & Classification Report -	<pre> *****logistic regression***** MAE: 0.3609090909090909 MSE: 0.3609090909090909 RMSE: 0.6007570980929737 R2 Score: -0.49505641980718695 *****logistic regression CV***** MAE: 0.3609090909090909 MSE: 0.3609090909090909 RMSE: 0.6007570980929737 R2 Score: -0.49505641980718695 *****XGBoost***** MAE: 0.36 MSE: 0.36 RMSE: 0.6 R2 Score: -0.4912905346187557 *****Ridge classifier***** MAE: 0.3477272727272727 MSE: 0.3477272727272727 RMSE: 0.5896840448301723 R2 Score: -0.44045108457493454 </pre>

			<pre> *****KNN***** MAE: 0.365 MSE: 0.365 RMSE: 0.6041522986797286 R2 Score: -0.5120029031551272 *****Random Forest***** MAE: 0.3431818181818182 MSE: 0.3431818181818182 RMSE: 0.5858172225035879 R2 Score: -0.42162165863277856 *****Support Vector Classifier***** MAE: 0.34136363636363637 MSE: 0.34136363636363637 RMSE: 0.5842633279298268 R2 Score: -0.4140898882559161 Confusion Matrix: [[684 212] [539 765]] Classification Report: precision recall f1-score support 0 0.56 0.76 0.65 896 1 0.78 0.59 0.67 1304 accuracy 0.66 2200 macro avg 0.67 0.68 0.66 2200 weighted avg 0.69 0.66 0.66 2200 </pre>
2.	Tune the Model	Hyperparameter Tuning – SVM, XGBoost, Logistic Regression, Random Forest	<pre> SVC: SVC(C=10, gamma=1, random_state=1234) (C: 10, gamma: 1, kernel: 'rbf') 0.6657575326890279 SVC(C=6, gamma=2, random_state=1234) (C: 6, gamma: 2, kernel: 'rbf') 0.6659845470050132 XGBoost: {'colsample_bytree': 0.8, 'gamma': 2.0, 'max_depth': 4, 'min_child_weight': 10} 0.6688713628611298 Logistic Regression: Best Score: 0.633821644529433 Best Parameters: {'Cs': 10, 'max_iter': 60} Random Forest: Best Score: 0.6845096033640187 Best Parameters: {'criterion': 'entropy', 'max_depth': 7, 'max_features': 'sqrt', 'n_estimators': 300} </pre>

