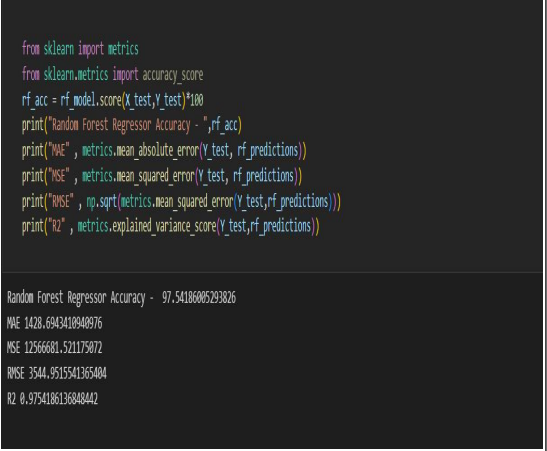
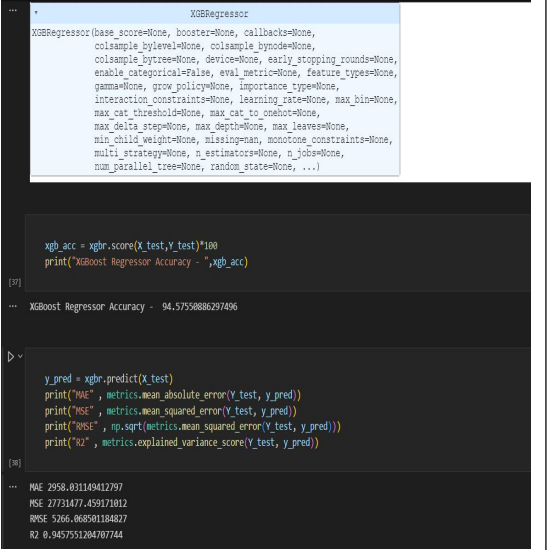


## Project Development Phase Model Performance Test

Date	09 November 2022
Team ID	PNT2023TMID592731
Project Name	Walmart Sales Analysis For Retail Industry With Machine Learning
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	<b>Regression Model:</b> MAE - , MSE - , RMSE - , R2 score -	<p style="text-align: center;"><b>Random Forest Model</b></p> 
		<b>Regression Model:</b> MAE - , MSE - , RMSE - , R2 score -	<p style="text-align: center;"><b>XGBOOST Model</b></p> 

		<b>Regression Model:</b> MAE - , MSE - , RMSE - , R2 score -	<b>Decision Tree Model</b> <pre> ... DecisionTreeRegressor DecisionTreeRegressor(max_depth=4)  d_y_predict = model.predict(X_test) d_y_predict  [266] ... array([ 6899.66242141,   755.48816365,   755.48816365, ...,           755.48816365,   755.48816365, 10620.2280267 ])  dec_acc = model.score(X_test,Y_test)*100 print("XGBoost Regressor Accuracy - ",dec_acc)  [280] ... XGBoost Regressor Accuracy - 89.69375197538243  print("MAE" , metrics.mean_absolute_error(Y_test, d_y_predict)) print("MSE" , metrics.mean_squared_error(Y_test, d_y_predict)) print("RMSE" , np.sqrt(metrics.mean_squared_error(Y_test, d_y_predict))) print("R2" , metrics.explained_variance_score(Y_test, d_y_predict))  [278] ... MAE 3019.0848885173573 MSE 52688349.48084746 RMSE 7258.674085591835 R2 0.8969382511412303 </pre>
			<b>ARIMA</b> <pre> from sklearn import metrics ar_predict=knn.predict(X_test) print("MAE" , metrics.mean_absolute_error(Y_test, ar_predict)) print("MSE" , metrics.mean_squared_error(Y_test, ar_predict)) print("RMSE" , np.sqrt(metrics.mean_squared_error(Y_test, ar_predict))) print("R2" , metrics.explained_variance_score(Y_test, ar_predict))  MAE 14351.089020272705 MSE 624157710.7837687 RMSE 24981.248933732277 </pre>
2.	Tune the Model	Hyperparameter Tuning - Validation Method -	<b>Random Forest Cross Validation Method</b> <pre> 0 from sklearn.ensemble import RandomForestRegressor from sklearn.model_selection import cross_val_score rf = RandomForestRegressor(n_estimators=50, max_depth=27, min_samples_split=3, min_samples_leaf=1) rf.fit(X_train, Y_train.ravel()) y_pred = rf.predict(X_test)  + Code + Text  [28] cv_rf=cross_val_score(rf,X,Y,cv=5) Add text cell  [29] np.mean(cv_rf)  0.9997135819682552 </pre>