

Model Development Phase Template

Date	08 May 2024
Team ID	722312
Project Title	Walmart Sales Analysis For Retail Industry With Machine Learning
Maximum Marks	6 Marks

Model Selection Report

In the forthcoming Model Selection Report, various models will be outlined, detailing their descriptions, hyperparameters, and performance metrics, including Accuracy or F1 Score. This comprehensive report will provide insights into the chosen models and their effectiveness.

Model Selection Report:

Model	Description	Hyperparameters	Performance Metric (e.g., Accuracy, F1 Score)
RandomForest	Ensemble learning method using a forest of decision trees	max_depth=30, min_samples_split=5, n_estimators=150	Testing Accuracy: 96.74488552124691 % RMSE: 4118.162627047073 MAE: 1627.8434365780672 Training Accuracy 99.07801026679833 %

DecisionTreeRegressor	A single decision tree model	random_state=0	<p>Testing Accuracy: 94.55987947188075 %</p> <p>RMSE 5323.835409637849</p> <p>MAE: 2068.9108296751015</p> <p>Training Accuracy 99.07801026679833 %</p>
xgboost	An optimized gradient boosting library	objective='reg:squared error',nthread=4,n_estimators=500,max_depth=4,learning_rate=0.5	<p>Testing Accuracy: 94.12206327106377 %</p> <p>RMSE 5533.919190794416</p> <p>MAE: 3068.009812765289</p> <p>Training Accuracy 94.09053875232357 %</p>
pmdarima	Auto ARIMA (Auto-Regressive Integrated Moving Average) model	train_data,trace=True, start_p=0,start_q=0,start_P=0,start_Q=0,max_p=10,max_q=10,max_P=10,max_Q=10,seasonal=True,stepwise=False,error_action='ignore',D=1,max_D=10,suppress_warnings=True,approximation=False	<p>Mean Squared Error (MSE) of ARIMA: 469971.08318422036</p> <p>Root Mean Squared Error (RMSE) of ARIMA: 685.5443699602677</p> <p>Mean Absolute Deviation (MAD) of ARIMA: 446.99385005214424</p>