Model Building and Training

Different ML models were trained and evaluated on the same data set.

Evaluation of the models were done using RMSE(Lower the Better) and R2 score.

Model Type	Training Details	Notes
Linear Regression	Simple Model trained after scaling.	
Ridge Regression	Added requlariza tion penalty to avoid over fitting .	Tuning done using RandomisedSearch CV for getting alpha value and important features.
Lasso Regression	Feature selection model to avoid over fitting.	Tuning done using RandomisedSearch CV for getting alpha value and important features.
Decision Tree	Simple tree model.	Pruned using max step and min samples parameters.
Random Forest	Ensemble of trees.	Hyper parameter tuning done using RandomisedSearch CV.
XG Boost Regresser	Boosted trees.	Hyper parameter tuning done using RandomisedSearch CV.

Model Evaluation Summary

Model	RMSE	R2 Score
Ridge Regression	1133.98	0.55838
Ridge Regression Hyperparameter	1133.98	0.558376
Lasso Regression	1133.98	0.55838
Lasso Regression Hyperparameter	1134.41	0.558043
Decision Tree	953.437	0.687807
Decision Tree Hyperparameter	1073.96	0.603891
Random Forest	687.794	0.837537
Random Forest Hyperparameter	1006	0.652437
XBG	443.548	0.932435
XBG Hyperparamter	1029.07	0.610377

As Observed we need to have a generalized model to predict BigMart Sales. We need to choose Random Forest Model.