



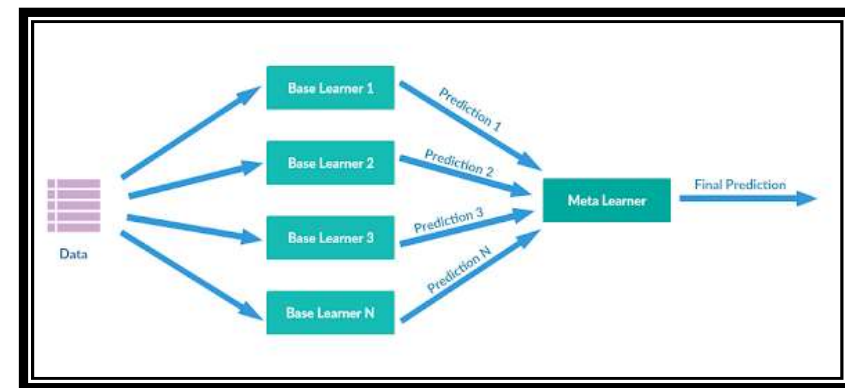
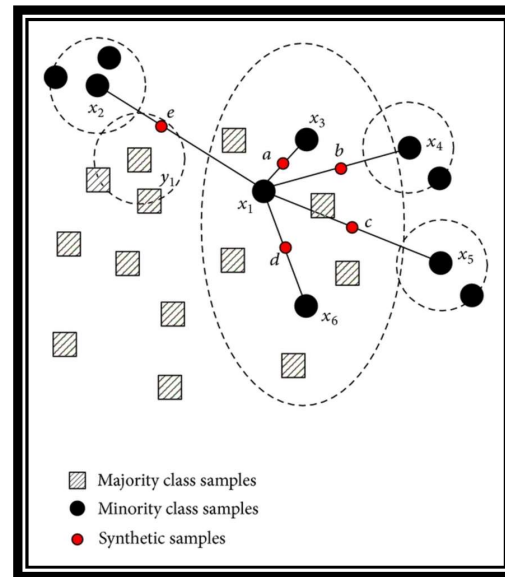
Homesite-Quote-Conversion

Key concepts used: SMOTE, Stacking



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Synthetic Minority Oversampling Technique + Stacking



- Ensemble **learning** technique that combines multiple classification or regression models
- This is a statistical technique for increasing the number of cases in your dataset in a balanced way.

[Source](#)



Homesite- Quote- Conversion

Predict customers who will
purchase on a given quote

Kaggle Scores

Individual Model Scores	
Model	Kaggle Score
Decision Tree Without Hyperparameter Tuning	0.78227
Decision Tree With Hyperparameter Tuning	0.78301
Random Forest Without Hyperparameter Tuning	0.78495
Random Forest With Hyperparameter Tuning	0.77909
Gradient Boosting Without Hyperparameter Tuning	0.81927
Gradient Boosting With Hyperparameter Tuning	0.79371
Multi Layer Perceptron	0.54347
KNN	0.50295
SVC	0.51675

SMOTE+ Stacking Model Score	
Model Used for stacking	Kaggle Score
DecisionTree, Gradient Boosting, MLP, KNN, Linear SVC stack, followed by a Gradient Boosting Model	0.82188



SMOTE Ratio: 0.5 , provided a better model

-Increasing K Fold Value in stacking increases the execution time further



Thank You!