Bonus Task

2.4 Train separate models for different types of weeks: holidays' weeks and regular.

You may train separate models for every type of week (Christmas, etc), but you probably lack training data for all weeks except regular.

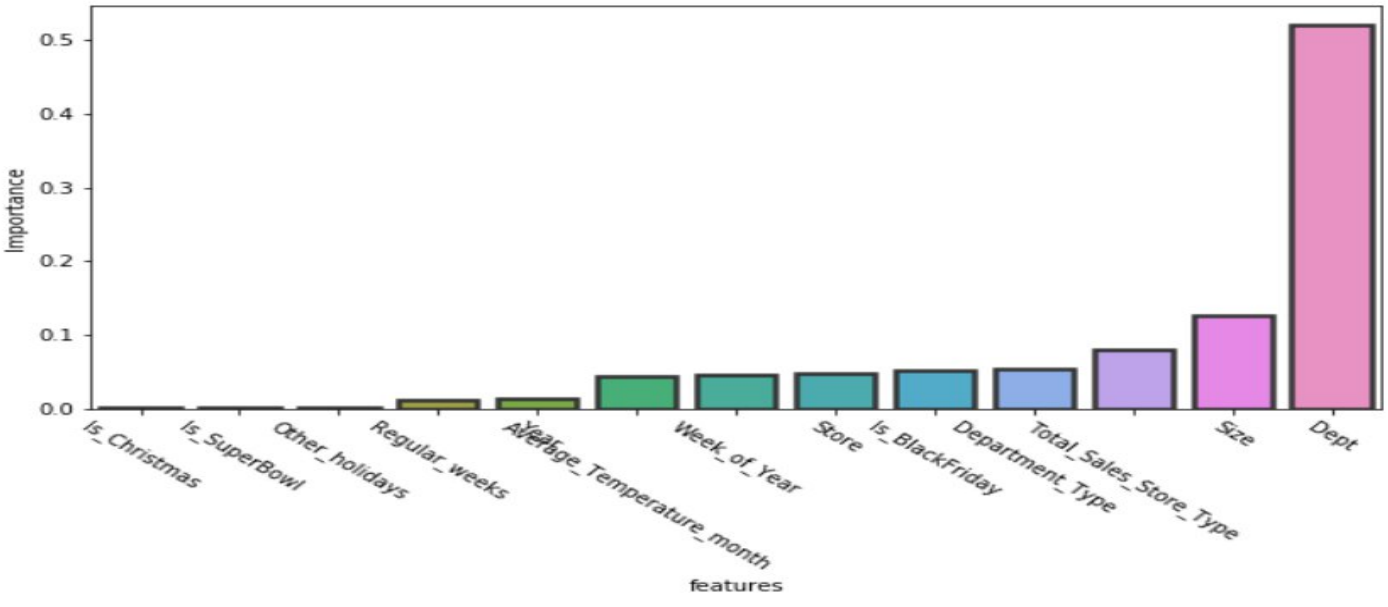
a) Tune every model using Grid Search as in II.2.
b) Make predictions on a test set; train set, save results to file. (you will need them in part III)
c) Compute train and test performance using wMAE.

Holidays' weeks Model

Grid search computation has been performed on the 50% of the holiday's data and tried to preserve the distribution of types of the stores.

On predicting the Weekly_Sales on small size store, we got around 52% accuracy using the best estimator which is not good On the other hand we got around 79% accuracy on huge size store. We can conclude that idea to train the model on holidays data is not appropriate decision in this task. And also, weighted mean absolute error on test set is higher than the train set of holiday's data.

'Dept' is the most useful features to predict the Weekly_Sales, it has around 52% importance in the best estimator. 'Is_Christmas' is the least useful features which has around 0.2% importance.

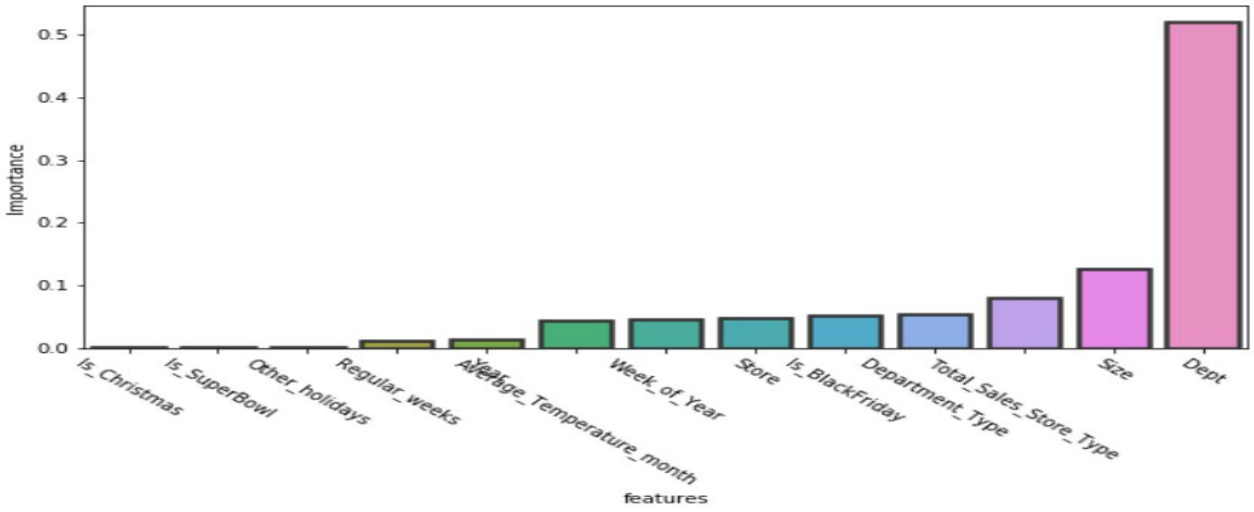


Regular Weeks Model

Grid search computation has been performed on the 10% of the regular week 's data and tried to preserve the distribution of types of the stores.

On predicting the Weekly_Sales on small size store and huge size of stores, we got around 95% accuracy. The reason of high accuracy compare to the holiday's week model is that in case of regular week number of instances/example in data are quite high compare to the holiday's week data. That's why, model is able learn the parameters quite well.

'Dept' is the most useful features to predict the Weekly_Sales, it has around 52% importance in the best estimator. 'Is_Christmas' is the least useful features which has around 0.2% importance. Features importance in case of both models is almost same.



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