*Housing Price Prediction Presentation*



* ***By:***

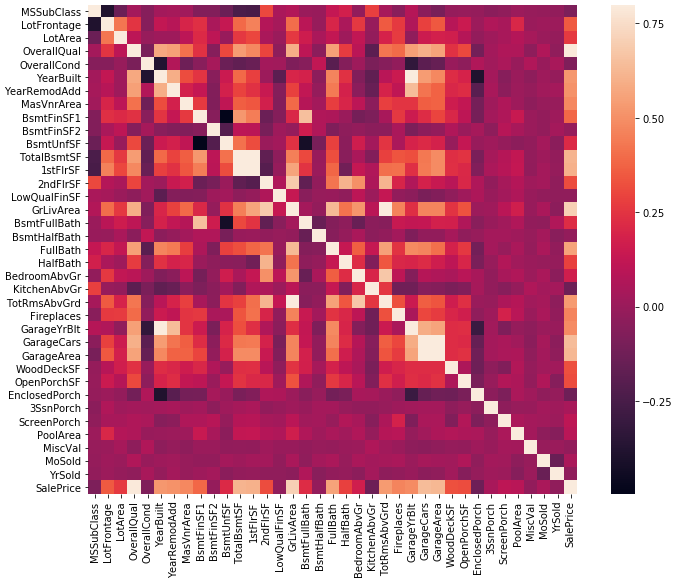
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***Huimin Ou***

***Haining Fu***

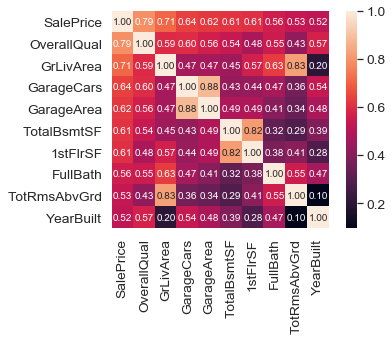
Correlation matrix (heatmap style) – to help us determined what model we are going to apply

* Using this correlation matrix, we are able to visualize the raw highly influencing factors on SalePrice.
* We want to create polynomial features from the highly correlating features, in an attempt to capture the complex non-linear relationships within the data
* Correlation between 'SalePrice' and 'GrLivArea'
* Correlation between 'SalePrice' and 'GrLivArea'



Top 10 Correlation between each features

* 'OverallQual', 'GrLivArea' and 'TotalBsmtSF' are strongly correlated with 'SalePrice'.
* We can keep 'GarageCars' since its correlation with 'SalePrice' is higher



Scatter Plot display for top 10 correlated features

* A obvious linear relationship between each features

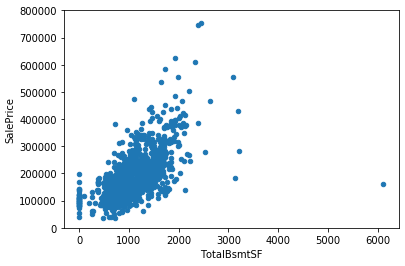


Check the Outlier

* 1. SalesPrice Vs GrLivArea

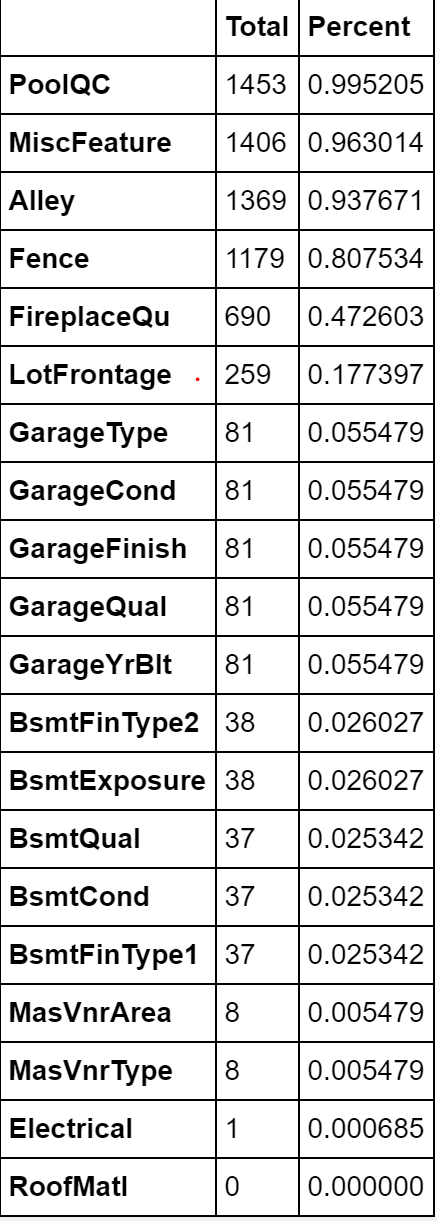


2）SalesPrice Vs TotalBsmtSF



Missing Value

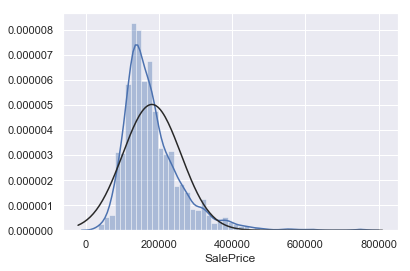
* List of missing Value with percentage.
* Drop all missing values with heavily weighted and with lower percentage
* For example ( PoolQC, MiscFeature and Electrical )

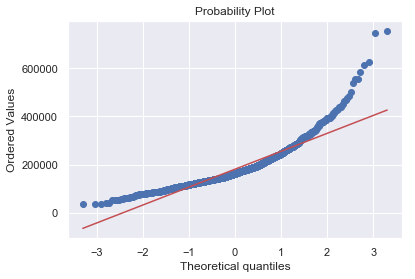


### Feature Transformation

SalePrice Distribution plot

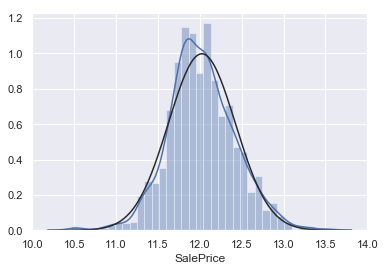
* Deviate from the normal distribution.
* Have appreciable positive skewness.
* Show peakedness.

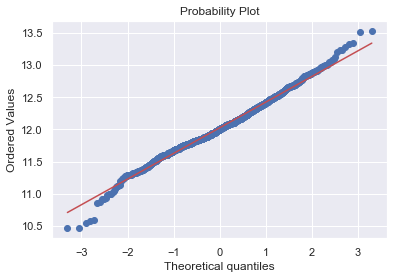




After Log Transformation

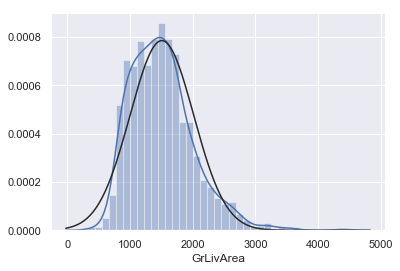
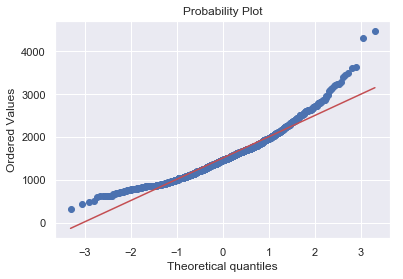
SalesPrice



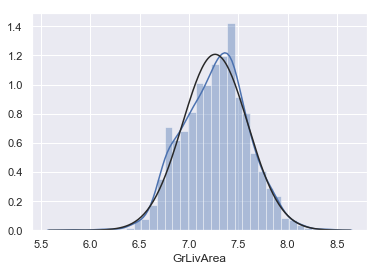


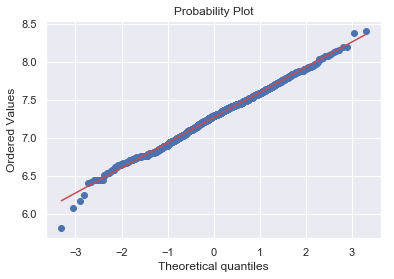
Before log Transformation:

GrLivArea



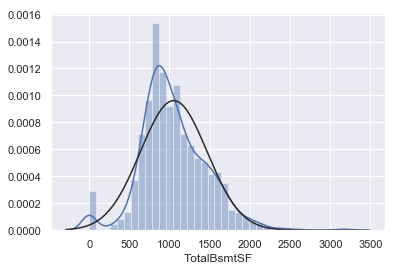
After Log Transformation

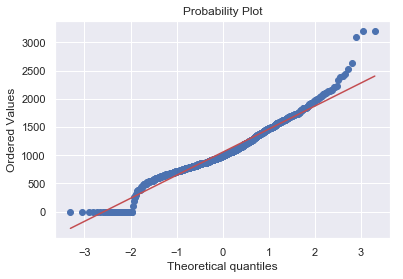




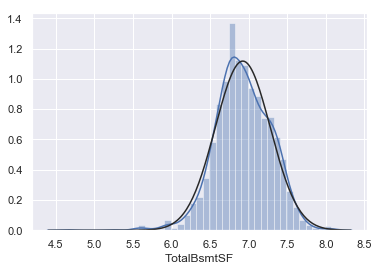
**Before the log transformation**

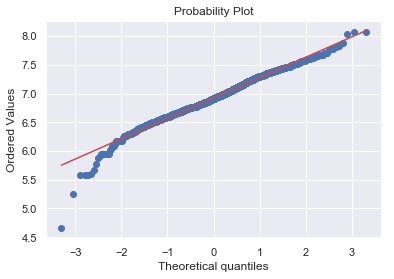
**TotalBsmtSF**





After the log Transformation

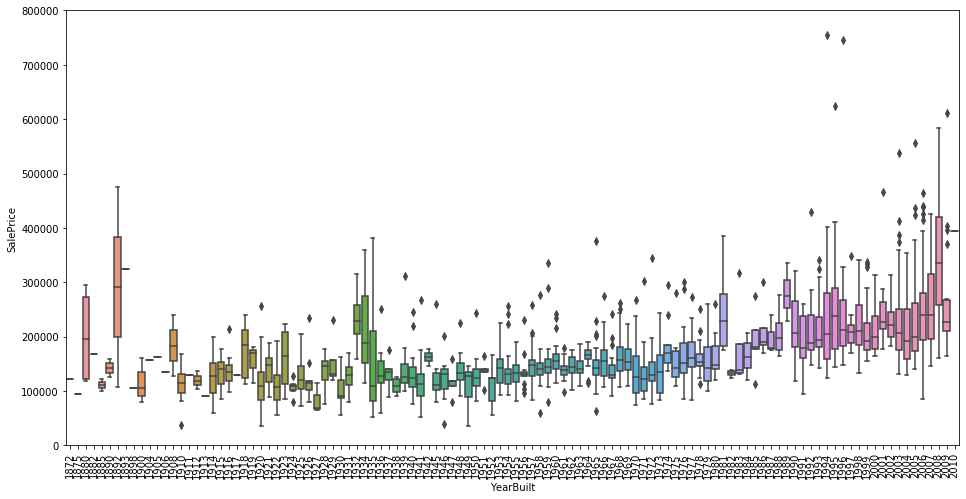




**Numeric Feature Processing**

YearBuilt

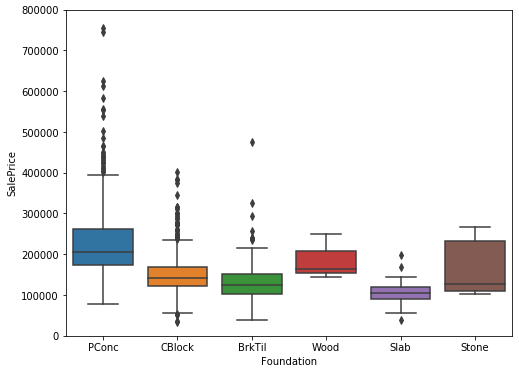
* scaler
* normalization

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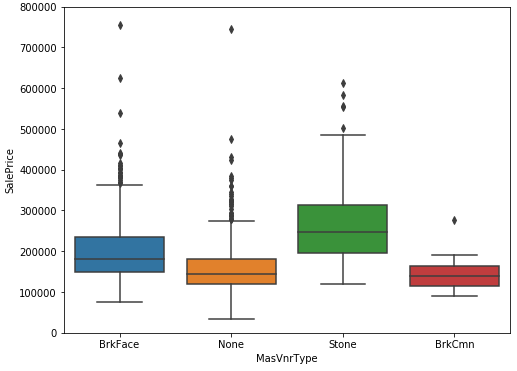
### Categorical Features Processsing

There are many categorical features, we only select the most obvious 4

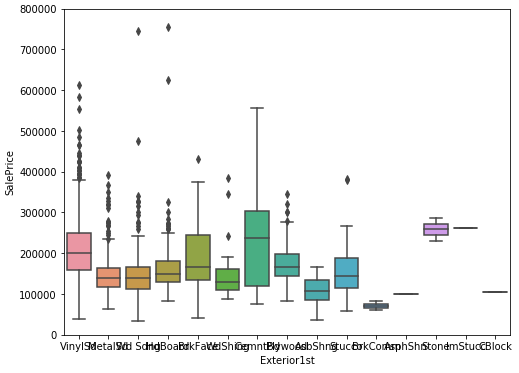
* Foundation
* MasVnrType
* Exterior1st
* RoofStyle



MsVnrType



Exterior1st



RoofStyle

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