

- The dataset initially had 2919 rows and 13 columns.
- There were no duplicate rows.
- Some columns had null values, which were imputed using the mean for the 'SalePrice' column and filled with 0 for other columns.
- Outliers in the 'LotArea' column were detected and removed, reducing the dataset to 2791 rows.
- Categorical columns were one-hot encoded to convert them into numerical features.
- The dataset was split into features (X) and target variable (y) for 'SalePrice'.
- Feature scaling was performed using MinMaxScaler to bring all features to the same scale.
- The dataset was further split into training and testing sets (80:20 ratio).
- A basic Linear Regression model was trained on the training data.
- The model achieved a mean absolute error of around 32,690 on the test set.
- To improve the model's performance, regularization techniques were employed:
  - Lasso Regression (with  $\alpha=20$ ) reduced the mean absolute error to around 32,573.
  - Ridge Regression (with  $\alpha=50$ ) reduced the mean absolute error to around 32,784.