Housing\_Step\_LM.R

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load("../Data/Housing/ht\_imp\_author.Rdata")  
load("../Data/Housing/htest\_imp\_author.Rdata")  
  
Y <- "SalePrice"  
X <- names(ht\_imp)[-69]  
names(ht\_imp)[69] <- "SalePrice"  
set.seed(12345)  
BV <- sample(c("Build","Validate"),nrow(ht\_imp),replace = TRUE,  
 prob=c(0.7,0.3))  
HT\_Build <- ht\_imp[BV=="Build",]  
HT\_Validate <- ht\_imp[BV=="Validate",]  
HT\_Formula <- as.formula("SalePrice~.")  
  
  
## Build linear regression, regression tree, neural network, and LASSO models  
# Linear Regression  
HT\_LM\_01 <- lm(HT\_Formula,data=HT\_Build)  
summary(HT\_LM\_01)

##   
## Call:  
## lm(formula = HT\_Formula, data = HT\_Build)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -268498 -12222 -409 11351 240990   
##   
## Coefficients: (2 not defined because of singularities)  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) -2.874e+03 1.529e+06 -0.002 0.998500   
## MSSubClass -1.522e+02 7.948e+01 -1.915 0.055829 .   
## MSZoningRL 8.548e+03 6.271e+03 1.363 0.173172   
## MSZoningRM 1.200e+04 7.504e+03 1.599 0.110109   
## LotArea 4.905e-01 1.214e-01 4.040 5.83e-05 \*\*\*  
## StreetPave 2.809e+04 1.705e+04 1.648 0.099785 .   
## LotShapeOthers -3.591e+03 6.118e+03 -0.587 0.557333   
## LotShapeReg 1.253e+03 2.396e+03 0.523 0.601114   
## LandContourOthers -1.216e+04 3.989e+03 -3.050 0.002362 \*\*   
## UtilitiesOthers -5.762e+04 3.247e+04 -1.774 0.076370 .   
## LotConfigCulDSac 1.212e+04 4.961e+03 2.443 0.014772 \*   
## LotConfigInside -1.620e+03 2.577e+03 -0.629 0.529715   
## LotConfigOthers -1.283e+04 5.568e+03 -2.304 0.021440 \*   
## LandSlopeOthers 7.985e+03 5.901e+03 1.353 0.176400   
## NeighborhoodBlueste -1.813e+04 3.112e+04 -0.583 0.560366   
## NeighborhoodBrDale -6.669e+03 1.572e+04 -0.424 0.671494   
## NeighborhoodBrkSide -2.472e+03 1.330e+04 -0.186 0.852658   
## NeighborhoodClearCr 6.279e+03 1.382e+04 0.454 0.649639   
## NeighborhoodCollgCr -6.260e+03 1.067e+04 -0.587 0.557431   
## NeighborhoodCrawfor 1.899e+04 1.262e+04 1.505 0.132810   
## NeighborhoodEdwards -2.678e+04 1.178e+04 -2.274 0.023227 \*   
## NeighborhoodGilbert -1.106e+04 1.145e+04 -0.966 0.334299   
## NeighborhoodIDOTRR -2.079e+04 1.476e+04 -1.408 0.159369   
## NeighborhoodMeadowV -1.113e+04 1.722e+04 -0.646 0.518417   
## NeighborhoodMitchel -1.460e+04 1.213e+04 -1.204 0.229054   
## NeighborhoodNAmes -1.367e+04 1.154e+04 -1.184 0.236594   
## NeighborhoodNoRidge 4.906e+04 1.246e+04 3.937 8.91e-05 \*\*\*  
## NeighborhoodNPkVill -9.620e+03 1.804e+04 -0.533 0.593992   
## NeighborhoodNridgHt 3.435e+04 1.107e+04 3.102 0.001983 \*\*   
## NeighborhoodNWAmes -1.361e+04 1.170e+04 -1.164 0.244802   
## NeighborhoodOldTown -2.340e+04 1.394e+04 -1.679 0.093582 .   
## NeighborhoodSawyer -1.363e+04 1.201e+04 -1.135 0.256747   
## NeighborhoodSawyerW -5.195e+03 1.166e+04 -0.445 0.656199   
## NeighborhoodSomerst 1.742e+04 1.190e+04 1.464 0.143556   
## NeighborhoodStoneBr 5.877e+04 1.200e+04 4.898 1.16e-06 \*\*\*  
## NeighborhoodSWISU -7.287e+03 1.479e+04 -0.493 0.622267   
## NeighborhoodTimber 3.107e+02 1.164e+04 0.027 0.978718   
## NeighborhoodVeenker 2.813e+04 1.465e+04 1.920 0.055161 .   
## Condition1Norm 8.501e+03 4.649e+03 1.829 0.067796 .   
## Condition1Others 1.685e+03 5.586e+03 0.302 0.762963   
## Condition2Others -2.533e+04 1.103e+04 -2.296 0.021902 \*   
## BldgTypeOthers -5.003e+02 9.040e+03 -0.055 0.955876   
## BldgTypeTwnhsE -1.276e+04 9.247e+03 -1.380 0.168026   
## HouseStyle1Story 1.247e+04 5.295e+03 2.355 0.018728 \*   
## HouseStyle2Story -1.070e+04 4.664e+03 -2.295 0.021981 \*   
## HouseStyleOthers 4.240e+03 5.528e+03 0.767 0.443324   
## OverallQual 9.221e+03 1.444e+03 6.387 2.76e-10 \*\*\*  
## OverallCond 4.522e+03 1.272e+03 3.554 0.000400 \*\*\*  
## YearBuilt 8.941e+01 1.049e+02 0.852 0.394353   
## YearRemodAdd 2.835e+01 8.111e+01 0.349 0.726811   
## RoofStyleHip 3.283e+03 2.799e+03 1.173 0.241152   
## RoofStyleOthers 1.689e+04 7.456e+03 2.266 0.023718 \*   
## RoofMatlOthers -3.063e+04 9.347e+03 -3.277 0.001092 \*\*   
## Exterior1stMetalSd 6.515e+03 1.155e+04 0.564 0.572916   
## Exterior1stOthers 9.820e+03 7.674e+03 1.280 0.200991   
## Exterior1stPlywood 1.385e+04 7.293e+03 1.899 0.057961 .   
## Exterior1stVinylSd 4.695e+03 1.110e+04 0.423 0.672559   
## Exterior1stWd Sdng 1.482e+03 8.194e+03 0.181 0.856544   
## Exterior2ndMetalSd 1.813e+03 1.180e+04 0.154 0.877908   
## Exterior2ndOthers -4.523e+03 7.639e+03 -0.592 0.553922   
## Exterior2ndPlywood -7.097e+03 6.608e+03 -1.074 0.283166   
## Exterior2ndVinylSd 3.319e+03 1.128e+04 0.294 0.768538   
## Exterior2ndWd Sdng 2.044e+03 8.196e+03 0.249 0.803108   
## MasVnrTypeNone 2.999e+03 3.238e+03 0.926 0.354533   
## MasVnrTypeOthers -4.473e+03 1.167e+04 -0.383 0.701609   
## MasVnrTypeStone 4.909e+02 4.202e+03 0.117 0.907032   
## MasVnrArea 2.485e+00 8.449e+00 0.294 0.768740   
## ExterQualOthers 7.373e+03 6.369e+03 1.158 0.247318   
## ExterQualTA -2.208e+03 3.587e+03 -0.616 0.538277   
## ExterCondOthers 9.047e+03 8.424e+03 1.074 0.283142   
## ExterCondTA 4.906e+03 3.456e+03 1.419 0.156140   
## FoundationCBlock 6.385e+03 4.627e+03 1.380 0.167964   
## FoundationOthers -6.013e+03 9.349e+03 -0.643 0.520293   
## FoundationPConc 6.207e+03 4.994e+03 1.243 0.214311   
## BsmtQualGd -2.255e+04 4.878e+03 -4.622 4.38e-06 \*\*\*  
## BsmtQualOthers -2.692e+04 8.833e+03 -3.048 0.002376 \*\*   
## BsmtQualTA -2.629e+04 6.058e+03 -4.340 1.60e-05 \*\*\*  
## BsmtCondTA 4.877e+03 3.990e+03 1.222 0.221915   
## BsmtExposureGd 1.781e+04 4.510e+03 3.949 8.48e-05 \*\*\*  
## BsmtExposureMn -5.581e+03 4.345e+03 -1.284 0.199369   
## BsmtExposureNo -7.087e+03 3.208e+03 -2.210 0.027395 \*   
## BsmtFinType1BLQ 1.861e+03 4.046e+03 0.460 0.645556   
## BsmtFinType1GLQ 2.767e+03 3.792e+03 0.730 0.465702   
## BsmtFinType1LwQ -2.679e+03 5.428e+03 -0.493 0.621788   
## BsmtFinType1Rec -1.695e+03 4.576e+03 -0.371 0.711100   
## BsmtFinType1Unf -1.322e+04 4.300e+03 -3.073 0.002183 \*\*   
## BsmtFinSF1 -1.562e+01 6.046e+00 -2.584 0.009943 \*\*   
## BsmtFinType2Unf 8.098e+03 5.607e+03 1.444 0.149017   
## BsmtFinSF2 -1.600e+00 1.131e+01 -0.141 0.887525   
## BsmtUnfSF -8.148e+00 5.501e+00 -1.481 0.138932   
## TotalBsmtSF NA NA NA NA   
## HeatingOthers -4.825e+02 8.108e+03 -0.060 0.952558   
## HeatingQCGd -1.378e+03 3.004e+03 -0.459 0.646457   
## HeatingQCOthers 1.600e+02 7.123e+03 0.022 0.982088   
## HeatingQCTA -2.918e+03 3.039e+03 -0.960 0.337283   
## CentralAirY -1.030e+03 5.408e+03 -0.190 0.848980   
## ElectricalOthers -3.617e+03 8.813e+03 -0.410 0.681625   
## ElectricalSBrkr -2.813e+03 4.423e+03 -0.636 0.524993   
## X1stFlrSF 3.485e+01 7.298e+00 4.775 2.11e-06 \*\*\*  
## X2ndFlrSF 4.861e+01 6.929e+00 7.015 4.66e-12 \*\*\*  
## LowQualFinSF -5.097e+01 2.872e+01 -1.775 0.076298 .   
## GrLivArea NA NA NA NA   
## BsmtFullBath 9.434e+03 2.848e+03 3.312 0.000964 \*\*\*  
## BsmtHalfBath 4.868e+03 4.610e+03 1.056 0.291253   
## FullBath 9.149e+03 3.196e+03 2.862 0.004307 \*\*   
## HalfBath 7.147e+03 2.981e+03 2.398 0.016717 \*   
## BedroomAbvGr -7.833e+02 1.940e+03 -0.404 0.686452   
## KitchenAbvGr -8.127e+03 6.996e+03 -1.162 0.245714   
## KitchenQualGd -2.890e+04 4.964e+03 -5.821 8.25e-09 \*\*\*  
## KitchenQualOthers -2.590e+04 8.628e+03 -3.002 0.002755 \*\*   
## KitchenQualTA -2.684e+04 5.672e+03 -4.732 2.60e-06 \*\*\*  
## TotRmsAbvGrd 3.480e+03 1.399e+03 2.488 0.013030 \*   
## FunctionalTyp 1.147e+04 4.576e+03 2.507 0.012365 \*   
## Fireplaces 4.627e+03 1.955e+03 2.366 0.018189 \*   
## GarageCars 8.779e+03 3.275e+03 2.681 0.007489 \*\*   
## GarageArea 8.139e+00 1.163e+01 0.700 0.484217   
## PavedDriveOthers -1.880e+03 7.759e+03 -0.242 0.808591   
## PavedDriveY 3.439e+02 5.003e+03 0.069 0.945210   
## WoodDeckSF 2.999e+01 8.675e+00 3.457 0.000572 \*\*\*  
## OpenPorchSF 4.263e+00 1.577e+01 0.270 0.786946   
## EnclosedPorch 6.949e+00 1.911e+01 0.364 0.716275   
## X3SsnPorch 3.811e+01 3.869e+01 0.985 0.324969   
## ScreenPorch 3.780e+01 2.006e+01 1.884 0.059878 .   
## PoolArea 5.132e+01 2.597e+01 1.977 0.048416 \*   
## MiscVal 5.131e-02 6.570e+00 0.008 0.993771   
## MoSold -4.376e+02 3.668e+02 -1.193 0.233125   
## YrSold -1.006e+02 7.531e+02 -0.134 0.893758   
## SaleTypeOthers -4.881e+04 2.189e+04 -2.230 0.025981 \*   
## SaleTypeWD -5.102e+04 2.200e+04 -2.319 0.020611 \*   
## SaleConditionNormal 1.932e+03 4.311e+03 0.448 0.654215   
## SaleConditionOthers 1.865e+03 7.424e+03 0.251 0.801679   
## SaleConditionPartial -3.207e+04 2.206e+04 -1.454 0.146408   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 28440 on 861 degrees of freedom  
## Multiple R-squared: 0.8844, Adjusted R-squared: 0.8671   
## F-statistic: 51.06 on 129 and 861 DF, p-value: < 2.2e-16

HT\_LM\_Final <- step(HT\_LM\_01)

## Start: AIC=20446.87  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LotShape +   
## LandContour + Utilities + LotConfig + LandSlope + Neighborhood +   
## Condition1 + Condition2 + BldgType + HouseStyle + OverallQual +   
## OverallCond + YearBuilt + YearRemodAdd + RoofStyle + RoofMatl +   
## Exterior1st + Exterior2nd + MasVnrType + MasVnrArea + ExterQual +   
## ExterCond + Foundation + BsmtQual + BsmtCond + BsmtExposure +   
## BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 + BsmtFinSF2 + BsmtUnfSF +   
## TotalBsmtSF + Heating + HeatingQC + CentralAir + Electrical +   
## X1stFlrSF + X2ndFlrSF + LowQualFinSF + GrLivArea + BsmtFullBath +   
## BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr +   
## KitchenQual + TotRmsAbvGrd + Functional + Fireplaces + GarageCars +   
## GarageArea + PavedDrive + WoodDeckSF + OpenPorchSF + EnclosedPorch +   
## X3SsnPorch + ScreenPorch + PoolArea + MiscVal + MoSold +   
## YrSold + SaleType + SaleCondition  
##   
##   
## Step: AIC=20446.87  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LotShape +   
## LandContour + Utilities + LotConfig + LandSlope + Neighborhood +   
## Condition1 + Condition2 + BldgType + HouseStyle + OverallQual +   
## OverallCond + YearBuilt + YearRemodAdd + RoofStyle + RoofMatl +   
## Exterior1st + Exterior2nd + MasVnrType + MasVnrArea + ExterQual +   
## ExterCond + Foundation + BsmtQual + BsmtCond + BsmtExposure +   
## BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 + BsmtFinSF2 + BsmtUnfSF +   
## TotalBsmtSF + Heating + HeatingQC + CentralAir + Electrical +   
## X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + GarageArea +   
## PavedDrive + WoodDeckSF + OpenPorchSF + EnclosedPorch + X3SsnPorch +   
## ScreenPorch + PoolArea + MiscVal + MoSold + YrSold + SaleType +   
## SaleCondition  
##   
##   
## Step: AIC=20446.87  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LotShape +   
## LandContour + Utilities + LotConfig + LandSlope + Neighborhood +   
## Condition1 + Condition2 + BldgType + HouseStyle + OverallQual +   
## OverallCond + YearBuilt + YearRemodAdd + RoofStyle + RoofMatl +   
## Exterior1st + Exterior2nd + MasVnrType + MasVnrArea + ExterQual +   
## ExterCond + Foundation + BsmtQual + BsmtCond + BsmtExposure +   
## BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 + BsmtFinSF2 + BsmtUnfSF +   
## Heating + HeatingQC + CentralAir + Electrical + X1stFlrSF +   
## X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + GarageArea +   
## PavedDrive + WoodDeckSF + OpenPorchSF + EnclosedPorch + X3SsnPorch +   
## ScreenPorch + PoolArea + MiscVal + MoSold + YrSold + SaleType +   
## SaleCondition  
##   
## Df Sum of Sq RSS AIC  
## - Exterior2nd 5 2.6926e+09 6.9890e+11 20441  
## - HeatingQC 3 8.4960e+08 6.9706e+11 20442  
## - MasVnrType 3 9.3578e+08 6.9714e+11 20442  
## - PavedDrive 2 8.7522e+07 6.9629e+11 20443  
## - Electrical 2 3.5224e+08 6.9656e+11 20443  
## - Exterior1st 5 4.7893e+09 7.0100e+11 20444  
## - LotShape 2 5.7145e+08 6.9678e+11 20444  
## - SaleCondition 3 2.0893e+09 6.9830e+11 20444  
## - MiscVal 1 4.9318e+04 6.9621e+11 20445  
## - Heating 1 2.8638e+06 6.9621e+11 20445  
## - YrSold 1 1.4431e+07 6.9622e+11 20445  
## - BsmtFinSF2 1 1.6185e+07 6.9622e+11 20445  
## - CentralAir 1 2.9337e+07 6.9624e+11 20445  
## - OpenPorchSF 1 5.9105e+07 6.9627e+11 20445  
## - MasVnrArea 1 6.9947e+07 6.9628e+11 20445  
## - YearRemodAdd 1 9.8762e+07 6.9631e+11 20445  
## - EnclosedPorch 1 1.0688e+08 6.9631e+11 20445  
## - BedroomAbvGr 1 1.3185e+08 6.9634e+11 20445  
## - ExterQual 2 1.6358e+09 6.9784e+11 20445  
## - Foundation 3 3.2126e+09 6.9942e+11 20445  
## - GarageArea 1 3.9603e+08 6.9660e+11 20445  
## - ExterCond 2 1.9154e+09 6.9812e+11 20446  
## - YearBuilt 1 5.8721e+08 6.9679e+11 20446  
## - MSZoning 2 2.1383e+09 6.9834e+11 20446  
## - X3SsnPorch 1 7.8430e+08 6.9699e+11 20446  
## - BsmtHalfBath 1 9.0174e+08 6.9711e+11 20446  
## - KitchenAbvGr 1 1.0911e+09 6.9730e+11 20446  
## - MoSold 1 1.1512e+09 6.9736e+11 20447  
## - BsmtCond 1 1.2081e+09 6.9741e+11 20447  
## <none> 6.9621e+11 20447  
## - LandSlope 1 1.4803e+09 6.9769e+11 20447  
## - BsmtFinType2 1 1.6868e+09 6.9789e+11 20447  
## - BsmtUnfSF 1 1.7739e+09 6.9798e+11 20447  
## - BldgType 2 3.2106e+09 6.9942e+11 20447  
## - Street 1 2.1952e+09 6.9840e+11 20448  
## - Utilities 1 2.5455e+09 6.9875e+11 20449  
## - LowQualFinSF 1 2.5468e+09 6.9875e+11 20449  
## - ScreenPorch 1 2.8706e+09 6.9908e+11 20449  
## - SaleType 2 4.3682e+09 7.0057e+11 20449  
## - MSSubClass 1 2.9652e+09 6.9917e+11 20449  
## - PoolArea 1 3.1589e+09 6.9937e+11 20449  
## - Condition1 2 4.9816e+09 7.0119e+11 20450  
## - RoofStyle 2 5.1079e+09 7.0131e+11 20450  
## - Condition2 1 4.2635e+09 7.0047e+11 20451  
## - Fireplaces 1 4.5275e+09 7.0073e+11 20451  
## - HalfBath 1 4.6481e+09 7.0085e+11 20452  
## - TotRmsAbvGrd 1 5.0058e+09 7.0121e+11 20452  
## - Functional 1 5.0814e+09 7.0129e+11 20452  
## - BsmtFinSF1 1 5.3972e+09 7.0160e+11 20453  
## - GarageCars 1 5.8104e+09 7.0202e+11 20453  
## - FullBath 1 6.6248e+09 7.0283e+11 20454  
## - LandContour 1 7.5201e+09 7.0373e+11 20456  
## - HouseStyle 3 1.1092e+10 7.0730e+11 20457  
## - RoofMatl 1 8.6827e+09 7.0489e+11 20457  
## - BsmtFullBath 1 8.8706e+09 7.0508e+11 20457  
## - LotConfig 3 1.1828e+10 7.0803e+11 20458  
## - WoodDeckSF 1 9.6658e+09 7.0587e+11 20459  
## - BsmtFinType1 5 1.5531e+10 7.1174e+11 20459  
## - OverallCond 1 1.0213e+10 7.0642e+11 20459  
## - LotArea 1 1.3196e+10 7.0940e+11 20464  
## - BsmtQual 3 1.8249e+10 7.1446e+11 20467  
## - X1stFlrSF 1 1.8436e+10 7.1464e+11 20471  
## - KitchenQual 3 2.7463e+10 7.2367e+11 20479  
## - BsmtExposure 3 2.7809e+10 7.2402e+11 20480  
## - OverallQual 1 3.2987e+10 7.2919e+11 20491  
## - X2ndFlrSF 1 3.9790e+10 7.3600e+11 20500  
## - Neighborhood 24 1.6770e+11 8.6391e+11 20613  
##   
## Step: AIC=20440.69  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LotShape +   
## LandContour + Utilities + LotConfig + LandSlope + Neighborhood +   
## Condition1 + Condition2 + BldgType + HouseStyle + OverallQual +   
## OverallCond + YearBuilt + YearRemodAdd + RoofStyle + RoofMatl +   
## Exterior1st + MasVnrType + MasVnrArea + ExterQual + ExterCond +   
## Foundation + BsmtQual + BsmtCond + BsmtExposure + BsmtFinType1 +   
## BsmtFinSF1 + BsmtFinType2 + BsmtFinSF2 + BsmtUnfSF + Heating +   
## HeatingQC + CentralAir + Electrical + X1stFlrSF + X2ndFlrSF +   
## LowQualFinSF + BsmtFullBath + BsmtHalfBath + FullBath + HalfBath +   
## BedroomAbvGr + KitchenAbvGr + KitchenQual + TotRmsAbvGrd +   
## Functional + Fireplaces + GarageCars + GarageArea + PavedDrive +   
## WoodDeckSF + OpenPorchSF + EnclosedPorch + X3SsnPorch + ScreenPorch +   
## PoolArea + MiscVal + MoSold + YrSold + SaleType + SaleCondition  
##   
## Df Sum of Sq RSS AIC  
## - MasVnrType 3 9.4830e+08 6.9985e+11 20436  
## - HeatingQC 3 9.8201e+08 6.9988e+11 20436  
## - PavedDrive 2 8.0735e+07 6.9898e+11 20437  
## - Electrical 2 5.6788e+08 6.9947e+11 20438  
## - LotShape 2 7.0647e+08 6.9961e+11 20438  
## - SaleCondition 3 2.1370e+09 7.0104e+11 20438  
## - MiscVal 1 2.8698e+06 6.9890e+11 20439  
## - Heating 1 4.2977e+06 6.9890e+11 20439  
## - BsmtFinSF2 1 2.5758e+07 6.9892e+11 20439  
## - YrSold 1 3.2894e+07 6.9893e+11 20439  
## - Foundation 3 2.8659e+09 7.0177e+11 20439  
## - CentralAir 1 4.1027e+07 6.9894e+11 20439  
## - YearRemodAdd 1 6.3398e+07 6.9896e+11 20439  
## - EnclosedPorch 1 6.4737e+07 6.9896e+11 20439  
## - OpenPorchSF 1 7.1265e+07 6.9897e+11 20439  
## - BedroomAbvGr 1 7.5755e+07 6.9897e+11 20439  
## - MasVnrArea 1 8.0950e+07 6.9898e+11 20439  
## - ExterQual 2 1.5782e+09 7.0048e+11 20439  
## - ExterCond 2 1.6587e+09 7.0056e+11 20439  
## - GarageArea 1 5.3553e+08 6.9943e+11 20440  
## - X3SsnPorch 1 5.9245e+08 6.9949e+11 20440  
## - MSZoning 2 2.0592e+09 7.0096e+11 20440  
## - YearBuilt 1 6.4805e+08 6.9955e+11 20440  
## - BsmtHalfBath 1 9.0374e+08 6.9980e+11 20440  
## - KitchenAbvGr 1 1.1166e+09 7.0002e+11 20440  
## - Exterior1st 5 6.8512e+09 7.0575e+11 20440  
## - MoSold 1 1.3294e+09 7.0023e+11 20441  
## - BsmtCond 1 1.3938e+09 7.0029e+11 20441  
## <none> 6.9890e+11 20441  
## - BsmtUnfSF 1 1.5683e+09 7.0047e+11 20441  
## - BsmtFinType2 1 1.6147e+09 7.0051e+11 20441  
## - LandSlope 1 1.7447e+09 7.0064e+11 20441  
## - BldgType 2 3.2307e+09 7.0213e+11 20441  
## - Street 1 2.1220e+09 7.0102e+11 20442  
## - Utilities 1 2.4169e+09 7.0132e+11 20442  
## - MSSubClass 1 2.5700e+09 7.0147e+11 20442  
## - LowQualFinSF 1 2.7105e+09 7.0161e+11 20443  
## - ScreenPorch 1 2.7327e+09 7.0163e+11 20443  
## - PoolArea 1 2.8793e+09 7.0178e+11 20443  
## - SaleType 2 4.3612e+09 7.0326e+11 20443  
## - RoofStyle 2 4.7627e+09 7.0366e+11 20443  
## - Condition1 2 5.1190e+09 7.0402e+11 20444  
## - Condition2 1 4.0988e+09 7.0300e+11 20445  
## - Fireplaces 1 4.8324e+09 7.0373e+11 20446  
## - HalfBath 1 4.9212e+09 7.0382e+11 20446  
## - Functional 1 4.9402e+09 7.0384e+11 20446  
## - TotRmsAbvGrd 1 5.2457e+09 7.0414e+11 20446  
## - BsmtFinSF1 1 5.2460e+09 7.0415e+11 20446  
## - GarageCars 1 5.4850e+09 7.0438e+11 20446  
## - FullBath 1 6.4353e+09 7.0533e+11 20448  
## - LandContour 1 6.8520e+09 7.0575e+11 20448  
## - HouseStyle 3 1.1197e+10 7.1010e+11 20450  
## - RoofMatl 1 8.3438e+09 7.0724e+11 20451  
## - LotConfig 3 1.1396e+10 7.1030e+11 20451  
## - BsmtFullBath 1 9.2367e+09 7.0814e+11 20452  
## - WoodDeckSF 1 9.4861e+09 7.0839e+11 20452  
## - BsmtFinType1 5 1.5682e+10 7.1458e+11 20453  
## - OverallCond 1 1.1332e+10 7.1023e+11 20455  
## - LotArea 1 1.3083e+10 7.1198e+11 20457  
## - BsmtQual 3 1.8917e+10 7.1782e+11 20461  
## - X1stFlrSF 1 1.7916e+10 7.1682e+11 20464  
## - BsmtExposure 3 2.7154e+10 7.2605e+11 20473  
## - KitchenQual 3 2.7602e+10 7.2650e+11 20473  
## - OverallQual 1 3.3024e+10 7.3192e+11 20484  
## - X2ndFlrSF 1 3.8822e+10 7.3772e+11 20492  
## - Neighborhood 24 1.6738e+11 8.6628e+11 20606  
##   
## Step: AIC=20436.03  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LotShape +   
## LandContour + Utilities + LotConfig + LandSlope + Neighborhood +   
## Condition1 + Condition2 + BldgType + HouseStyle + OverallQual +   
## OverallCond + YearBuilt + YearRemodAdd + RoofStyle + RoofMatl +   
## Exterior1st + MasVnrArea + ExterQual + ExterCond + Foundation +   
## BsmtQual + BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 +   
## BsmtFinType2 + BsmtFinSF2 + BsmtUnfSF + Heating + HeatingQC +   
## CentralAir + Electrical + X1stFlrSF + X2ndFlrSF + LowQualFinSF +   
## BsmtFullBath + BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr +   
## KitchenAbvGr + KitchenQual + TotRmsAbvGrd + Functional +   
## Fireplaces + GarageCars + GarageArea + PavedDrive + WoodDeckSF +   
## OpenPorchSF + EnclosedPorch + X3SsnPorch + ScreenPorch +   
## PoolArea + MiscVal + MoSold + YrSold + SaleType + SaleCondition  
##   
## Df Sum of Sq RSS AIC  
## - HeatingQC 3 1.0306e+09 7.0088e+11 20432  
## - PavedDrive 2 8.8451e+07 6.9994e+11 20432  
## - Electrical 2 6.2530e+08 7.0047e+11 20433  
## - LotShape 2 6.9547e+08 7.0054e+11 20433  
## - SaleCondition 3 2.2164e+09 7.0206e+11 20433  
## - Foundation 3 2.7284e+09 7.0258e+11 20434  
## - MiscVal 1 2.3628e+06 6.9985e+11 20434  
## - Heating 1 7.9117e+06 6.9986e+11 20434  
## - BsmtFinSF2 1 1.1313e+07 6.9986e+11 20434  
## - YrSold 1 4.0437e+07 6.9989e+11 20434  
## - CentralAir 1 4.1461e+07 6.9989e+11 20434  
## - EnclosedPorch 1 5.0439e+07 6.9990e+11 20434  
## - OpenPorchSF 1 5.6635e+07 6.9990e+11 20434  
## - YearRemodAdd 1 5.8746e+07 6.9991e+11 20434  
## - BedroomAbvGr 1 8.1808e+07 6.9993e+11 20434  
## - MasVnrArea 1 9.1078e+07 6.9994e+11 20434  
## - ExterQual 2 1.5615e+09 7.0141e+11 20434  
## - ExterCond 2 1.6137e+09 7.0146e+11 20434  
## - MSZoning 2 1.8304e+09 7.0168e+11 20435  
## - YearBuilt 1 5.2699e+08 7.0037e+11 20435  
## - X3SsnPorch 1 5.3143e+08 7.0038e+11 20435  
## - GarageArea 1 5.6339e+08 7.0041e+11 20435  
## - BsmtHalfBath 1 8.3054e+08 7.0068e+11 20435  
## - KitchenAbvGr 1 9.7151e+08 7.0082e+11 20435  
## - BsmtCond 1 1.3725e+09 7.0122e+11 20436  
## <none> 6.9985e+11 20436  
## - MoSold 1 1.4227e+09 7.0127e+11 20436  
## - BsmtUnfSF 1 1.4371e+09 7.0128e+11 20436  
## - BsmtFinType2 1 1.6060e+09 7.0145e+11 20436  
## - Exterior1st 5 7.3739e+09 7.0722e+11 20436  
## - LandSlope 1 1.7345e+09 7.0158e+11 20437  
## - BldgType 2 3.1589e+09 7.0301e+11 20437  
## - Street 1 2.1057e+09 7.0195e+11 20437  
## - Utilities 1 2.2985e+09 7.0215e+11 20437  
## - LowQualFinSF 1 2.6024e+09 7.0245e+11 20438  
## - MSSubClass 1 2.6134e+09 7.0246e+11 20438  
## - ScreenPorch 1 2.7808e+09 7.0263e+11 20438  
## - PoolArea 1 2.9250e+09 7.0277e+11 20438  
## - SaleType 2 4.3669e+09 7.0421e+11 20438  
## - RoofStyle 2 4.7707e+09 7.0462e+11 20439  
## - Condition1 2 5.1397e+09 7.0499e+11 20439  
## - Condition2 1 3.8974e+09 7.0374e+11 20440  
## - Fireplaces 1 4.8254e+09 7.0467e+11 20441  
## - Functional 1 4.8311e+09 7.0468e+11 20441  
## - BsmtFinSF1 1 4.8547e+09 7.0470e+11 20441  
## - HalfBath 1 5.0088e+09 7.0486e+11 20441  
## - TotRmsAbvGrd 1 5.1346e+09 7.0498e+11 20441  
## - GarageCars 1 5.3013e+09 7.0515e+11 20442  
## - FullBath 1 6.3000e+09 7.0615e+11 20443  
## - LandContour 1 6.9313e+09 7.0678e+11 20444  
## - RoofMatl 1 8.0855e+09 7.0793e+11 20445  
## - HouseStyle 3 1.1382e+10 7.1123e+11 20446  
## - LotConfig 3 1.1659e+10 7.1151e+11 20446  
## - BsmtFullBath 1 8.8744e+09 7.0872e+11 20447  
## - WoodDeckSF 1 9.3642e+09 7.0921e+11 20447  
## - BsmtFinType1 5 1.5321e+10 7.1517e+11 20448  
## - OverallCond 1 1.1446e+10 7.1129e+11 20450  
## - LotArea 1 1.3224e+10 7.1307e+11 20453  
## - BsmtQual 3 1.9195e+10 7.1904e+11 20457  
## - X1stFlrSF 1 1.7533e+10 7.1738e+11 20459  
## - BsmtExposure 3 2.7460e+10 7.2731e+11 20468  
## - KitchenQual 3 2.8083e+10 7.2793e+11 20469  
## - OverallQual 1 3.2938e+10 7.3279e+11 20480  
## - X2ndFlrSF 1 3.9730e+10 7.3958e+11 20489  
## - Neighborhood 24 1.7231e+11 8.7216e+11 20606  
##   
## Step: AIC=20431.49  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LotShape +   
## LandContour + Utilities + LotConfig + LandSlope + Neighborhood +   
## Condition1 + Condition2 + BldgType + HouseStyle + OverallQual +   
## OverallCond + YearBuilt + YearRemodAdd + RoofStyle + RoofMatl +   
## Exterior1st + MasVnrArea + ExterQual + ExterCond + Foundation +   
## BsmtQual + BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 +   
## BsmtFinType2 + BsmtFinSF2 + BsmtUnfSF + Heating + CentralAir +   
## Electrical + X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath +   
## BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr +   
## KitchenQual + TotRmsAbvGrd + Functional + Fireplaces + GarageCars +   
## GarageArea + PavedDrive + WoodDeckSF + OpenPorchSF + EnclosedPorch +   
## X3SsnPorch + ScreenPorch + PoolArea + MiscVal + MoSold +   
## YrSold + SaleType + SaleCondition  
##   
## Df Sum of Sq RSS AIC  
## - PavedDrive 2 1.2376e+08 7.0100e+11 20428  
## - Electrical 2 4.9438e+08 7.0137e+11 20428  
## - LotShape 2 6.5999e+08 7.0154e+11 20428  
## - SaleCondition 3 2.2013e+09 7.0308e+11 20429  
## - Foundation 3 2.4474e+09 7.0333e+11 20429  
## - BsmtFinSF2 1 8.0222e+06 7.0089e+11 20430  
## - MiscVal 1 1.0073e+07 7.0089e+11 20430  
## - Heating 1 1.1649e+07 7.0089e+11 20430  
## - CentralAir 1 2.9367e+07 7.0091e+11 20430  
## - YrSold 1 3.8720e+07 7.0092e+11 20430  
## - OpenPorchSF 1 5.2312e+07 7.0093e+11 20430  
## - EnclosedPorch 1 5.3742e+07 7.0093e+11 20430  
## - YearRemodAdd 1 9.2944e+07 7.0097e+11 20430  
## - MasVnrArea 1 1.1518e+08 7.0099e+11 20430  
## - BedroomAbvGr 1 1.2756e+08 7.0101e+11 20430  
## - ExterCond 2 1.5783e+09 7.0246e+11 20430  
## - ExterQual 2 1.7180e+09 7.0260e+11 20430  
## - MSZoning 2 1.8209e+09 7.0270e+11 20430  
## - GarageArea 1 4.7604e+08 7.0135e+11 20430  
## - X3SsnPorch 1 6.2162e+08 7.0150e+11 20430  
## - YearBuilt 1 6.9703e+08 7.0158e+11 20431  
## - BsmtHalfBath 1 9.2502e+08 7.0180e+11 20431  
## - KitchenAbvGr 1 1.0551e+09 7.0193e+11 20431  
## - BsmtUnfSF 1 1.3623e+09 7.0224e+11 20431  
## <none> 7.0088e+11 20432  
## - BsmtCond 1 1.4719e+09 7.0235e+11 20432  
## - MoSold 1 1.4973e+09 7.0238e+11 20432  
## - BsmtFinType2 1 1.6254e+09 7.0250e+11 20432  
## - BldgType 2 3.0689e+09 7.0395e+11 20432  
## - LandSlope 1 1.9196e+09 7.0280e+11 20432  
## - Street 1 2.1248e+09 7.0300e+11 20433  
## - Utilities 1 2.2488e+09 7.0313e+11 20433  
## - MSSubClass 1 2.4567e+09 7.0333e+11 20433  
## - LowQualFinSF 1 2.5525e+09 7.0343e+11 20433  
## - ScreenPorch 1 2.6542e+09 7.0353e+11 20433  
## - PoolArea 1 2.6781e+09 7.0356e+11 20433  
## - Exterior1st 5 8.5129e+09 7.0939e+11 20434  
## - SaleType 2 4.2850e+09 7.0516e+11 20434  
## - RoofStyle 2 4.7542e+09 7.0563e+11 20434  
## - Condition1 2 5.0040e+09 7.0588e+11 20435  
## - Condition2 1 4.0368e+09 7.0491e+11 20435  
## - HalfBath 1 4.6791e+09 7.0556e+11 20436  
## - BsmtFinSF1 1 4.7215e+09 7.0560e+11 20436  
## - Functional 1 4.7838e+09 7.0566e+11 20436  
## - Fireplaces 1 5.0325e+09 7.0591e+11 20437  
## - TotRmsAbvGrd 1 5.3868e+09 7.0626e+11 20437  
## - GarageCars 1 5.4619e+09 7.0634e+11 20437  
## - FullBath 1 6.1367e+09 7.0701e+11 20438  
## - LandContour 1 7.2290e+09 7.0811e+11 20440  
## - RoofMatl 1 8.1202e+09 7.0900e+11 20441  
## - HouseStyle 3 1.1493e+10 7.1237e+11 20442  
## - BsmtFullBath 1 8.8939e+09 7.0977e+11 20442  
## - LotConfig 3 1.1924e+10 7.1280e+11 20442  
## - WoodDeckSF 1 9.1286e+09 7.1001e+11 20442  
## - BsmtFinType1 5 1.5072e+10 7.1595e+11 20443  
## - OverallCond 1 1.2003e+10 7.1288e+11 20446  
## - LotArea 1 1.3115e+10 7.1399e+11 20448  
## - BsmtQual 3 1.9515e+10 7.2039e+11 20453  
## - X1stFlrSF 1 1.7680e+10 7.1856e+11 20454  
## - BsmtExposure 3 2.7071e+10 7.2795e+11 20463  
## - KitchenQual 3 2.7554e+10 7.2843e+11 20464  
## - OverallQual 1 3.3082e+10 7.3396e+11 20475  
## - X2ndFlrSF 1 4.0618e+10 7.4150e+11 20485  
## - Neighborhood 24 1.7295e+11 8.7383e+11 20602  
##   
## Step: AIC=20427.67  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LotShape +   
## LandContour + Utilities + LotConfig + LandSlope + Neighborhood +   
## Condition1 + Condition2 + BldgType + HouseStyle + OverallQual +   
## OverallCond + YearBuilt + YearRemodAdd + RoofStyle + RoofMatl +   
## Exterior1st + MasVnrArea + ExterQual + ExterCond + Foundation +   
## BsmtQual + BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 +   
## BsmtFinType2 + BsmtFinSF2 + BsmtUnfSF + Heating + CentralAir +   
## Electrical + X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath +   
## BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr +   
## KitchenQual + TotRmsAbvGrd + Functional + Fireplaces + GarageCars +   
## GarageArea + WoodDeckSF + OpenPorchSF + EnclosedPorch + X3SsnPorch +   
## ScreenPorch + PoolArea + MiscVal + MoSold + YrSold + SaleType +   
## SaleCondition  
##   
## Df Sum of Sq RSS AIC  
## - Electrical 2 5.1039e+08 7.0151e+11 20424  
## - LotShape 2 6.6408e+08 7.0167e+11 20425  
## - SaleCondition 3 2.1933e+09 7.0320e+11 20425  
## - Foundation 3 2.4877e+09 7.0349e+11 20425  
## - BsmtFinSF2 1 7.8802e+06 7.0101e+11 20426  
## - Heating 1 9.5218e+06 7.0101e+11 20426  
## - MiscVal 1 1.0124e+07 7.0101e+11 20426  
## - CentralAir 1 2.9360e+07 7.0103e+11 20426  
## - YrSold 1 3.7448e+07 7.0104e+11 20426  
## - OpenPorchSF 1 5.1046e+07 7.0105e+11 20426  
## - EnclosedPorch 1 5.4304e+07 7.0106e+11 20426  
## - MasVnrArea 1 1.1194e+08 7.0111e+11 20426  
## - YearRemodAdd 1 1.1595e+08 7.0112e+11 20426  
## - BedroomAbvGr 1 1.3314e+08 7.0113e+11 20426  
## - ExterCond 2 1.5603e+09 7.0256e+11 20426  
## - ExterQual 2 1.7235e+09 7.0273e+11 20426  
## - MSZoning 2 1.8198e+09 7.0282e+11 20426  
## - GarageArea 1 4.5817e+08 7.0146e+11 20426  
## - X3SsnPorch 1 6.3089e+08 7.0163e+11 20427  
## - YearBuilt 1 8.0426e+08 7.0181e+11 20427  
## - BsmtHalfBath 1 8.8545e+08 7.0189e+11 20427  
## - KitchenAbvGr 1 1.0602e+09 7.0206e+11 20427  
## - BsmtUnfSF 1 1.3444e+09 7.0235e+11 20428  
## <none> 7.0100e+11 20428  
## - BsmtCond 1 1.4938e+09 7.0250e+11 20428  
## - MoSold 1 1.4996e+09 7.0250e+11 20428  
## - BsmtFinType2 1 1.5997e+09 7.0260e+11 20428  
## - BldgType 2 3.0675e+09 7.0407e+11 20428  
## - LandSlope 1 1.9656e+09 7.0297e+11 20428  
## - Street 1 2.1263e+09 7.0313e+11 20429  
## - Utilities 1 2.2296e+09 7.0323e+11 20429  
## - MSSubClass 1 2.4828e+09 7.0348e+11 20429  
## - LowQualFinSF 1 2.5756e+09 7.0358e+11 20429  
## - ScreenPorch 1 2.6561e+09 7.0366e+11 20429  
## - PoolArea 1 2.6853e+09 7.0369e+11 20430  
## - Exterior1st 5 8.4607e+09 7.0946e+11 20430  
## - SaleType 2 4.3064e+09 7.0531e+11 20430  
## - RoofStyle 2 4.8273e+09 7.0583e+11 20431  
## - Condition1 2 5.0685e+09 7.0607e+11 20431  
## - Condition2 1 4.1189e+09 7.0512e+11 20432  
## - BsmtFinSF1 1 4.6714e+09 7.0567e+11 20432  
## - HalfBath 1 4.7040e+09 7.0571e+11 20432  
## - Functional 1 4.7355e+09 7.0574e+11 20432  
## - Fireplaces 1 4.9734e+09 7.0598e+11 20433  
## - TotRmsAbvGrd 1 5.4239e+09 7.0643e+11 20433  
## - GarageCars 1 5.5652e+09 7.0657e+11 20434  
## - FullBath 1 6.2044e+09 7.0721e+11 20434  
## - LandContour 1 7.2722e+09 7.0827e+11 20436  
## - RoofMatl 1 8.1090e+09 7.0911e+11 20437  
## - HouseStyle 3 1.1729e+10 7.1273e+11 20438  
## - BsmtFullBath 1 8.8618e+09 7.0986e+11 20438  
## - LotConfig 3 1.1893e+10 7.1290e+11 20438  
## - WoodDeckSF 1 9.1728e+09 7.1017e+11 20439  
## - BsmtFinType1 5 1.5246e+10 7.1625e+11 20439  
## - OverallCond 1 1.1920e+10 7.1292e+11 20442  
## - LotArea 1 1.3144e+10 7.1415e+11 20444  
## - BsmtQual 3 1.9522e+10 7.2052e+11 20449  
## - X1stFlrSF 1 1.7595e+10 7.1860e+11 20450  
## - BsmtExposure 3 2.6960e+10 7.2796e+11 20459  
## - KitchenQual 3 2.7651e+10 7.2865e+11 20460  
## - OverallQual 1 3.3137e+10 7.3414e+11 20471  
## - X2ndFlrSF 1 4.0960e+10 7.4196e+11 20482  
## - Neighborhood 24 1.7332e+11 8.7432e+11 20599  
##   
## Step: AIC=20424.39  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LotShape +   
## LandContour + Utilities + LotConfig + LandSlope + Neighborhood +   
## Condition1 + Condition2 + BldgType + HouseStyle + OverallQual +   
## OverallCond + YearBuilt + YearRemodAdd + RoofStyle + RoofMatl +   
## Exterior1st + MasVnrArea + ExterQual + ExterCond + Foundation +   
## BsmtQual + BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 +   
## BsmtFinType2 + BsmtFinSF2 + BsmtUnfSF + Heating + CentralAir +   
## X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + GarageArea +   
## WoodDeckSF + OpenPorchSF + EnclosedPorch + X3SsnPorch + ScreenPorch +   
## PoolArea + MiscVal + MoSold + YrSold + SaleType + SaleCondition  
##   
## Df Sum of Sq RSS AIC  
## - LotShape 2 6.5983e+08 7.0217e+11 20421  
## - SaleCondition 3 2.1496e+09 7.0366e+11 20421  
## - Foundation 3 2.6736e+09 7.0419e+11 20422  
## - BsmtFinSF2 1 2.6725e+06 7.0151e+11 20422  
## - MiscVal 1 7.2176e+06 7.0152e+11 20422  
## - Heating 1 2.0830e+07 7.0153e+11 20422  
## - CentralAir 1 3.1546e+07 7.0154e+11 20422  
## - YrSold 1 4.3523e+07 7.0156e+11 20423  
## - OpenPorchSF 1 5.1619e+07 7.0156e+11 20423  
## - EnclosedPorch 1 6.5749e+07 7.0158e+11 20423  
## - YearRemodAdd 1 7.1587e+07 7.0158e+11 20423  
## - MasVnrArea 1 1.2087e+08 7.0163e+11 20423  
## - BedroomAbvGr 1 1.5181e+08 7.0166e+11 20423  
## - MSZoning 2 1.6031e+09 7.0312e+11 20423  
## - ExterQual 2 1.7187e+09 7.0323e+11 20423  
## - ExterCond 2 1.7317e+09 7.0324e+11 20423  
## - GarageArea 1 4.3861e+08 7.0195e+11 20423  
## - X3SsnPorch 1 6.3396e+08 7.0215e+11 20423  
## - YearBuilt 1 7.7037e+08 7.0228e+11 20424  
## - BsmtHalfBath 1 8.4834e+08 7.0236e+11 20424  
## - KitchenAbvGr 1 9.8664e+08 7.0250e+11 20424  
## - BsmtUnfSF 1 1.3367e+09 7.0285e+11 20424  
## - BsmtCond 1 1.3698e+09 7.0288e+11 20424  
## <none> 7.0151e+11 20424  
## - MoSold 1 1.4833e+09 7.0300e+11 20425  
## - BldgType 2 3.0621e+09 7.0457e+11 20425  
## - BsmtFinType2 1 1.7206e+09 7.0323e+11 20425  
## - Utilities 1 1.9904e+09 7.0350e+11 20425  
## - LandSlope 1 2.0236e+09 7.0354e+11 20425  
## - Street 1 2.0528e+09 7.0357e+11 20425  
## - MSSubClass 1 2.4092e+09 7.0392e+11 20426  
## - LowQualFinSF 1 2.4582e+09 7.0397e+11 20426  
## - ScreenPorch 1 2.6317e+09 7.0414e+11 20426  
## - PoolArea 1 2.6596e+09 7.0417e+11 20426  
## - SaleType 2 4.2670e+09 7.0578e+11 20426  
## - Exterior1st 5 8.5861e+09 7.1010e+11 20426  
## - RoofStyle 2 4.6784e+09 7.0619e+11 20427  
## - Condition1 2 4.7942e+09 7.0631e+11 20427  
## - Condition2 1 4.2489e+09 7.0576e+11 20428  
## - HalfBath 1 4.6307e+09 7.0614e+11 20429  
## - BsmtFinSF1 1 4.6675e+09 7.0618e+11 20429  
## - Functional 1 4.7756e+09 7.0629e+11 20429  
## - Fireplaces 1 4.9639e+09 7.0648e+11 20429  
## - TotRmsAbvGrd 1 5.5188e+09 7.0703e+11 20430  
## - GarageCars 1 5.5845e+09 7.0710e+11 20430  
## - FullBath 1 6.0064e+09 7.0752e+11 20431  
## - LandContour 1 7.3266e+09 7.0884e+11 20433  
## - RoofMatl 1 8.0780e+09 7.0959e+11 20434  
## - BsmtFullBath 1 8.6885e+09 7.1020e+11 20435  
## - LotConfig 3 1.1865e+10 7.1338e+11 20435  
## - WoodDeckSF 1 9.0167e+09 7.1053e+11 20435  
## - HouseStyle 3 1.2060e+10 7.1357e+11 20435  
## - BsmtFinType1 5 1.5264e+10 7.1678e+11 20436  
## - OverallCond 1 1.1806e+10 7.1332e+11 20439  
## - LotArea 1 1.3152e+10 7.1466e+11 20441  
## - BsmtQual 3 1.9565e+10 7.2108e+11 20446  
## - X1stFlrSF 1 1.7603e+10 7.1911e+11 20447  
## - BsmtExposure 3 2.6936e+10 7.2845e+11 20456  
## - KitchenQual 3 2.7463e+10 7.2898e+11 20456  
## - OverallQual 1 3.3513e+10 7.3503e+11 20469  
## - X2ndFlrSF 1 4.1463e+10 7.4297e+11 20479  
## - Neighborhood 24 1.7298e+11 8.7449e+11 20595  
##   
## Step: AIC=20421.32  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + YearRemodAdd + RoofStyle + RoofMatl + Exterior1st +   
## MasVnrArea + ExterQual + ExterCond + Foundation + BsmtQual +   
## BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtFinSF2 + BsmtUnfSF + Heating + CentralAir + X1stFlrSF +   
## X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + GarageArea +   
## WoodDeckSF + OpenPorchSF + EnclosedPorch + X3SsnPorch + ScreenPorch +   
## PoolArea + MiscVal + MoSold + YrSold + SaleType + SaleCondition  
##   
## Df Sum of Sq RSS AIC  
## - SaleCondition 3 2.1686e+09 7.0434e+11 20418  
## - Foundation 3 2.8024e+09 7.0497e+11 20419  
## - BsmtFinSF2 1 2.0169e+06 7.0217e+11 20419  
## - MiscVal 1 1.3655e+07 7.0219e+11 20419  
## - Heating 1 2.2222e+07 7.0219e+11 20419  
## - CentralAir 1 2.5983e+07 7.0220e+11 20419  
## - YrSold 1 4.1259e+07 7.0221e+11 20419  
## - OpenPorchSF 1 6.1357e+07 7.0223e+11 20419  
## - EnclosedPorch 1 7.0927e+07 7.0224e+11 20419  
## - YearRemodAdd 1 7.7813e+07 7.0225e+11 20419  
## - MasVnrArea 1 1.1784e+08 7.0229e+11 20420  
## - ExterQual 2 1.5527e+09 7.0372e+11 20420  
## - BedroomAbvGr 1 1.6394e+08 7.0234e+11 20420  
## - MSZoning 2 1.6865e+09 7.0386e+11 20420  
## - ExterCond 2 1.7007e+09 7.0387e+11 20420  
## - GarageArea 1 3.9954e+08 7.0257e+11 20420  
## - X3SsnPorch 1 6.1786e+08 7.0279e+11 20420  
## - YearBuilt 1 7.1382e+08 7.0289e+11 20420  
## - BsmtHalfBath 1 7.4550e+08 7.0292e+11 20420  
## - KitchenAbvGr 1 9.7511e+08 7.0315e+11 20421  
## - BsmtUnfSF 1 1.3196e+09 7.0349e+11 20421  
## - BsmtCond 1 1.4030e+09 7.0358e+11 20421  
## <none> 7.0217e+11 20421  
## - MoSold 1 1.4759e+09 7.0365e+11 20421  
## - BsmtFinType2 1 1.7297e+09 7.0390e+11 20422  
## - BldgType 2 3.2250e+09 7.0540e+11 20422  
## - Utilities 1 1.9516e+09 7.0412e+11 20422  
## - Street 1 2.0771e+09 7.0425e+11 20422  
## - LandSlope 1 2.1575e+09 7.0433e+11 20422  
## - MSSubClass 1 2.3104e+09 7.0448e+11 20423  
## - LowQualFinSF 1 2.4040e+09 7.0458e+11 20423  
## - ScreenPorch 1 2.5272e+09 7.0470e+11 20423  
## - PoolArea 1 2.5876e+09 7.0476e+11 20423  
## - Exterior1st 5 8.4884e+09 7.1066e+11 20423  
## - SaleType 2 4.3023e+09 7.0647e+11 20423  
## - Condition1 2 4.9178e+09 7.0709e+11 20424  
## - RoofStyle 2 4.9892e+09 7.0716e+11 20424  
## - Condition2 1 4.4534e+09 7.0663e+11 20426  
## - HalfBath 1 4.5958e+09 7.0677e+11 20426  
## - BsmtFinSF1 1 4.6718e+09 7.0684e+11 20426  
## - Functional 1 4.7250e+09 7.0690e+11 20426  
## - Fireplaces 1 4.9024e+09 7.0707e+11 20426  
## - TotRmsAbvGrd 1 5.5455e+09 7.0772e+11 20427  
## - GarageCars 1 5.7964e+09 7.0797e+11 20428  
## - FullBath 1 5.9531e+09 7.0813e+11 20428  
## - LandContour 1 7.9422e+09 7.1011e+11 20431  
## - RoofMatl 1 8.0594e+09 7.1023e+11 20431  
## - LotConfig 3 1.1293e+10 7.1346e+11 20431  
## - WoodDeckSF 1 8.7319e+09 7.1090e+11 20432  
## - BsmtFullBath 1 8.9922e+09 7.1116e+11 20432  
## - HouseStyle 3 1.2064e+10 7.1424e+11 20432  
## - BsmtFinType1 5 1.4968e+10 7.1714e+11 20432  
## - OverallCond 1 1.1670e+10 7.1384e+11 20436  
## - LotArea 1 1.2971e+10 7.1514e+11 20438  
## - BsmtQual 3 1.9573e+10 7.2175e+11 20443  
## - X1stFlrSF 1 1.7408e+10 7.1958e+11 20444  
## - BsmtExposure 3 2.6576e+10 7.2875e+11 20452  
## - KitchenQual 3 2.7385e+10 7.2956e+11 20453  
## - OverallQual 1 3.3962e+10 7.3613e+11 20466  
## - X2ndFlrSF 1 4.1292e+10 7.4346e+11 20476  
## - Neighborhood 24 1.7246e+11 8.7463e+11 20591  
##   
## Step: AIC=20418.38  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + YearRemodAdd + RoofStyle + RoofMatl + Exterior1st +   
## MasVnrArea + ExterQual + ExterCond + Foundation + BsmtQual +   
## BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtFinSF2 + BsmtUnfSF + Heating + CentralAir + X1stFlrSF +   
## X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + GarageArea +   
## WoodDeckSF + OpenPorchSF + EnclosedPorch + X3SsnPorch + ScreenPorch +   
## PoolArea + MiscVal + MoSold + YrSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - Foundation 3 2.8166e+09 7.0716e+11 20416  
## - BsmtFinSF2 1 1.2237e+06 7.0434e+11 20416  
## - MiscVal 1 1.4465e+07 7.0436e+11 20416  
## - CentralAir 1 2.0711e+07 7.0436e+11 20416  
## - Heating 1 2.2130e+07 7.0436e+11 20416  
## - YrSold 1 3.5456e+07 7.0438e+11 20416  
## - OpenPorchSF 1 6.4475e+07 7.0441e+11 20417  
## - YearRemodAdd 1 8.1567e+07 7.0442e+11 20417  
## - EnclosedPorch 1 1.0098e+08 7.0444e+11 20417  
## - MasVnrArea 1 1.1951e+08 7.0446e+11 20417  
## - BedroomAbvGr 1 1.3302e+08 7.0447e+11 20417  
## - MSZoning 2 1.6352e+09 7.0598e+11 20417  
## - ExterCond 2 1.6834e+09 7.0602e+11 20417  
## - ExterQual 2 1.7049e+09 7.0605e+11 20417  
## - GarageArea 1 4.0992e+08 7.0475e+11 20417  
## - YearBuilt 1 5.9613e+08 7.0494e+11 20417  
## - X3SsnPorch 1 6.4012e+08 7.0498e+11 20417  
## - BsmtHalfBath 1 7.4380e+08 7.0508e+11 20417  
## - KitchenAbvGr 1 1.0143e+09 7.0535e+11 20418  
## - BsmtCond 1 1.3898e+09 7.0573e+11 20418  
## - BsmtUnfSF 1 1.3998e+09 7.0574e+11 20418  
## <none> 7.0434e+11 20418  
## - MoSold 1 1.4869e+09 7.0583e+11 20419  
## - BsmtFinType2 1 1.8099e+09 7.0615e+11 20419  
## - BldgType 2 3.2512e+09 7.0759e+11 20419  
## - LandSlope 1 1.8520e+09 7.0619e+11 20419  
## - Utilities 1 1.9915e+09 7.0633e+11 20419  
## - Street 1 2.0813e+09 7.0642e+11 20419  
## - MSSubClass 1 2.2899e+09 7.0663e+11 20420  
## - ScreenPorch 1 2.3428e+09 7.0668e+11 20420  
## - LowQualFinSF 1 2.4296e+09 7.0677e+11 20420  
## - PoolArea 1 2.6245e+09 7.0697e+11 20420  
## - Exterior1st 5 8.5649e+09 7.1291e+11 20420  
## - RoofStyle 2 4.9060e+09 7.0925e+11 20421  
## - Condition1 2 5.1648e+09 7.0951e+11 20422  
## - Condition2 1 4.3921e+09 7.0873e+11 20423  
## - Functional 1 4.3981e+09 7.0874e+11 20423  
## - BsmtFinSF1 1 4.7758e+09 7.0912e+11 20423  
## - HalfBath 1 4.9168e+09 7.0926e+11 20423  
## - Fireplaces 1 4.9761e+09 7.0932e+11 20423  
## - TotRmsAbvGrd 1 5.5474e+09 7.0989e+11 20424  
## - GarageCars 1 5.9148e+09 7.1026e+11 20425  
## - FullBath 1 6.0523e+09 7.1039e+11 20425  
## - LandContour 1 7.9977e+09 7.1234e+11 20428  
## - BsmtFullBath 1 8.5631e+09 7.1290e+11 20428  
## - RoofMatl 1 8.8259e+09 7.1317e+11 20429  
## - WoodDeckSF 1 9.0909e+09 7.1343e+11 20429  
## - HouseStyle 3 1.2126e+10 7.1647e+11 20429  
## - LotConfig 3 1.2424e+10 7.1676e+11 20430  
## - BsmtFinType1 5 1.5589e+10 7.1993e+11 20430  
## - OverallCond 1 1.1550e+10 7.1589e+11 20433  
## - SaleType 2 1.4200e+10 7.1854e+11 20434  
## - LotArea 1 1.3399e+10 7.1774e+11 20435  
## - X1stFlrSF 1 1.7107e+10 7.2145e+11 20440  
## - BsmtQual 3 2.0353e+10 7.2469e+11 20441  
## - KitchenQual 3 2.6040e+10 7.3038e+11 20448  
## - BsmtExposure 3 2.6824e+10 7.3116e+11 20449  
## - OverallQual 1 3.4859e+10 7.3920e+11 20464  
## - X2ndFlrSF 1 4.1078e+10 7.4542e+11 20473  
## - Neighborhood 24 1.7188e+11 8.7622e+11 20587  
##   
## Step: AIC=20416.33  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + YearRemodAdd + RoofStyle + RoofMatl + Exterior1st +   
## MasVnrArea + ExterQual + ExterCond + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtFinSF2 + BsmtUnfSF + Heating + CentralAir + X1stFlrSF +   
## X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + GarageArea +   
## WoodDeckSF + OpenPorchSF + EnclosedPorch + X3SsnPorch + ScreenPorch +   
## PoolArea + MiscVal + MoSold + YrSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - CentralAir 1 1.4674e+04 7.0716e+11 20414  
## - MiscVal 1 3.5731e+06 7.0716e+11 20414  
## - BsmtFinSF2 1 1.4910e+07 7.0717e+11 20414  
## - YrSold 1 2.1620e+07 7.0718e+11 20414  
## - EnclosedPorch 1 4.4565e+07 7.0720e+11 20414  
## - MSZoning 2 1.4758e+09 7.0863e+11 20414  
## - YearRemodAdd 1 4.8432e+07 7.0721e+11 20414  
## - OpenPorchSF 1 8.9294e+07 7.0725e+11 20415  
## - Heating 1 1.0538e+08 7.0726e+11 20415  
## - MasVnrArea 1 1.1798e+08 7.0728e+11 20415  
## - BedroomAbvGr 1 1.4513e+08 7.0730e+11 20415  
## - ExterCond 2 1.5926e+09 7.0875e+11 20415  
## - ExterQual 2 1.6029e+09 7.0876e+11 20415  
## - GarageArea 1 2.6922e+08 7.0743e+11 20415  
## - X3SsnPorch 1 4.6455e+08 7.0762e+11 20415  
## - BsmtUnfSF 1 6.7014e+08 7.0783e+11 20415  
## - BsmtHalfBath 1 8.2949e+08 7.0799e+11 20416  
## - KitchenAbvGr 1 1.1688e+09 7.0833e+11 20416  
## - YearBuilt 1 1.2779e+09 7.0844e+11 20416  
## <none> 7.0716e+11 20416  
## - MoSold 1 1.5725e+09 7.0873e+11 20417  
## - BsmtCond 1 1.5959e+09 7.0875e+11 20417  
## - BsmtFinType2 1 1.7177e+09 7.0887e+11 20417  
## - LandSlope 1 1.7903e+09 7.0895e+11 20417  
## - BldgType 2 3.2332e+09 7.1039e+11 20417  
## - Utilities 1 1.8721e+09 7.0903e+11 20417  
## - Street 1 2.0155e+09 7.0917e+11 20417  
## - MSSubClass 1 2.0821e+09 7.0924e+11 20417  
## - LowQualFinSF 1 2.1932e+09 7.0935e+11 20417  
## - ScreenPorch 1 2.4154e+09 7.0957e+11 20418  
## - PoolArea 1 2.6040e+09 7.0976e+11 20418  
## - Exterior1st 5 8.9803e+09 7.1614e+11 20419  
## - Condition1 2 4.8502e+09 7.1201e+11 20419  
## - BsmtFinSF1 1 3.7714e+09 7.1093e+11 20420  
## - RoofStyle 2 5.3660e+09 7.1252e+11 20420  
## - Functional 1 4.4537e+09 7.1161e+11 20421  
## - Condition2 1 4.6944e+09 7.1185e+11 20421  
## - HalfBath 1 5.0334e+09 7.1219e+11 20421  
## - Fireplaces 1 5.1907e+09 7.1235e+11 20422  
## - TotRmsAbvGrd 1 5.6226e+09 7.1278e+11 20422  
## - FullBath 1 6.0913e+09 7.1325e+11 20423  
## - GarageCars 1 6.1483e+09 7.1331e+11 20423  
## - LandContour 1 7.8663e+09 7.1502e+11 20425  
## - HouseStyle 3 1.1685e+10 7.1884e+11 20427  
## - RoofMatl 1 8.8566e+09 7.1601e+11 20427  
## - BsmtFullBath 1 9.1259e+09 7.1628e+11 20427  
## - WoodDeckSF 1 9.3118e+09 7.1647e+11 20427  
## - LotConfig 3 1.2326e+10 7.1948e+11 20428  
## - BsmtFinType1 5 1.6286e+10 7.2344e+11 20429  
## - OverallCond 1 1.1949e+10 7.1911e+11 20431  
## - SaleType 2 1.3975e+10 7.2113e+11 20432  
## - LotArea 1 1.3650e+10 7.2081e+11 20433  
## - X1stFlrSF 1 1.6712e+10 7.2387e+11 20438  
## - BsmtQual 3 2.0420e+10 7.2758e+11 20439  
## - KitchenQual 3 2.5608e+10 7.3276e+11 20446  
## - BsmtExposure 3 2.7143e+10 7.3430e+11 20448  
## - OverallQual 1 3.4575e+10 7.4173e+11 20462  
## - X2ndFlrSF 1 4.0900e+10 7.4806e+11 20470  
## - Neighborhood 24 1.7204e+11 8.7920e+11 20584  
##   
## Step: AIC=20414.33  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + YearRemodAdd + RoofStyle + RoofMatl + Exterior1st +   
## MasVnrArea + ExterQual + ExterCond + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtFinSF2 + BsmtUnfSF + Heating + X1stFlrSF + X2ndFlrSF +   
## LowQualFinSF + BsmtFullBath + BsmtHalfBath + FullBath + HalfBath +   
## BedroomAbvGr + KitchenAbvGr + KitchenQual + TotRmsAbvGrd +   
## Functional + Fireplaces + GarageCars + GarageArea + WoodDeckSF +   
## OpenPorchSF + EnclosedPorch + X3SsnPorch + ScreenPorch +   
## PoolArea + MiscVal + MoSold + YrSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - MiscVal 1 3.5660e+06 7.0716e+11 20412  
## - BsmtFinSF2 1 1.4907e+07 7.0717e+11 20412  
## - YrSold 1 2.1605e+07 7.0718e+11 20412  
## - EnclosedPorch 1 4.4577e+07 7.0720e+11 20412  
## - YearRemodAdd 1 4.8515e+07 7.0721e+11 20412  
## - MSZoning 2 1.4843e+09 7.0864e+11 20412  
## - OpenPorchSF 1 8.9751e+07 7.0725e+11 20413  
## - MasVnrArea 1 1.1805e+08 7.0728e+11 20413  
## - Heating 1 1.2406e+08 7.0728e+11 20413  
## - BedroomAbvGr 1 1.4624e+08 7.0730e+11 20413  
## - ExterCond 2 1.5947e+09 7.0875e+11 20413  
## - ExterQual 2 1.6153e+09 7.0877e+11 20413  
## - GarageArea 1 2.6920e+08 7.0743e+11 20413  
## - X3SsnPorch 1 4.6454e+08 7.0762e+11 20413  
## - BsmtUnfSF 1 6.7020e+08 7.0783e+11 20413  
## - BsmtHalfBath 1 8.2995e+08 7.0799e+11 20414  
## - KitchenAbvGr 1 1.1787e+09 7.0834e+11 20414  
## - YearBuilt 1 1.3169e+09 7.0847e+11 20414  
## <none> 7.0716e+11 20414  
## - MoSold 1 1.5731e+09 7.0873e+11 20415  
## - BsmtCond 1 1.5994e+09 7.0876e+11 20415  
## - BsmtFinType2 1 1.7177e+09 7.0887e+11 20415  
## - LandSlope 1 1.7904e+09 7.0895e+11 20415  
## - BldgType 2 3.2337e+09 7.1039e+11 20415  
## - Utilities 1 1.8725e+09 7.0903e+11 20415  
## - Street 1 2.0423e+09 7.0920e+11 20415  
## - MSSubClass 1 2.0827e+09 7.0924e+11 20415  
## - LowQualFinSF 1 2.2120e+09 7.0937e+11 20415  
## - ScreenPorch 1 2.4262e+09 7.0958e+11 20416  
## - PoolArea 1 2.6059e+09 7.0976e+11 20416  
## - Exterior1st 5 8.9803e+09 7.1614e+11 20417  
## - Condition1 2 4.8530e+09 7.1201e+11 20417  
## - BsmtFinSF1 1 3.7724e+09 7.1093e+11 20418  
## - RoofStyle 2 5.3728e+09 7.1253e+11 20418  
## - Functional 1 4.4553e+09 7.1161e+11 20419  
## - Condition2 1 4.7099e+09 7.1187e+11 20419  
## - HalfBath 1 5.0406e+09 7.1220e+11 20419  
## - Fireplaces 1 5.2245e+09 7.1238e+11 20420  
## - TotRmsAbvGrd 1 5.6277e+09 7.1278e+11 20420  
## - FullBath 1 6.0935e+09 7.1325e+11 20421  
## - GarageCars 1 6.1538e+09 7.1331e+11 20421  
## - LandContour 1 7.8753e+09 7.1503e+11 20423  
## - HouseStyle 3 1.1690e+10 7.1885e+11 20425  
## - RoofMatl 1 8.8634e+09 7.1602e+11 20425  
## - BsmtFullBath 1 9.1280e+09 7.1629e+11 20425  
## - WoodDeckSF 1 9.3278e+09 7.1648e+11 20425  
## - LotConfig 3 1.2361e+10 7.1952e+11 20426  
## - BsmtFinType1 5 1.6288e+10 7.2345e+11 20427  
## - OverallCond 1 1.2296e+10 7.1945e+11 20429  
## - SaleType 2 1.3978e+10 7.2113e+11 20430  
## - LotArea 1 1.3816e+10 7.2097e+11 20432  
## - X1stFlrSF 1 1.6712e+10 7.2387e+11 20436  
## - BsmtQual 3 2.0429e+10 7.2759e+11 20437  
## - KitchenQual 3 2.5608e+10 7.3277e+11 20444  
## - BsmtExposure 3 2.7177e+10 7.3433e+11 20446  
## - OverallQual 1 3.4818e+10 7.4197e+11 20460  
## - X2ndFlrSF 1 4.0904e+10 7.4806e+11 20468  
## - Neighborhood 24 1.7209e+11 8.7925e+11 20582  
##   
## Step: AIC=20412.34  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + YearRemodAdd + RoofStyle + RoofMatl + Exterior1st +   
## MasVnrArea + ExterQual + ExterCond + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtFinSF2 + BsmtUnfSF + Heating + X1stFlrSF + X2ndFlrSF +   
## LowQualFinSF + BsmtFullBath + BsmtHalfBath + FullBath + HalfBath +   
## BedroomAbvGr + KitchenAbvGr + KitchenQual + TotRmsAbvGrd +   
## Functional + Fireplaces + GarageCars + GarageArea + WoodDeckSF +   
## OpenPorchSF + EnclosedPorch + X3SsnPorch + ScreenPorch +   
## PoolArea + MoSold + YrSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - BsmtFinSF2 1 1.4395e+07 7.0718e+11 20410  
## - YrSold 1 2.0582e+07 7.0718e+11 20410  
## - EnclosedPorch 1 4.5206e+07 7.0721e+11 20410  
## - YearRemodAdd 1 4.8836e+07 7.0721e+11 20410  
## - MSZoning 2 1.4854e+09 7.0865e+11 20410  
## - OpenPorchSF 1 9.1485e+07 7.0725e+11 20411  
## - MasVnrArea 1 1.1671e+08 7.0728e+11 20411  
## - Heating 1 1.2355e+08 7.0728e+11 20411  
## - BedroomAbvGr 1 1.4573e+08 7.0731e+11 20411  
## - ExterCond 2 1.5932e+09 7.0875e+11 20411  
## - ExterQual 2 1.6157e+09 7.0878e+11 20411  
## - GarageArea 1 2.7086e+08 7.0743e+11 20411  
## - X3SsnPorch 1 4.6989e+08 7.0763e+11 20411  
## - BsmtUnfSF 1 6.7427e+08 7.0784e+11 20411  
## - BsmtHalfBath 1 8.3022e+08 7.0799e+11 20412  
## - KitchenAbvGr 1 1.1788e+09 7.0834e+11 20412  
## - YearBuilt 1 1.3155e+09 7.0848e+11 20412  
## <none> 7.0716e+11 20412  
## - MoSold 1 1.5710e+09 7.0873e+11 20413  
## - BsmtCond 1 1.5990e+09 7.0876e+11 20413  
## - BsmtFinType2 1 1.7156e+09 7.0888e+11 20413  
## - LandSlope 1 1.7924e+09 7.0895e+11 20413  
## - BldgType 2 3.2365e+09 7.1040e+11 20413  
## - Utilities 1 1.8766e+09 7.0904e+11 20413  
## - Street 1 2.0388e+09 7.0920e+11 20413  
## - MSSubClass 1 2.0864e+09 7.0925e+11 20413  
## - LowQualFinSF 1 2.2091e+09 7.0937e+11 20413  
## - ScreenPorch 1 2.5031e+09 7.0966e+11 20414  
## - PoolArea 1 2.7180e+09 7.0988e+11 20414  
## - Exterior1st 5 8.9787e+09 7.1614e+11 20415  
## - Condition1 2 4.8501e+09 7.1201e+11 20415  
## - BsmtFinSF1 1 3.7737e+09 7.1093e+11 20416  
## - RoofStyle 2 5.3693e+09 7.1253e+11 20416  
## - Functional 1 4.4543e+09 7.1162e+11 20417  
## - Condition2 1 4.7064e+09 7.1187e+11 20417  
## - HalfBath 1 5.0383e+09 7.1220e+11 20417  
## - Fireplaces 1 5.2409e+09 7.1240e+11 20418  
## - TotRmsAbvGrd 1 5.6350e+09 7.1280e+11 20418  
## - FullBath 1 6.1065e+09 7.1327e+11 20419  
## - GarageCars 1 6.1507e+09 7.1331e+11 20419  
## - LandContour 1 7.8967e+09 7.1506e+11 20421  
## - HouseStyle 3 1.1706e+10 7.1887e+11 20423  
## - RoofMatl 1 8.8951e+09 7.1606e+11 20423  
## - BsmtFullBath 1 9.1464e+09 7.1631e+11 20423  
## - WoodDeckSF 1 9.3448e+09 7.1651e+11 20423  
## - LotConfig 3 1.2357e+10 7.1952e+11 20424  
## - BsmtFinType1 5 1.6287e+10 7.2345e+11 20425  
## - OverallCond 1 1.2293e+10 7.1945e+11 20427  
## - SaleType 2 1.3981e+10 7.2114e+11 20428  
## - LotArea 1 1.3883e+10 7.2104e+11 20430  
## - X1stFlrSF 1 1.6745e+10 7.2391e+11 20434  
## - BsmtQual 3 2.0425e+10 7.2759e+11 20435  
## - KitchenQual 3 2.5607e+10 7.3277e+11 20442  
## - BsmtExposure 3 2.7173e+10 7.3433e+11 20444  
## - OverallQual 1 3.4850e+10 7.4201e+11 20458  
## - X2ndFlrSF 1 4.0917e+10 7.4808e+11 20466  
## - Neighborhood 24 1.7219e+11 8.7935e+11 20580  
##   
## Step: AIC=20410.36  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + YearRemodAdd + RoofStyle + RoofMatl + Exterior1st +   
## MasVnrArea + ExterQual + ExterCond + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + Heating + X1stFlrSF + X2ndFlrSF + LowQualFinSF +   
## BsmtFullBath + BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr +   
## KitchenAbvGr + KitchenQual + TotRmsAbvGrd + Functional +   
## Fireplaces + GarageCars + GarageArea + WoodDeckSF + OpenPorchSF +   
## EnclosedPorch + X3SsnPorch + ScreenPorch + PoolArea + MoSold +   
## YrSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - YrSold 1 2.0213e+07 7.0720e+11 20408  
## - EnclosedPorch 1 4.3230e+07 7.0722e+11 20408  
## - YearRemodAdd 1 5.0524e+07 7.0723e+11 20408  
## - MSZoning 2 1.4962e+09 7.0867e+11 20409  
## - OpenPorchSF 1 9.5215e+07 7.0727e+11 20409  
## - Heating 1 1.2137e+08 7.0730e+11 20409  
## - MasVnrArea 1 1.2201e+08 7.0730e+11 20409  
## - BedroomAbvGr 1 1.4954e+08 7.0732e+11 20409  
## - ExterCond 2 1.5954e+09 7.0877e+11 20409  
## - ExterQual 2 1.6284e+09 7.0880e+11 20409  
## - GarageArea 1 2.7018e+08 7.0745e+11 20409  
## - X3SsnPorch 1 4.6854e+08 7.0764e+11 20409  
## - BsmtHalfBath 1 8.3321e+08 7.0801e+11 20410  
## - BsmtUnfSF 1 8.4342e+08 7.0802e+11 20410  
## - KitchenAbvGr 1 1.1883e+09 7.0836e+11 20410  
## - YearBuilt 1 1.3122e+09 7.0849e+11 20410  
## <none> 7.0718e+11 20410  
## - MoSold 1 1.5893e+09 7.0876e+11 20411  
## - BsmtCond 1 1.5969e+09 7.0877e+11 20411  
## - LandSlope 1 1.7781e+09 7.0895e+11 20411  
## - BldgType 2 3.2336e+09 7.1041e+11 20411  
## - Utilities 1 1.8915e+09 7.0907e+11 20411  
## - Street 1 2.0505e+09 7.0923e+11 20411  
## - MSSubClass 1 2.1106e+09 7.0929e+11 20411  
## - LowQualFinSF 1 2.2140e+09 7.0939e+11 20412  
## - ScreenPorch 1 2.5476e+09 7.0972e+11 20412  
## - PoolArea 1 2.7499e+09 7.0993e+11 20412  
## - BsmtFinType2 1 2.9312e+09 7.1011e+11 20413  
## - Exterior1st 5 9.0146e+09 7.1619e+11 20413  
## - Condition1 2 4.8776e+09 7.1205e+11 20413  
## - RoofStyle 2 5.4312e+09 7.1261e+11 20414  
## - Functional 1 4.5611e+09 7.1174e+11 20415  
## - Condition2 1 4.6937e+09 7.1187e+11 20415  
## - BsmtFinSF1 1 4.7680e+09 7.1194e+11 20415  
## - HalfBath 1 5.0649e+09 7.1224e+11 20415  
## - Fireplaces 1 5.2273e+09 7.1240e+11 20416  
## - TotRmsAbvGrd 1 5.6207e+09 7.1280e+11 20416  
## - FullBath 1 6.1146e+09 7.1329e+11 20417  
## - GarageCars 1 6.1389e+09 7.1331e+11 20417  
## - LandContour 1 7.8941e+09 7.1507e+11 20419  
## - HouseStyle 3 1.1694e+10 7.1887e+11 20421  
## - RoofMatl 1 8.9241e+09 7.1610e+11 20421  
## - WoodDeckSF 1 9.3427e+09 7.1652e+11 20421  
## - LotConfig 3 1.2353e+10 7.1953e+11 20422  
## - BsmtFullBath 1 9.5084e+09 7.1668e+11 20422  
## - BsmtFinType1 5 1.6471e+10 7.2365e+11 20423  
## - OverallCond 1 1.2281e+10 7.1946e+11 20425  
## - SaleType 2 1.3979e+10 7.2115e+11 20426  
## - LotArea 1 1.4001e+10 7.2118e+11 20428  
## - BsmtQual 3 2.0467e+10 7.2764e+11 20433  
## - X1stFlrSF 1 1.8595e+10 7.2577e+11 20434  
## - KitchenQual 3 2.5593e+10 7.3277e+11 20440  
## - BsmtExposure 3 2.7444e+10 7.3462e+11 20442  
## - OverallQual 1 3.4930e+10 7.4211e+11 20456  
## - X2ndFlrSF 1 4.0909e+10 7.4808e+11 20464  
## - Neighborhood 24 1.7280e+11 8.7997e+11 20579  
##   
## Step: AIC=20408.39  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + YearRemodAdd + RoofStyle + RoofMatl + Exterior1st +   
## MasVnrArea + ExterQual + ExterCond + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + Heating + X1stFlrSF + X2ndFlrSF + LowQualFinSF +   
## BsmtFullBath + BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr +   
## KitchenAbvGr + KitchenQual + TotRmsAbvGrd + Functional +   
## Fireplaces + GarageCars + GarageArea + WoodDeckSF + OpenPorchSF +   
## EnclosedPorch + X3SsnPorch + ScreenPorch + PoolArea + MoSold +   
## SaleType  
##   
## Df Sum of Sq RSS AIC  
## - EnclosedPorch 1 4.1508e+07 7.0724e+11 20406  
## - YearRemodAdd 1 4.7812e+07 7.0724e+11 20407  
## - MSZoning 2 1.5120e+09 7.0871e+11 20407  
## - OpenPorchSF 1 1.0086e+08 7.0730e+11 20407  
## - Heating 1 1.2120e+08 7.0732e+11 20407  
## - MasVnrArea 1 1.2233e+08 7.0732e+11 20407  
## - BedroomAbvGr 1 1.5050e+08 7.0735e+11 20407  
## - ExterQual 2 1.6104e+09 7.0881e+11 20407  
## - ExterCond 2 1.6166e+09 7.0881e+11 20407  
## - GarageArea 1 2.7098e+08 7.0747e+11 20407  
## - X3SsnPorch 1 4.6559e+08 7.0766e+11 20407  
## - BsmtHalfBath 1 8.4562e+08 7.0804e+11 20408  
## - BsmtUnfSF 1 8.5160e+08 7.0805e+11 20408  
## - KitchenAbvGr 1 1.2326e+09 7.0843e+11 20408  
## - YearBuilt 1 1.3124e+09 7.0851e+11 20408  
## <none> 7.0720e+11 20408  
## - MoSold 1 1.5694e+09 7.0876e+11 20409  
## - BsmtCond 1 1.5776e+09 7.0877e+11 20409  
## - LandSlope 1 1.7838e+09 7.0898e+11 20409  
## - BldgType 2 3.2324e+09 7.1043e+11 20409  
## - Utilities 1 1.8964e+09 7.0909e+11 20409  
## - Street 1 2.0698e+09 7.0927e+11 20409  
## - MSSubClass 1 2.1046e+09 7.0930e+11 20409  
## - LowQualFinSF 1 2.2155e+09 7.0941e+11 20410  
## - ScreenPorch 1 2.5455e+09 7.0974e+11 20410  
## - PoolArea 1 2.7735e+09 7.0997e+11 20410  
## - BsmtFinType2 1 2.9470e+09 7.1014e+11 20411  
## - Exterior1st 5 9.0206e+09 7.1622e+11 20411  
## - Condition1 2 4.8895e+09 7.1208e+11 20411  
## - RoofStyle 2 5.4344e+09 7.1263e+11 20412  
## - Functional 1 4.6530e+09 7.1185e+11 20413  
## - Condition2 1 4.6909e+09 7.1189e+11 20413  
## - BsmtFinSF1 1 4.7640e+09 7.1196e+11 20413  
## - HalfBath 1 5.0624e+09 7.1226e+11 20414  
## - Fireplaces 1 5.2348e+09 7.1243e+11 20414  
## - TotRmsAbvGrd 1 5.6806e+09 7.1288e+11 20414  
## - FullBath 1 6.1170e+09 7.1331e+11 20415  
## - GarageCars 1 6.1354e+09 7.1333e+11 20415  
## - LandContour 1 7.8826e+09 7.1508e+11 20417  
## - HouseStyle 3 1.1686e+10 7.1888e+11 20419  
## - RoofMatl 1 8.9184e+09 7.1611e+11 20419  
## - WoodDeckSF 1 9.3500e+09 7.1655e+11 20419  
## - LotConfig 3 1.2349e+10 7.1954e+11 20420  
## - BsmtFullBath 1 9.4901e+09 7.1669e+11 20420  
## - BsmtFinType1 5 1.6451e+10 7.2365e+11 20421  
## - OverallCond 1 1.2265e+10 7.1946e+11 20423  
## - SaleType 2 1.4364e+10 7.2156e+11 20424  
## - LotArea 1 1.3984e+10 7.2118e+11 20426  
## - BsmtQual 3 2.0452e+10 7.2765e+11 20431  
## - X1stFlrSF 1 1.8618e+10 7.2581e+11 20432  
## - KitchenQual 3 2.5575e+10 7.3277e+11 20438  
## - BsmtExposure 3 2.7513e+10 7.3471e+11 20440  
## - OverallQual 1 3.4944e+10 7.4214e+11 20454  
## - X2ndFlrSF 1 4.0892e+10 7.4809e+11 20462  
## - Neighborhood 24 1.7322e+11 8.8042e+11 20578  
##   
## Step: AIC=20406.44  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + YearRemodAdd + RoofStyle + RoofMatl + Exterior1st +   
## MasVnrArea + ExterQual + ExterCond + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + Heating + X1stFlrSF + X2ndFlrSF + LowQualFinSF +   
## BsmtFullBath + BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr +   
## KitchenAbvGr + KitchenQual + TotRmsAbvGrd + Functional +   
## Fireplaces + GarageCars + GarageArea + WoodDeckSF + OpenPorchSF +   
## X3SsnPorch + ScreenPorch + PoolArea + MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - YearRemodAdd 1 4.8521e+07 7.0729e+11 20405  
## - OpenPorchSF 1 9.4086e+07 7.0733e+11 20405  
## - MSZoning 2 1.5272e+09 7.0876e+11 20405  
## - MasVnrArea 1 1.2100e+08 7.0736e+11 20405  
## - Heating 1 1.2506e+08 7.0736e+11 20405  
## - BedroomAbvGr 1 1.4506e+08 7.0738e+11 20405  
## - ExterCond 2 1.6085e+09 7.0885e+11 20405  
## - ExterQual 2 1.6229e+09 7.0886e+11 20405  
## - GarageArea 1 2.7928e+08 7.0752e+11 20405  
## - X3SsnPorch 1 4.5943e+08 7.0770e+11 20405  
## - BsmtUnfSF 1 8.3774e+08 7.0807e+11 20406  
## - BsmtHalfBath 1 8.6440e+08 7.0810e+11 20406  
## - KitchenAbvGr 1 1.2567e+09 7.0849e+11 20406  
## - YearBuilt 1 1.2713e+09 7.0851e+11 20406  
## <none> 7.0724e+11 20406  
## - BsmtCond 1 1.5699e+09 7.0881e+11 20407  
## - MoSold 1 1.6065e+09 7.0884e+11 20407  
## - LandSlope 1 1.7734e+09 7.0901e+11 20407  
## - BldgType 2 3.2369e+09 7.1047e+11 20407  
## - Utilities 1 1.9062e+09 7.0914e+11 20407  
## - Street 1 2.0955e+09 7.0933e+11 20407  
## - MSSubClass 1 2.0972e+09 7.0933e+11 20407  
## - LowQualFinSF 1 2.3232e+09 7.0956e+11 20408  
## - ScreenPorch 1 2.5045e+09 7.0974e+11 20408  
## - PoolArea 1 2.7693e+09 7.1001e+11 20408  
## - BsmtFinType2 1 2.9264e+09 7.1016e+11 20409  
## - Exterior1st 5 9.0226e+09 7.1626e+11 20409  
## - Condition1 2 4.8790e+09 7.1212e+11 20409  
## - RoofStyle 2 5.4498e+09 7.1269e+11 20410  
## - Condition2 1 4.7324e+09 7.1197e+11 20411  
## - Functional 1 4.7348e+09 7.1197e+11 20411  
## - BsmtFinSF1 1 4.7630e+09 7.1200e+11 20411  
## - HalfBath 1 5.0450e+09 7.1228e+11 20412  
## - Fireplaces 1 5.2690e+09 7.1251e+11 20412  
## - TotRmsAbvGrd 1 5.6425e+09 7.1288e+11 20412  
## - GarageCars 1 6.1160e+09 7.1335e+11 20413  
## - FullBath 1 6.1474e+09 7.1338e+11 20413  
## - LandContour 1 7.8777e+09 7.1511e+11 20415  
## - HouseStyle 3 1.1665e+10 7.1890e+11 20417  
## - RoofMatl 1 9.0320e+09 7.1627e+11 20417  
## - WoodDeckSF 1 9.3140e+09 7.1655e+11 20417  
## - LotConfig 3 1.2361e+10 7.1960e+11 20418  
## - BsmtFullBath 1 9.6634e+09 7.1690e+11 20418  
## - BsmtFinType1 5 1.6413e+10 7.2365e+11 20419  
## - OverallCond 1 1.2226e+10 7.1946e+11 20421  
## - SaleType 2 1.4378e+10 7.2161e+11 20422  
## - LotArea 1 1.3978e+10 7.2121e+11 20424  
## - BsmtQual 3 2.0437e+10 7.2767e+11 20429  
## - X1stFlrSF 1 1.8647e+10 7.2588e+11 20430  
## - KitchenQual 3 2.5639e+10 7.3288e+11 20436  
## - BsmtExposure 3 2.7471e+10 7.3471e+11 20438  
## - OverallQual 1 3.5077e+10 7.4231e+11 20452  
## - X2ndFlrSF 1 4.0947e+10 7.4818e+11 20460  
## - Neighborhood 24 1.7399e+11 8.8123e+11 20576  
##   
## Step: AIC=20404.51  
## SalePrice ~ MSSubClass + MSZoning + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + RoofStyle + RoofMatl + Exterior1st + MasVnrArea +   
## ExterQual + ExterCond + BsmtQual + BsmtCond + BsmtExposure +   
## BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 + BsmtUnfSF + Heating +   
## X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + GarageArea +   
## WoodDeckSF + OpenPorchSF + X3SsnPorch + ScreenPorch + PoolArea +   
## MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - MSZoning 2 1.5108e+09 7.0880e+11 20403  
## - OpenPorchSF 1 8.9543e+07 7.0737e+11 20403  
## - Heating 1 1.2316e+08 7.0741e+11 20403  
## - MasVnrArea 1 1.2454e+08 7.0741e+11 20403  
## - BedroomAbvGr 1 1.6251e+08 7.0745e+11 20403  
## - ExterQual 2 1.5962e+09 7.0888e+11 20403  
## - ExterCond 2 1.6207e+09 7.0891e+11 20403  
## - GarageArea 1 2.6932e+08 7.0755e+11 20403  
## - X3SsnPorch 1 4.6150e+08 7.0775e+11 20403  
## - BsmtUnfSF 1 8.4699e+08 7.0813e+11 20404  
## - BsmtHalfBath 1 8.7537e+08 7.0816e+11 20404  
## - KitchenAbvGr 1 1.2576e+09 7.0854e+11 20404  
## <none> 7.0729e+11 20405  
## - YearBuilt 1 1.4373e+09 7.0872e+11 20405  
## - BsmtCond 1 1.5394e+09 7.0882e+11 20405  
## - MoSold 1 1.6168e+09 7.0890e+11 20405  
## - LandSlope 1 1.7646e+09 7.0905e+11 20405  
## - BldgType 2 3.2176e+09 7.1050e+11 20405  
## - Utilities 1 1.9440e+09 7.0923e+11 20405  
## - MSSubClass 1 2.0788e+09 7.0936e+11 20405  
## - Street 1 2.0942e+09 7.0938e+11 20405  
## - LowQualFinSF 1 2.3209e+09 7.0961e+11 20406  
## - ScreenPorch 1 2.5005e+09 7.0979e+11 20406  
## - PoolArea 1 2.7395e+09 7.1002e+11 20406  
## - BsmtFinType2 1 2.9138e+09 7.1020e+11 20407  
## - Exterior1st 5 9.1017e+09 7.1639e+11 20407  
## - Condition1 2 4.9043e+09 7.1219e+11 20407  
## - RoofStyle 2 5.4460e+09 7.1273e+11 20408  
## - Functional 1 4.7233e+09 7.1201e+11 20409  
## - Condition2 1 4.7287e+09 7.1201e+11 20409  
## - BsmtFinSF1 1 4.7906e+09 7.1208e+11 20409  
## - HalfBath 1 5.0867e+09 7.1237e+11 20410  
## - Fireplaces 1 5.2279e+09 7.1251e+11 20410  
## - TotRmsAbvGrd 1 5.7739e+09 7.1306e+11 20411  
## - GarageCars 1 6.1320e+09 7.1342e+11 20411  
## - FullBath 1 6.2132e+09 7.1350e+11 20411  
## - LandContour 1 7.8989e+09 7.1518e+11 20414  
## - HouseStyle 3 1.1776e+10 7.1906e+11 20415  
## - RoofMatl 1 9.0723e+09 7.1636e+11 20415  
## - WoodDeckSF 1 9.2820e+09 7.1657e+11 20415  
## - LotConfig 3 1.2318e+10 7.1960e+11 20416  
## - BsmtFullBath 1 9.7328e+09 7.1702e+11 20416  
## - BsmtFinType1 5 1.6368e+10 7.2365e+11 20417  
## - SaleType 2 1.4608e+10 7.2189e+11 20421  
## - LotArea 1 1.3940e+10 7.2123e+11 20422  
## - OverallCond 1 1.5468e+10 7.2275e+11 20424  
## - BsmtQual 3 2.0563e+10 7.2785e+11 20427  
## - X1stFlrSF 1 1.8735e+10 7.2602e+11 20428  
## - KitchenQual 3 2.5722e+10 7.3301e+11 20434  
## - BsmtExposure 3 2.7559e+10 7.3484e+11 20436  
## - OverallQual 1 3.5571e+10 7.4286e+11 20451  
## - X2ndFlrSF 1 4.1102e+10 7.4839e+11 20459  
## - Neighborhood 24 1.7422e+11 8.8150e+11 20575  
##   
## Step: AIC=20402.63  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + MasVnrArea + ExterQual +   
## ExterCond + BsmtQual + BsmtCond + BsmtExposure + BsmtFinType1 +   
## BsmtFinSF1 + BsmtFinType2 + BsmtUnfSF + Heating + X1stFlrSF +   
## X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + GarageArea +   
## WoodDeckSF + OpenPorchSF + X3SsnPorch + ScreenPorch + PoolArea +   
## MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - ExterQual 2 1.4035e+09 7.1020e+11 20401  
## - OpenPorchSF 1 4.8668e+07 7.0884e+11 20401  
## - MasVnrArea 1 1.0788e+08 7.0890e+11 20401  
## - Heating 1 1.3254e+08 7.0893e+11 20401  
## - BedroomAbvGr 1 1.7675e+08 7.0897e+11 20401  
## - GarageArea 1 2.0334e+08 7.0900e+11 20401  
## - ExterCond 2 1.7229e+09 7.1052e+11 20401  
## - X3SsnPorch 1 4.4109e+08 7.0924e+11 20401  
## - BsmtUnfSF 1 7.4989e+08 7.0955e+11 20402  
## - BsmtHalfBath 1 8.3868e+08 7.0963e+11 20402  
## - KitchenAbvGr 1 1.3965e+09 7.1019e+11 20403  
## <none> 7.0880e+11 20403  
## - BsmtCond 1 1.4785e+09 7.1027e+11 20403  
## - YearBuilt 1 1.5574e+09 7.1035e+11 20403  
## - LandSlope 1 1.7114e+09 7.1051e+11 20403  
## - MoSold 1 1.7851e+09 7.1058e+11 20403  
## - BldgType 2 3.3518e+09 7.1215e+11 20403  
## - Utilities 1 1.9219e+09 7.1072e+11 20403  
## - MSSubClass 1 2.0691e+09 7.1087e+11 20404  
## - LowQualFinSF 1 2.2851e+09 7.1108e+11 20404  
## - Street 1 2.2890e+09 7.1109e+11 20404  
## - ScreenPorch 1 2.5105e+09 7.1131e+11 20404  
## - PoolArea 1 2.7271e+09 7.1152e+11 20404  
## - BsmtFinType2 1 2.8563e+09 7.1165e+11 20405  
## - Exterior1st 5 8.9745e+09 7.1777e+11 20405  
## - Condition1 2 4.7075e+09 7.1350e+11 20405  
## - RoofStyle 2 5.1908e+09 7.1399e+11 20406  
## - Functional 1 4.5554e+09 7.1335e+11 20407  
## - Condition2 1 4.6717e+09 7.1347e+11 20407  
## - BsmtFinSF1 1 4.8328e+09 7.1363e+11 20407  
## - HalfBath 1 5.0481e+09 7.1384e+11 20408  
## - Fireplaces 1 5.6052e+09 7.1440e+11 20408  
## - TotRmsAbvGrd 1 6.0411e+09 7.1484e+11 20409  
## - FullBath 1 6.1375e+09 7.1493e+11 20409  
## - GarageCars 1 6.6150e+09 7.1541e+11 20410  
## - LandContour 1 8.0734e+09 7.1687e+11 20412  
## - HouseStyle 3 1.1954e+10 7.2075e+11 20413  
## - RoofMatl 1 9.0642e+09 7.1786e+11 20413  
## - WoodDeckSF 1 9.2298e+09 7.1803e+11 20413  
## - LotConfig 3 1.2153e+10 7.2095e+11 20414  
## - BsmtFullBath 1 9.8728e+09 7.1867e+11 20414  
## - BsmtFinType1 5 1.6091e+10 7.2489e+11 20415  
## - SaleType 2 1.4327e+10 7.2312e+11 20419  
## - LotArea 1 1.4099e+10 7.2290e+11 20420  
## - OverallCond 1 1.6272e+10 7.2507e+11 20423  
## - BsmtQual 3 2.1049e+10 7.2984e+11 20426  
## - X1stFlrSF 1 1.8859e+10 7.2766e+11 20427  
## - KitchenQual 3 2.5926e+10 7.3472e+11 20432  
## - BsmtExposure 3 2.7835e+10 7.3663e+11 20435  
## - OverallQual 1 3.6041e+10 7.4484e+11 20450  
## - X2ndFlrSF 1 4.0668e+10 7.4946e+11 20456  
## - Neighborhood 24 1.7688e+11 8.8568e+11 20575  
##   
## Step: AIC=20400.59  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + MasVnrArea + ExterCond +   
## BsmtQual + BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 +   
## BsmtFinType2 + BsmtUnfSF + Heating + X1stFlrSF + X2ndFlrSF +   
## LowQualFinSF + BsmtFullBath + BsmtHalfBath + FullBath + HalfBath +   
## BedroomAbvGr + KitchenAbvGr + KitchenQual + TotRmsAbvGrd +   
## Functional + Fireplaces + GarageCars + GarageArea + WoodDeckSF +   
## OpenPorchSF + X3SsnPorch + ScreenPorch + PoolArea + MoSold +   
## SaleType  
##   
## Df Sum of Sq RSS AIC  
## - MasVnrArea 1 4.1120e+07 7.1024e+11 20399  
## - OpenPorchSF 1 9.7393e+07 7.1030e+11 20399  
## - Heating 1 1.2315e+08 7.1032e+11 20399  
## - GarageArea 1 2.3498e+08 7.1043e+11 20399  
## - BedroomAbvGr 1 2.6177e+08 7.1046e+11 20399  
## - ExterCond 2 1.8594e+09 7.1206e+11 20399  
## - X3SsnPorch 1 4.7437e+08 7.1067e+11 20399  
## - BsmtUnfSF 1 5.4703e+08 7.1075e+11 20399  
## - BsmtHalfBath 1 7.6205e+08 7.1096e+11 20400  
## - BsmtCond 1 1.3367e+09 7.1154e+11 20401  
## <none> 7.1020e+11 20401  
## - KitchenAbvGr 1 1.4354e+09 7.1164e+11 20401  
## - Street 1 1.7763e+09 7.1198e+11 20401  
## - BldgType 2 3.2153e+09 7.1342e+11 20401  
## - MoSold 1 1.8046e+09 7.1200e+11 20401  
## - YearBuilt 1 1.8625e+09 7.1206e+11 20401  
## - Utilities 1 2.0101e+09 7.1221e+11 20401  
## - LandSlope 1 2.0424e+09 7.1224e+11 20401  
## - LowQualFinSF 1 2.1327e+09 7.1233e+11 20402  
## - MSSubClass 1 2.1336e+09 7.1233e+11 20402  
## - ScreenPorch 1 2.5775e+09 7.1278e+11 20402  
## - BsmtFinType2 1 2.6463e+09 7.1285e+11 20402  
## - PoolArea 1 2.8013e+09 7.1300e+11 20403  
## - Condition1 2 4.7338e+09 7.1493e+11 20403  
## - Exterior1st 5 9.1596e+09 7.1936e+11 20403  
## - RoofStyle 2 5.6337e+09 7.1583e+11 20404  
## - Functional 1 4.2257e+09 7.1443e+11 20405  
## - Condition2 1 4.4311e+09 7.1463e+11 20405  
## - BsmtFinSF1 1 4.4696e+09 7.1467e+11 20405  
## - HalfBath 1 5.1550e+09 7.1535e+11 20406  
## - Fireplaces 1 5.4564e+09 7.1566e+11 20406  
## - FullBath 1 6.1735e+09 7.1637e+11 20407  
## - GarageCars 1 6.4132e+09 7.1661e+11 20408  
## - TotRmsAbvGrd 1 6.6896e+09 7.1689e+11 20408  
## - LandContour 1 7.8296e+09 7.1803e+11 20410  
## - RoofMatl 1 9.0303e+09 7.1923e+11 20411  
## - WoodDeckSF 1 9.1278e+09 7.1933e+11 20411  
## - LotConfig 3 1.2395e+10 7.2260e+11 20412  
## - HouseStyle 3 1.2619e+10 7.2282e+11 20412  
## - BsmtFullBath 1 9.7143e+09 7.1991e+11 20412  
## - BsmtFinType1 5 1.6266e+10 7.2647e+11 20413  
## - LotArea 1 1.3552e+10 7.2375e+11 20417  
## - SaleType 2 1.5058e+10 7.2526e+11 20417  
## - OverallCond 1 1.7241e+10 7.2744e+11 20422  
## - X1stFlrSF 1 1.8137e+10 7.2834e+11 20424  
## - BsmtQual 3 2.2869e+10 7.3307e+11 20426  
## - BsmtExposure 3 2.8151e+10 7.3835e+11 20433  
## - KitchenQual 3 3.0338e+10 7.4054e+11 20436  
## - OverallQual 1 3.7473e+10 7.4767e+11 20450  
## - X2ndFlrSF 1 4.1506e+10 7.5171e+11 20455  
## - Neighborhood 24 1.8246e+11 8.9266e+11 20579  
##   
## Step: AIC=20398.64  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + ExterCond + BsmtQual +   
## BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + Heating + X1stFlrSF + X2ndFlrSF + LowQualFinSF +   
## BsmtFullBath + BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr +   
## KitchenAbvGr + KitchenQual + TotRmsAbvGrd + Functional +   
## Fireplaces + GarageCars + GarageArea + WoodDeckSF + OpenPorchSF +   
## X3SsnPorch + ScreenPorch + PoolArea + MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - OpenPorchSF 1 1.0694e+08 7.1035e+11 20397  
## - Heating 1 1.1994e+08 7.1036e+11 20397  
## - GarageArea 1 2.3470e+08 7.1048e+11 20397  
## - BedroomAbvGr 1 2.5984e+08 7.1050e+11 20397  
## - ExterCond 2 1.8578e+09 7.1210e+11 20397  
## - X3SsnPorch 1 4.6320e+08 7.1070e+11 20397  
## - BsmtUnfSF 1 5.7031e+08 7.1081e+11 20397  
## - BsmtHalfBath 1 7.7667e+08 7.1102e+11 20398  
## - BsmtCond 1 1.3262e+09 7.1157e+11 20399  
## - KitchenAbvGr 1 1.4261e+09 7.1167e+11 20399  
## <none> 7.1024e+11 20399  
## - Street 1 1.7654e+09 7.1201e+11 20399  
## - MoSold 1 1.7934e+09 7.1203e+11 20399  
## - YearBuilt 1 1.8345e+09 7.1208e+11 20399  
## - BldgType 2 3.2947e+09 7.1354e+11 20399  
## - LandSlope 1 2.0426e+09 7.1228e+11 20400  
## - Utilities 1 2.0851e+09 7.1233e+11 20400  
## - MSSubClass 1 2.1087e+09 7.1235e+11 20400  
## - LowQualFinSF 1 2.1105e+09 7.1235e+11 20400  
## - ScreenPorch 1 2.5551e+09 7.1280e+11 20400  
## - BsmtFinType2 1 2.6690e+09 7.1291e+11 20400  
## - PoolArea 1 2.9320e+09 7.1317e+11 20401  
## - Condition1 2 4.7650e+09 7.1501e+11 20401  
## - Exterior1st 5 9.1572e+09 7.1940e+11 20401  
## - RoofStyle 2 5.5956e+09 7.1584e+11 20402  
## - Functional 1 4.1870e+09 7.1443e+11 20403  
## - Condition2 1 4.4749e+09 7.1472e+11 20403  
## - BsmtFinSF1 1 4.6022e+09 7.1484e+11 20403  
## - HalfBath 1 5.1380e+09 7.1538e+11 20404  
## - Fireplaces 1 5.4153e+09 7.1566e+11 20404  
## - FullBath 1 6.1431e+09 7.1638e+11 20405  
## - GarageCars 1 6.3831e+09 7.1662e+11 20406  
## - TotRmsAbvGrd 1 6.6812e+09 7.1692e+11 20406  
## - LandContour 1 7.8155e+09 7.1806e+11 20408  
## - WoodDeckSF 1 9.1012e+09 7.1934e+11 20409  
## - RoofMatl 1 9.1630e+09 7.1940e+11 20409  
## - LotConfig 3 1.2386e+10 7.2263e+11 20410  
## - HouseStyle 3 1.2626e+10 7.2287e+11 20410  
## - BsmtFullBath 1 9.8002e+09 7.2004e+11 20410  
## - BsmtFinType1 5 1.6251e+10 7.2649e+11 20411  
## - SaleType 2 1.5030e+10 7.2527e+11 20415  
## - LotArea 1 1.3622e+10 7.2386e+11 20416  
## - OverallCond 1 1.7252e+10 7.2749e+11 20420  
## - X1stFlrSF 1 1.8096e+10 7.2834e+11 20422  
## - BsmtQual 3 2.2833e+10 7.3307e+11 20424  
## - BsmtExposure 3 2.8120e+10 7.3836e+11 20431  
## - KitchenQual 3 3.0412e+10 7.4065e+11 20434  
## - OverallQual 1 3.7494e+10 7.4774e+11 20448  
## - X2ndFlrSF 1 4.1557e+10 7.5180e+11 20453  
## - Neighborhood 24 1.8781e+11 8.9806e+11 20583  
##   
## Step: AIC=20396.79  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + ExterCond + BsmtQual +   
## BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + Heating + X1stFlrSF + X2ndFlrSF + LowQualFinSF +   
## BsmtFullBath + BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr +   
## KitchenAbvGr + KitchenQual + TotRmsAbvGrd + Functional +   
## Fireplaces + GarageCars + GarageArea + WoodDeckSF + X3SsnPorch +   
## ScreenPorch + PoolArea + MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - Heating 1 1.0806e+08 7.1046e+11 20395  
## - GarageArea 1 2.4060e+08 7.1059e+11 20395  
## - BedroomAbvGr 1 2.7598e+08 7.1062e+11 20395  
## - ExterCond 2 1.8729e+09 7.1222e+11 20395  
## - X3SsnPorch 1 4.5898e+08 7.1081e+11 20395  
## - BsmtUnfSF 1 5.2645e+08 7.1087e+11 20396  
## - BsmtHalfBath 1 7.6321e+08 7.1111e+11 20396  
## - BsmtCond 1 1.3499e+09 7.1170e+11 20397  
## <none> 7.1035e+11 20397  
## - KitchenAbvGr 1 1.4541e+09 7.1180e+11 20397  
## - MoSold 1 1.7156e+09 7.1206e+11 20397  
## - Street 1 1.7830e+09 7.1213e+11 20397  
## - BldgType 2 3.2438e+09 7.1359e+11 20397  
## - YearBuilt 1 1.8614e+09 7.1221e+11 20397  
## - LandSlope 1 2.0076e+09 7.1236e+11 20398  
## - Utilities 1 2.0334e+09 7.1238e+11 20398  
## - LowQualFinSF 1 2.0788e+09 7.1243e+11 20398  
## - MSSubClass 1 2.1143e+09 7.1246e+11 20398  
## - ScreenPorch 1 2.5873e+09 7.1294e+11 20398  
## - BsmtFinType2 1 2.6284e+09 7.1298e+11 20399  
## - PoolArea 1 2.9365e+09 7.1328e+11 20399  
## - Exterior1st 5 9.1001e+09 7.1945e+11 20399  
## - Condition1 2 4.7642e+09 7.1511e+11 20399  
## - RoofStyle 2 5.5165e+09 7.1586e+11 20401  
## - Functional 1 4.1603e+09 7.1451e+11 20401  
## - Condition2 1 4.3960e+09 7.1474e+11 20401  
## - BsmtFinSF1 1 4.5275e+09 7.1488e+11 20401  
## - HalfBath 1 5.3223e+09 7.1567e+11 20402  
## - Fireplaces 1 5.4825e+09 7.1583e+11 20402  
## - FullBath 1 6.1582e+09 7.1651e+11 20403  
## - GarageCars 1 6.3167e+09 7.1666e+11 20404  
## - TotRmsAbvGrd 1 6.7390e+09 7.1709e+11 20404  
## - LandContour 1 7.8300e+09 7.1818e+11 20406  
## - WoodDeckSF 1 9.0212e+09 7.1937e+11 20407  
## - RoofMatl 1 9.1311e+09 7.1948e+11 20408  
## - LotConfig 3 1.2375e+10 7.2272e+11 20408  
## - HouseStyle 3 1.2661e+10 7.2301e+11 20408  
## - BsmtFullBath 1 9.8883e+09 7.2024e+11 20409  
## - BsmtFinType1 5 1.6249e+10 7.2660e+11 20409  
## - SaleType 2 1.5057e+10 7.2541e+11 20414  
## - LotArea 1 1.3642e+10 7.2399e+11 20414  
## - OverallCond 1 1.7389e+10 7.2774e+11 20419  
## - X1stFlrSF 1 1.8161e+10 7.2851e+11 20420  
## - BsmtQual 3 2.3309e+10 7.3366e+11 20423  
## - BsmtExposure 3 2.8314e+10 7.3866e+11 20430  
## - KitchenQual 3 3.0369e+10 7.4072e+11 20432  
## - OverallQual 1 3.7461e+10 7.4781e+11 20446  
## - X2ndFlrSF 1 4.2129e+10 7.5248e+11 20452  
## - Neighborhood 24 1.8837e+11 8.9872e+11 20582  
##   
## Step: AIC=20394.94  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + ExterCond + BsmtQual +   
## BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath +   
## BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr +   
## KitchenQual + TotRmsAbvGrd + Functional + Fireplaces + GarageCars +   
## GarageArea + WoodDeckSF + X3SsnPorch + ScreenPorch + PoolArea +   
## MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - GarageArea 1 2.4746e+08 7.1070e+11 20393  
## - BedroomAbvGr 1 2.9371e+08 7.1075e+11 20393  
## - X3SsnPorch 1 4.6082e+08 7.1092e+11 20394  
## - ExterCond 2 1.9555e+09 7.1241e+11 20394  
## - BsmtUnfSF 1 5.2030e+08 7.1098e+11 20394  
## - BsmtHalfBath 1 7.4659e+08 7.1120e+11 20394  
## - BsmtCond 1 1.3659e+09 7.1182e+11 20395  
## - KitchenAbvGr 1 1.4044e+09 7.1186e+11 20395  
## <none> 7.1046e+11 20395  
## - Street 1 1.7384e+09 7.1219e+11 20395  
## - BldgType 2 3.1859e+09 7.1364e+11 20395  
## - MoSold 1 1.7489e+09 7.1220e+11 20395  
## - Utilities 1 2.0338e+09 7.1249e+11 20396  
## - LandSlope 1 2.0487e+09 7.1250e+11 20396  
## - LowQualFinSF 1 2.0707e+09 7.1253e+11 20396  
## - YearBuilt 1 2.0949e+09 7.1255e+11 20396  
## - MSSubClass 1 2.1947e+09 7.1265e+11 20396  
## - ScreenPorch 1 2.5503e+09 7.1301e+11 20397  
## - BsmtFinType2 1 2.6428e+09 7.1310e+11 20397  
## - PoolArea 1 2.9741e+09 7.1343e+11 20397  
## - Exterior1st 5 9.0754e+09 7.1953e+11 20398  
## - Condition1 2 4.8681e+09 7.1532e+11 20398  
## - RoofStyle 2 5.4445e+09 7.1590e+11 20399  
## - Functional 1 4.2246e+09 7.1468e+11 20399  
## - Condition2 1 4.3356e+09 7.1479e+11 20399  
## - BsmtFinSF1 1 4.5462e+09 7.1500e+11 20399  
## - HalfBath 1 5.2689e+09 7.1572e+11 20400  
## - Fireplaces 1 5.5871e+09 7.1604e+11 20401  
## - FullBath 1 6.0942e+09 7.1655e+11 20401  
## - GarageCars 1 6.2413e+09 7.1670e+11 20402  
## - TotRmsAbvGrd 1 6.8706e+09 7.1733e+11 20403  
## - LandContour 1 7.7462e+09 7.1820e+11 20404  
## - RoofMatl 1 9.1377e+09 7.1959e+11 20406  
## - WoodDeckSF 1 9.1680e+09 7.1962e+11 20406  
## - LotConfig 3 1.2356e+10 7.2281e+11 20406  
## - HouseStyle 3 1.2555e+10 7.2301e+11 20406  
## - BsmtFullBath 1 9.8497e+09 7.2031e+11 20407  
## - BsmtFinType1 5 1.6295e+10 7.2675e+11 20407  
## - SaleType 2 1.5029e+10 7.2549e+11 20412  
## - LotArea 1 1.3603e+10 7.2406e+11 20412  
## - OverallCond 1 1.8056e+10 7.2851e+11 20418  
## - X1stFlrSF 1 1.8151e+10 7.2861e+11 20418  
## - BsmtQual 3 2.3280e+10 7.3374e+11 20421  
## - BsmtExposure 3 2.8299e+10 7.3875e+11 20428  
## - KitchenQual 3 3.0305e+10 7.4076e+11 20430  
## - OverallQual 1 3.7416e+10 7.4787e+11 20444  
## - X2ndFlrSF 1 4.2050e+10 7.5251e+11 20450  
## - Neighborhood 24 1.8914e+11 8.9960e+11 20581  
##   
## Step: AIC=20393.29  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + ExterCond + BsmtQual +   
## BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath +   
## BsmtHalfBath + FullBath + HalfBath + BedroomAbvGr + KitchenAbvGr +   
## KitchenQual + TotRmsAbvGrd + Functional + Fireplaces + GarageCars +   
## WoodDeckSF + X3SsnPorch + ScreenPorch + PoolArea + MoSold +   
## SaleType  
##   
## Df Sum of Sq RSS AIC  
## - BedroomAbvGr 1 3.7372e+08 7.1108e+11 20392  
## - X3SsnPorch 1 4.6237e+08 7.1117e+11 20392  
## - BsmtUnfSF 1 5.0706e+08 7.1121e+11 20392  
## - ExterCond 2 1.9475e+09 7.1265e+11 20392  
## - BsmtHalfBath 1 7.7336e+08 7.1148e+11 20392  
## - BsmtCond 1 1.3934e+09 7.1210e+11 20393  
## - KitchenAbvGr 1 1.3995e+09 7.1210e+11 20393  
## <none> 7.1070e+11 20393  
## - MoSold 1 1.7382e+09 7.1244e+11 20394  
## - Street 1 1.7685e+09 7.1247e+11 20394  
## - BldgType 2 3.2975e+09 7.1400e+11 20394  
## - LowQualFinSF 1 2.0243e+09 7.1273e+11 20394  
## - LandSlope 1 2.0548e+09 7.1276e+11 20394  
## - Utilities 1 2.0592e+09 7.1276e+11 20394  
## - YearBuilt 1 2.2222e+09 7.1293e+11 20394  
## - MSSubClass 1 2.2410e+09 7.1294e+11 20394  
## - BsmtFinType2 1 2.5839e+09 7.1329e+11 20395  
## - ScreenPorch 1 2.6629e+09 7.1337e+11 20395  
## - PoolArea 1 2.9794e+09 7.1368e+11 20395  
## - Exterior1st 5 8.9370e+09 7.1964e+11 20396  
## - Condition1 2 4.7996e+09 7.1550e+11 20396  
## - RoofStyle 2 5.3286e+09 7.1603e+11 20397  
## - Functional 1 4.1619e+09 7.1487e+11 20397  
## - Condition2 1 4.2085e+09 7.1491e+11 20397  
## - BsmtFinSF1 1 4.3554e+09 7.1506e+11 20397  
## - HalfBath 1 5.1581e+09 7.1586e+11 20399  
## - Fireplaces 1 5.4339e+09 7.1614e+11 20399  
## - FullBath 1 6.1743e+09 7.1688e+11 20400  
## - TotRmsAbvGrd 1 6.8175e+09 7.1752e+11 20401  
## - LandContour 1 7.7409e+09 7.1844e+11 20402  
## - RoofMatl 1 9.0351e+09 7.1974e+11 20404  
## - WoodDeckSF 1 9.1873e+09 7.1989e+11 20404  
## - LotConfig 3 1.2461e+10 7.2316e+11 20405  
## - HouseStyle 3 1.2490e+10 7.2319e+11 20405  
## - BsmtFullBath 1 9.9729e+09 7.2068e+11 20405  
## - BsmtFinType1 5 1.6076e+10 7.2678e+11 20406  
## - SaleType 2 1.5177e+10 7.2588e+11 20410  
## - LotArea 1 1.3809e+10 7.2451e+11 20410  
## - OverallCond 1 1.8365e+10 7.2907e+11 20417  
## - X1stFlrSF 1 1.9152e+10 7.2986e+11 20418  
## - BsmtQual 3 2.3151e+10 7.3385e+11 20419  
## - BsmtExposure 3 2.8112e+10 7.3882e+11 20426  
## - GarageCars 1 2.6178e+10 7.3688e+11 20427  
## - KitchenQual 3 3.0252e+10 7.4095e+11 20429  
## - OverallQual 1 3.7465e+10 7.4817e+11 20442  
## - X2ndFlrSF 1 4.2880e+10 7.5358e+11 20449  
## - Neighborhood 24 1.9013e+11 9.0083e+11 20580  
##   
## Step: AIC=20391.81  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + ExterCond + BsmtQual +   
## BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath +   
## BsmtHalfBath + FullBath + HalfBath + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + WoodDeckSF +   
## X3SsnPorch + ScreenPorch + PoolArea + MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - ExterCond 2 1.9246e+09 7.1300e+11 20391  
## - X3SsnPorch 1 5.1101e+08 7.1159e+11 20391  
## - BsmtUnfSF 1 6.4286e+08 7.1172e+11 20391  
## - BsmtHalfBath 1 7.0151e+08 7.1178e+11 20391  
## - KitchenAbvGr 1 1.2741e+09 7.1235e+11 20392  
## - BsmtCond 1 1.4157e+09 7.1249e+11 20392  
## <none> 7.1108e+11 20392  
## - BldgType 2 3.1494e+09 7.1423e+11 20392  
## - Street 1 1.7588e+09 7.1284e+11 20392  
## - MoSold 1 1.9306e+09 7.1301e+11 20393  
## - Utilities 1 2.0376e+09 7.1311e+11 20393  
## - LandSlope 1 2.0429e+09 7.1312e+11 20393  
## - LowQualFinSF 1 2.0610e+09 7.1314e+11 20393  
## - YearBuilt 1 2.1532e+09 7.1323e+11 20393  
## - MSSubClass 1 2.1585e+09 7.1324e+11 20393  
## - ScreenPorch 1 2.6028e+09 7.1368e+11 20393  
## - BsmtFinType2 1 2.6892e+09 7.1377e+11 20394  
## - PoolArea 1 2.9346e+09 7.1401e+11 20394  
## - Condition1 2 5.0048e+09 7.1608e+11 20395  
## - RoofStyle 2 5.2448e+09 7.1632e+11 20395  
## - Exterior1st 5 9.5956e+09 7.2067e+11 20395  
## - Functional 1 4.0164e+09 7.1509e+11 20395  
## - Condition2 1 4.0371e+09 7.1511e+11 20395  
## - BsmtFinSF1 1 4.3751e+09 7.1545e+11 20396  
## - HalfBath 1 5.3719e+09 7.1645e+11 20397  
## - Fireplaces 1 5.6638e+09 7.1674e+11 20398  
## - FullBath 1 5.8699e+09 7.1695e+11 20398  
## - TotRmsAbvGrd 1 6.8633e+09 7.1794e+11 20399  
## - LandContour 1 7.7205e+09 7.1880e+11 20401  
## - RoofMatl 1 8.8232e+09 7.1990e+11 20402  
## - WoodDeckSF 1 9.3509e+09 7.2043e+11 20403  
## - LotConfig 3 1.2607e+10 7.2368e+11 20403  
## - HouseStyle 3 1.2730e+10 7.2381e+11 20403  
## - BsmtFullBath 1 9.9111e+09 7.2099e+11 20404  
## - BsmtFinType1 5 1.5940e+10 7.2702e+11 20404  
## - LotArea 1 1.3964e+10 7.2504e+11 20409  
## - SaleType 2 1.5539e+10 7.2662e+11 20409  
## - OverallCond 1 1.8377e+10 7.2945e+11 20415  
## - X1stFlrSF 1 1.9332e+10 7.3041e+11 20416  
## - BsmtQual 3 2.3736e+10 7.3481e+11 20418  
## - BsmtExposure 3 2.8213e+10 7.3929e+11 20424  
## - GarageCars 1 2.6524e+10 7.3760e+11 20426  
## - KitchenQual 3 3.1239e+10 7.4232e+11 20428  
## - OverallQual 1 3.7718e+10 7.4879e+11 20441  
## - X2ndFlrSF 1 4.2541e+10 7.5362e+11 20447  
## - Neighborhood 24 1.9115e+11 9.0223e+11 20580  
##   
## Step: AIC=20390.49  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath +   
## BsmtHalfBath + FullBath + HalfBath + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + WoodDeckSF +   
## X3SsnPorch + ScreenPorch + PoolArea + MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - X3SsnPorch 1 5.0933e+08 7.1351e+11 20389  
## - BsmtUnfSF 1 5.6041e+08 7.1356e+11 20389  
## - BsmtHalfBath 1 6.0409e+08 7.1361e+11 20389  
## - KitchenAbvGr 1 1.3929e+09 7.1439e+11 20390  
## <none> 7.1300e+11 20391  
## - BldgType 2 3.2493e+09 7.1625e+11 20391  
## - BsmtCond 1 1.8636e+09 7.1487e+11 20391  
## - MoSold 1 1.8945e+09 7.1490e+11 20391  
## - Utilities 1 1.9678e+09 7.1497e+11 20391  
## - YearBuilt 1 2.0205e+09 7.1502e+11 20391  
## - LowQualFinSF 1 2.0887e+09 7.1509e+11 20391  
## - Street 1 2.1122e+09 7.1511e+11 20391  
## - MSSubClass 1 2.1501e+09 7.1515e+11 20392  
## - ScreenPorch 1 2.4433e+09 7.1544e+11 20392  
## - LandSlope 1 2.5469e+09 7.1555e+11 20392  
## - BsmtFinType2 1 2.5543e+09 7.1556e+11 20392  
## - PoolArea 1 2.8917e+09 7.1589e+11 20393  
## - Exterior1st 5 9.1218e+09 7.2212e+11 20393  
## - Condition1 2 5.0106e+09 7.1801e+11 20393  
## - Functional 1 3.6809e+09 7.1668e+11 20394  
## - Condition2 1 3.9186e+09 7.1692e+11 20394  
## - RoofStyle 2 5.4999e+09 7.1850e+11 20394  
## - BsmtFinSF1 1 4.2052e+09 7.1721e+11 20394  
## - HalfBath 1 5.3556e+09 7.1836e+11 20396  
## - FullBath 1 5.5966e+09 7.1860e+11 20396  
## - Fireplaces 1 5.7256e+09 7.1873e+11 20396  
## - TotRmsAbvGrd 1 6.9017e+09 7.1990e+11 20398  
## - LandContour 1 7.7114e+09 7.2071e+11 20399  
## - WoodDeckSF 1 8.9906e+09 7.2199e+11 20401  
## - LotConfig 3 1.2138e+10 7.2514e+11 20401  
## - RoofMatl 1 9.3506e+09 7.2235e+11 20401  
## - BsmtFinType1 5 1.5575e+10 7.2858e+11 20402  
## - BsmtFullBath 1 9.7336e+09 7.2274e+11 20402  
## - HouseStyle 3 1.2710e+10 7.2571e+11 20402  
## - SaleType 2 1.5718e+10 7.2872e+11 20408  
## - LotArea 1 1.4336e+10 7.2734e+11 20408  
## - OverallCond 1 1.6473e+10 7.2947e+11 20411  
## - X1stFlrSF 1 1.8982e+10 7.3198e+11 20415  
## - BsmtQual 3 2.4079e+10 7.3708e+11 20417  
## - BsmtExposure 3 2.7970e+10 7.4097e+11 20423  
## - GarageCars 1 2.6711e+10 7.3971e+11 20425  
## - KitchenQual 3 3.1473e+10 7.4447e+11 20427  
## - OverallQual 1 3.8336e+10 7.5134e+11 20440  
## - X2ndFlrSF 1 4.2667e+10 7.5567e+11 20446  
## - Neighborhood 24 1.9029e+11 9.0329e+11 20577  
##   
## Step: AIC=20389.2  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## BsmtUnfSF + X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath +   
## BsmtHalfBath + FullBath + HalfBath + KitchenAbvGr + KitchenQual +   
## TotRmsAbvGrd + Functional + Fireplaces + GarageCars + WoodDeckSF +   
## ScreenPorch + PoolArea + MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - BsmtUnfSF 1 5.8087e+08 7.1409e+11 20388  
## - BsmtHalfBath 1 6.0160e+08 7.1411e+11 20388  
## - KitchenAbvGr 1 1.3834e+09 7.1489e+11 20389  
## <none> 7.1351e+11 20389  
## - BldgType 2 3.2212e+09 7.1673e+11 20390  
## - MoSold 1 1.8773e+09 7.1539e+11 20390  
## - BsmtCond 1 1.8809e+09 7.1539e+11 20390  
## - Utilities 1 1.9413e+09 7.1545e+11 20390  
## - LowQualFinSF 1 2.0694e+09 7.1558e+11 20390  
## - YearBuilt 1 2.0729e+09 7.1558e+11 20390  
## - Street 1 2.1040e+09 7.1561e+11 20390  
## - MSSubClass 1 2.1525e+09 7.1566e+11 20390  
## - ScreenPorch 1 2.3422e+09 7.1585e+11 20390  
## - LandSlope 1 2.4759e+09 7.1599e+11 20391  
## - BsmtFinType2 1 2.6751e+09 7.1619e+11 20391  
## - PoolArea 1 2.8614e+09 7.1637e+11 20391  
## - Exterior1st 5 8.9834e+09 7.2249e+11 20392  
## - Condition1 2 4.9277e+09 7.1844e+11 20392  
## - Functional 1 3.7665e+09 7.1728e+11 20392  
## - Condition2 1 3.9581e+09 7.1747e+11 20393  
## - RoofStyle 2 5.5745e+09 7.1909e+11 20393  
## - BsmtFinSF1 1 4.3546e+09 7.1787e+11 20393  
## - HalfBath 1 5.3936e+09 7.1890e+11 20395  
## - FullBath 1 5.7178e+09 7.1923e+11 20395  
## - Fireplaces 1 5.8646e+09 7.1938e+11 20395  
## - TotRmsAbvGrd 1 6.7648e+09 7.2028e+11 20397  
## - LandContour 1 7.5270e+09 7.2104e+11 20398  
## - WoodDeckSF 1 8.8083e+09 7.2232e+11 20399  
## - LotConfig 3 1.2026e+10 7.2554e+11 20400  
## - RoofMatl 1 9.3252e+09 7.2284e+11 20400  
## - BsmtFullBath 1 9.7156e+09 7.2323e+11 20401  
## - HouseStyle 3 1.2681e+10 7.2619e+11 20401  
## - BsmtFinType1 5 1.6220e+10 7.2973e+11 20402  
## - SaleType 2 1.5722e+10 7.2923e+11 20407  
## - LotArea 1 1.4414e+10 7.2793e+11 20407  
## - OverallCond 1 1.6495e+10 7.3001e+11 20410  
## - X1stFlrSF 1 1.9303e+10 7.3281e+11 20414  
## - BsmtQual 3 2.3910e+10 7.3742e+11 20416  
## - BsmtExposure 3 2.7765e+10 7.4128e+11 20421  
## - GarageCars 1 2.6939e+10 7.4045e+11 20424  
## - KitchenQual 3 3.1327e+10 7.4484e+11 20426  
## - OverallQual 1 3.8215e+10 7.5173e+11 20439  
## - X2ndFlrSF 1 4.2832e+10 7.5634e+11 20445  
## - Neighborhood 24 1.9006e+11 9.0357e+11 20575  
##   
## Step: AIC=20388  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath + BsmtHalfBath +   
## FullBath + HalfBath + KitchenAbvGr + KitchenQual + TotRmsAbvGrd +   
## Functional + Fireplaces + GarageCars + WoodDeckSF + ScreenPorch +   
## PoolArea + MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## - BsmtHalfBath 1 5.8025e+08 7.1467e+11 20387  
## - KitchenAbvGr 1 1.3766e+09 7.1547e+11 20388  
## <none> 7.1409e+11 20388  
## - BldgType 2 3.1557e+09 7.1725e+11 20388  
## - MoSold 1 1.7500e+09 7.1584e+11 20388  
## - Utilities 1 1.8791e+09 7.1597e+11 20389  
## - BsmtCond 1 1.9622e+09 7.1605e+11 20389  
## - YearBuilt 1 2.0589e+09 7.1615e+11 20389  
## - Street 1 2.0903e+09 7.1618e+11 20389  
## - LowQualFinSF 1 2.1015e+09 7.1619e+11 20389  
## - MSSubClass 1 2.1133e+09 7.1621e+11 20389  
## - BsmtFinType2 1 2.1176e+09 7.1621e+11 20389  
## - ScreenPorch 1 2.2696e+09 7.1636e+11 20389  
## - LandSlope 1 2.5978e+09 7.1669e+11 20390  
## - PoolArea 1 2.7192e+09 7.1681e+11 20390  
## - Exterior1st 5 9.0148e+09 7.2311e+11 20390  
## - Condition1 2 4.7850e+09 7.1888e+11 20391  
## - Functional 1 3.4847e+09 7.1758e+11 20391  
## - Condition2 1 4.0187e+09 7.1811e+11 20392  
## - BsmtFinSF1 1 4.3107e+09 7.1840e+11 20392  
## - RoofStyle 2 5.9995e+09 7.2009e+11 20392  
## - HalfBath 1 5.4317e+09 7.1952e+11 20394  
## - FullBath 1 5.7340e+09 7.1983e+11 20394  
## - Fireplaces 1 6.0761e+09 7.2017e+11 20394  
## - TotRmsAbvGrd 1 6.8465e+09 7.2094e+11 20396  
## - LandContour 1 7.5094e+09 7.2160e+11 20396  
## - WoodDeckSF 1 8.8155e+09 7.2291e+11 20398  
## - LotConfig 3 1.2029e+10 7.2612e+11 20399  
## - RoofMatl 1 9.2956e+09 7.2339e+11 20399  
## - BsmtFullBath 1 9.9279e+09 7.2402e+11 20400  
## - HouseStyle 3 1.2974e+10 7.2707e+11 20400  
## - BsmtFinType1 5 1.7037e+10 7.3113e+11 20401  
## - SaleType 2 1.5374e+10 7.2947e+11 20405  
## - LotArea 1 1.4284e+10 7.2838e+11 20406  
## - OverallCond 1 1.7437e+10 7.3153e+11 20410  
## - BsmtQual 3 2.4081e+10 7.3817e+11 20415  
## - X1stFlrSF 1 2.1225e+10 7.3532e+11 20415  
## - BsmtExposure 3 2.7615e+10 7.4171e+11 20420  
## - GarageCars 1 2.6965e+10 7.4106e+11 20423  
## - KitchenQual 3 3.1165e+10 7.4526e+11 20424  
## - OverallQual 1 3.7654e+10 7.5175e+11 20437  
## - X2ndFlrSF 1 4.3515e+10 7.5761e+11 20445  
## - Neighborhood 24 1.8976e+11 9.0385e+11 20574  
##   
## Step: AIC=20386.81  
## SalePrice ~ MSSubClass + LotArea + Street + LandContour + Utilities +   
## LotConfig + LandSlope + Neighborhood + Condition1 + Condition2 +   
## BldgType + HouseStyle + OverallQual + OverallCond + YearBuilt +   
## RoofStyle + RoofMatl + Exterior1st + BsmtQual + BsmtCond +   
## BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath + FullBath +   
## HalfBath + KitchenAbvGr + KitchenQual + TotRmsAbvGrd + Functional +   
## Fireplaces + GarageCars + WoodDeckSF + ScreenPorch + PoolArea +   
## MoSold + SaleType  
##   
## Df Sum of Sq RSS AIC  
## <none> 7.1467e+11 20387  
## - KitchenAbvGr 1 1.4477e+09 7.1612e+11 20387  
## - MoSold 1 1.6301e+09 7.1630e+11 20387  
## - BldgType 2 3.1228e+09 7.1779e+11 20387  
## - Utilities 1 1.7130e+09 7.1639e+11 20387  
## - BsmtCond 1 1.7554e+09 7.1643e+11 20387  
## - BsmtFinType2 1 1.8708e+09 7.1654e+11 20387  
## - YearBuilt 1 2.0543e+09 7.1673e+11 20388  
## - Street 1 2.1163e+09 7.1679e+11 20388  
## - LowQualFinSF 1 2.1785e+09 7.1685e+11 20388  
## - ScreenPorch 1 2.2387e+09 7.1691e+11 20388  
## - MSSubClass 1 2.2823e+09 7.1695e+11 20388  
## - LandSlope 1 2.5566e+09 7.1723e+11 20388  
## - PoolArea 1 2.6036e+09 7.1728e+11 20388  
## - Exterior1st 5 9.1221e+09 7.2379e+11 20389  
## - Functional 1 3.4117e+09 7.1808e+11 20390  
## - Condition1 2 4.9604e+09 7.1963e+11 20390  
## - BsmtFinSF1 1 3.9442e+09 7.1862e+11 20390  
## - Condition2 1 4.0659e+09 7.1874e+11 20390  
## - RoofStyle 2 6.1817e+09 7.2085e+11 20391  
## - HalfBath 1 5.3010e+09 7.1997e+11 20392  
## - FullBath 1 5.4987e+09 7.2017e+11 20392  
## - Fireplaces 1 6.0438e+09 7.2072e+11 20393  
## - TotRmsAbvGrd 1 7.0166e+09 7.2169e+11 20395  
## - LandContour 1 7.7036e+09 7.2238e+11 20395  
## - WoodDeckSF 1 8.8947e+09 7.2357e+11 20397  
## - LotConfig 3 1.2015e+10 7.2669e+11 20397  
## - RoofMatl 1 9.0967e+09 7.2377e+11 20397  
## - BsmtFullBath 1 9.4178e+09 7.2409e+11 20398  
## - HouseStyle 3 1.2940e+10 7.2761e+11 20399  
## - BsmtFinType1 5 1.7704e+10 7.3238e+11 20401  
## - SaleType 2 1.5305e+10 7.2998e+11 20404  
## - LotArea 1 1.4293e+10 7.2897e+11 20404  
## - OverallCond 1 1.8131e+10 7.3280e+11 20410  
## - BsmtQual 3 2.3916e+10 7.3859e+11 20413  
## - X1stFlrSF 1 2.1106e+10 7.3578e+11 20414  
## - BsmtExposure 3 2.8182e+10 7.4285e+11 20419  
## - GarageCars 1 2.6886e+10 7.4156e+11 20421  
## - KitchenQual 3 3.1267e+10 7.4594e+11 20423  
## - OverallQual 1 3.7361e+10 7.5203e+11 20435  
## - X2ndFlrSF 1 4.3546e+10 7.5822e+11 20443  
## - Neighborhood 24 1.8921e+11 9.0389e+11 20572

summary(HT\_LM\_Final)

##   
## Call:  
## lm(formula = SalePrice ~ MSSubClass + LotArea + Street + LandContour +   
## Utilities + LotConfig + LandSlope + Neighborhood + Condition1 +   
## Condition2 + BldgType + HouseStyle + OverallQual + OverallCond +   
## YearBuilt + RoofStyle + RoofMatl + Exterior1st + BsmtQual +   
## BsmtCond + BsmtExposure + BsmtFinType1 + BsmtFinSF1 + BsmtFinType2 +   
## X1stFlrSF + X2ndFlrSF + LowQualFinSF + BsmtFullBath + FullBath +   
## HalfBath + KitchenAbvGr + KitchenQual + TotRmsAbvGrd + Functional +   
## Fireplaces + GarageCars + WoodDeckSF + ScreenPorch + PoolArea +   
## MoSold + SaleType, data = HT\_Build)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -272899 -11717 -42 11228 235349   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) -2.638e+05 1.781e+05 -1.481 0.138938   
## MSSubClass -1.268e+02 7.464e+01 -1.699 0.089648 .   
## LotArea 4.749e-01 1.117e-01 4.252 2.34e-05 \*\*\*  
## StreetPave 2.646e+04 1.617e+04 1.636 0.102163   
## LandContourOthers -1.191e+04 3.816e+03 -3.122 0.001856 \*\*   
## UtilitiesOthers -4.565e+04 3.101e+04 -1.472 0.141372   
## LotConfigCulDSac 1.170e+04 4.704e+03 2.488 0.013024 \*   
## LotConfigInside -1.130e+03 2.464e+03 -0.458 0.646783   
## LotConfigOthers -1.244e+04 5.341e+03 -2.329 0.020055 \*   
## LandSlopeOthers 1.012e+04 5.628e+03 1.798 0.072464 .   
## NeighborhoodBlueste -1.366e+04 2.994e+04 -0.456 0.648421   
## NeighborhoodBrDale -2.122e+03 1.372e+04 -0.155 0.877158   
## NeighborhoodBrkSide 2.358e+02 1.201e+04 0.020 0.984339   
## NeighborhoodClearCr 5.466e+03 1.312e+04 0.416 0.677174   
## NeighborhoodCollgCr -3.718e+03 9.997e+03 -0.372 0.710049   
## NeighborhoodCrawfor 1.874e+04 1.189e+04 1.576 0.115470   
## NeighborhoodEdwards -2.376e+04 1.098e+04 -2.164 0.030718 \*   
## NeighborhoodGilbert -9.706e+03 1.071e+04 -0.906 0.365141   
## NeighborhoodIDOTRR -1.633e+04 1.268e+04 -1.288 0.198097   
## NeighborhoodMeadowV -7.596e+03 1.539e+04 -0.494 0.621702   
## NeighborhoodMitchel -1.270e+04 1.137e+04 -1.116 0.264567   
## NeighborhoodNAmes -1.091e+04 1.077e+04 -1.013 0.311113   
## NeighborhoodNoRidge 5.059e+04 1.157e+04 4.374 1.36e-05 \*\*\*  
## NeighborhoodNPkVill -6.223e+03 1.643e+04 -0.379 0.704991   
## NeighborhoodNridgHt 3.645e+04 1.020e+04 3.573 0.000372 \*\*\*  
## NeighborhoodNWAmes -1.209e+04 1.092e+04 -1.107 0.268564   
## NeighborhoodOldTown -1.839e+04 1.176e+04 -1.564 0.118119   
## NeighborhoodSawyer -1.228e+04 1.121e+04 -1.096 0.273322   
## NeighborhoodSawyerW -3.088e+03 1.096e+04 -0.282 0.778170   
## NeighborhoodSomerst 1.362e+04 1.016e+04 1.341 0.180271   
## NeighborhoodStoneBr 6.054e+04 1.139e+04 5.317 1.33e-07 \*\*\*  
## NeighborhoodSWISU -8.371e+03 1.371e+04 -0.611 0.541654   
## NeighborhoodTimber -1.103e+02 1.111e+04 -0.010 0.992085   
## NeighborhoodVeenker 3.001e+04 1.401e+04 2.142 0.032426 \*   
## Condition1Norm 8.625e+03 4.350e+03 1.983 0.047719 \*   
## Condition1Others 2.475e+03 5.235e+03 0.473 0.636511   
## Condition2Others -2.334e+04 1.029e+04 -2.268 0.023576 \*   
## BldgTypeOthers -2.765e+03 8.453e+03 -0.327 0.743651   
## BldgTypeTwnhsE -1.354e+04 8.660e+03 -1.563 0.118402   
## HouseStyle1Story 1.278e+04 5.020e+03 2.546 0.011056 \*   
## HouseStyle2Story -1.127e+04 4.419e+03 -2.551 0.010905 \*   
## HouseStyleOthers 4.493e+03 5.177e+03 0.868 0.385665   
## OverallQual 9.348e+03 1.360e+03 6.874 1.16e-11 \*\*\*  
## OverallCond 4.819e+03 1.006e+03 4.789 1.96e-06 \*\*\*  
## YearBuilt 1.408e+02 8.734e+01 1.612 0.107312   
## RoofStyleHip 4.363e+03 2.633e+03 1.657 0.097839 .   
## RoofStyleOthers 1.608e+04 6.983e+03 2.303 0.021489 \*   
## RoofMatlOthers -3.024e+04 8.914e+03 -3.392 0.000724 \*\*\*  
## Exterior1stMetalSd 9.099e+03 3.768e+03 2.415 0.015951 \*   
## Exterior1stOthers 8.806e+03 4.114e+03 2.141 0.032568 \*   
## Exterior1stPlywood 9.012e+03 4.647e+03 1.939 0.052754 .   
## Exterior1stVinylSd 1.006e+04 3.382e+03 2.975 0.003003 \*\*   
## Exterior1stWd Sdng 4.601e+03 3.889e+03 1.183 0.237164   
## BsmtQualGd -2.509e+04 4.666e+03 -5.377 9.63e-08 \*\*\*  
## BsmtQualOthers -2.846e+04 8.364e+03 -3.403 0.000695 \*\*\*  
## BsmtQualTA -2.862e+04 5.719e+03 -5.005 6.72e-07 \*\*\*  
## BsmtCondTA 5.522e+03 3.706e+03 1.490 0.136546   
## BsmtExposureGd 1.745e+04 4.358e+03 4.004 6.74e-05 \*\*\*  
## BsmtExposureMn -5.338e+03 4.210e+03 -1.268 0.205128   
## BsmtExposureNo -7.021e+03 3.114e+03 -2.254 0.024413 \*   
## BsmtFinType1BLQ 1.721e+03 3.899e+03 0.441 0.658998   
## BsmtFinType1GLQ 4.199e+03 3.625e+03 1.158 0.246998   
## BsmtFinType1LwQ -1.095e+03 5.046e+03 -0.217 0.828206   
## BsmtFinType1Rec -1.846e+03 4.308e+03 -0.429 0.668378   
## BsmtFinType1Unf -1.255e+04 4.068e+03 -3.085 0.002096 \*\*   
## BsmtFinSF1 -8.469e+00 3.791e+00 -2.234 0.025752 \*   
## BsmtFinType2Unf 5.467e+03 3.554e+03 1.538 0.124327   
## X1stFlrSF 2.866e+01 5.546e+00 5.167 2.93e-07 \*\*\*  
## X2ndFlrSF 4.860e+01 6.549e+00 7.422 2.67e-13 \*\*\*  
## LowQualFinSF -4.537e+01 2.733e+01 -1.660 0.097263 .   
## BsmtFullBath 8.802e+03 2.550e+03 3.451 0.000583 \*\*\*  
## FullBath 8.026e+03 3.043e+03 2.637 0.008500 \*\*   
## HalfBath 7.284e+03 2.813e+03 2.589 0.009767 \*\*   
## KitchenAbvGr -8.994e+03 6.646e+03 -1.353 0.176320   
## KitchenQualGd -2.914e+04 4.653e+03 -6.263 5.85e-10 \*\*\*  
## KitchenQualOthers -2.620e+04 8.042e+03 -3.258 0.001165 \*\*   
## KitchenQualTA -2.849e+04 5.191e+03 -5.488 5.28e-08 \*\*\*  
## TotRmsAbvGrd 3.509e+03 1.178e+03 2.979 0.002968 \*\*   
## FunctionalTyp 8.707e+03 4.191e+03 2.077 0.038047 \*   
## Fireplaces 5.125e+03 1.854e+03 2.765 0.005809 \*\*   
## GarageCars 1.040e+04 1.784e+03 5.832 7.63e-09 \*\*\*  
## WoodDeckSF 2.787e+01 8.309e+00 3.354 0.000829 \*\*\*  
## ScreenPorch 3.198e+01 1.900e+01 1.683 0.092762 .   
## PoolArea 4.445e+01 2.449e+01 1.815 0.069894 .   
## MoSold -4.992e+02 3.477e+02 -1.436 0.151360   
## SaleTypeOthers -1.689e+04 5.847e+03 -2.889 0.003957 \*\*   
## SaleTypeWD -1.760e+04 4.000e+03 -4.400 1.21e-05 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 28120 on 904 degrees of freedom  
## Multiple R-squared: 0.8813, Adjusted R-squared: 0.87   
## F-statistic: 78.06 on 86 and 904 DF, p-value: < 2.2e-16