Stepwise Selection Results | 2 Interaction Limit 5 fold CV

The GLMSELECT Procedure

Data Set	WORK.WORKING
Dependent Variable	SalePrice
Selection Method	Stepwise
Select Criterion	Significance Level
Stop Criterion	Significance Level
Choose Criterion	Cross Validation
Entry Significance Level (SLE)	0.15
Stay Significance Level (SLS)	0.15
Cross Validation Method	Split
Cross Validation Fold	5
Effect Hierarchy Enforced	Single

Number of Observations Read	2919
Number of Observations Used	2919
Number of Observations Used for Training	1460
Number of Observations Used for Testing	1459

Class Level Information

Class	Levels	Values
Neighborhood	25	Blmngtn Blueste BrDale BrkSide ClearCr CollgCr Crawfor Edwards Gilbert IDOTRR MeadowV Mitchel NPkVill NWAmes NoRidge NridgHt OldTown SWISU Sawyer SawyerW Somerst StoneBr Timber Veenker NAmes
OverallQual	10	1 2 3 4 5 6 7 8 9 10
OverallCond	9	1 2 3 4 5 6 7 8 9
MSZoning	6	C FV NA RH RL RM

Dimensions

Number of Effects	16
Number of Parameters	552

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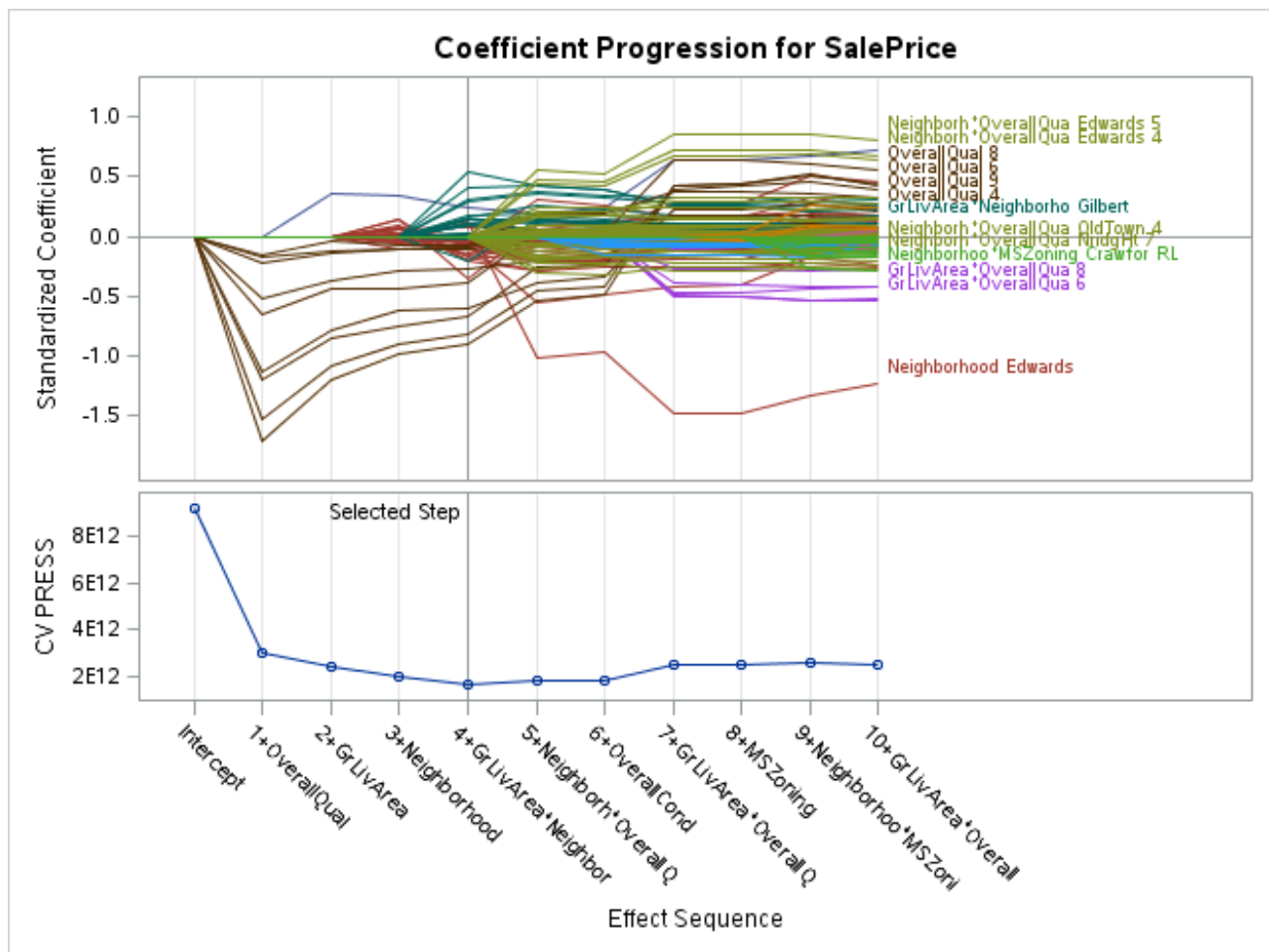
The GLMSELECT Procedure

Stepwise Selection Summary

Step	Effect Entered	Effect Removed	Number Effects In	Number Parms In	Model R-Square	PRESS	ASE	Test ASE	CV PRESS	F Value	Pr > F
0	Intercept		1	1	0.0000	9.22054E12	6306788585	3.27325E10	9.21717E12	0.00	1.0000
1	OverallQual		2	10	0.6842	2.99435E12	1991801855	3.75834E10	3.04585E12	349.03	<.0001
2	GrLivArea		3	11	0.7597	2.31563E12	1515509915	3.73387E10	2.41904E12	455.39	<.0001
3	Neighborhood		4	35	0.8159	1.83962E12	1161007459	3.74487E10	1.96917E12	18.13	<.0001
4	GrLivArea*Neighborho		5	59	0.8581	1.47962E12	894893459	3.79102E10	1.64475E12*	17.36	<.0001
5	Neighborh*OverallQua		6	139	0.8798	1.41341E12	758044522	3.80214E10	1.84113E12	2.98	<.0001
6	OverallCond		7	146	0.8862	1.35562E12*	717957265	3.80106E10	1.78459E12	10.48	<.0001
7	GrLivArea*OverallQua		8	153	0.8885	1.37862E12	703117482	3.81465E10	2.4826E12	3.94	0.0003

			9	157	0.8900	1.37346E12	693938822	3.81247E10	2.53315E12	4.31	0.0018
8	**MSZoning**										
9	**Neighborhoo*MSZoning**		10	170	0.8922	1.37049E12	679634765	3.82235E10	2.61499E12	2.09	0.0125
10	**GrLivArea*OverallCon**		11	177	0.8937	1.36189E12	670244285	3.81042E10	2.51705E12	2.57	0.0125
	* Optimal Value of Criterion										

Selection stopped because the candidate for entry has SLE > 0.15 and the candidate for removal has SLS < 0.15.

Stop Details					
Candidate For	**Effect**	**Candidate Significance**		**Compare Significance**	
Entry	OverallQual*MSZoning	0.1795	>	0.1500	(SLE)
Removal	GrLivArea*OverallCon	0.0125	<	0.1500	(SLS)

Fit Criteria for SalePrice

Progression of Average Squared Errors by Role for SalePrice
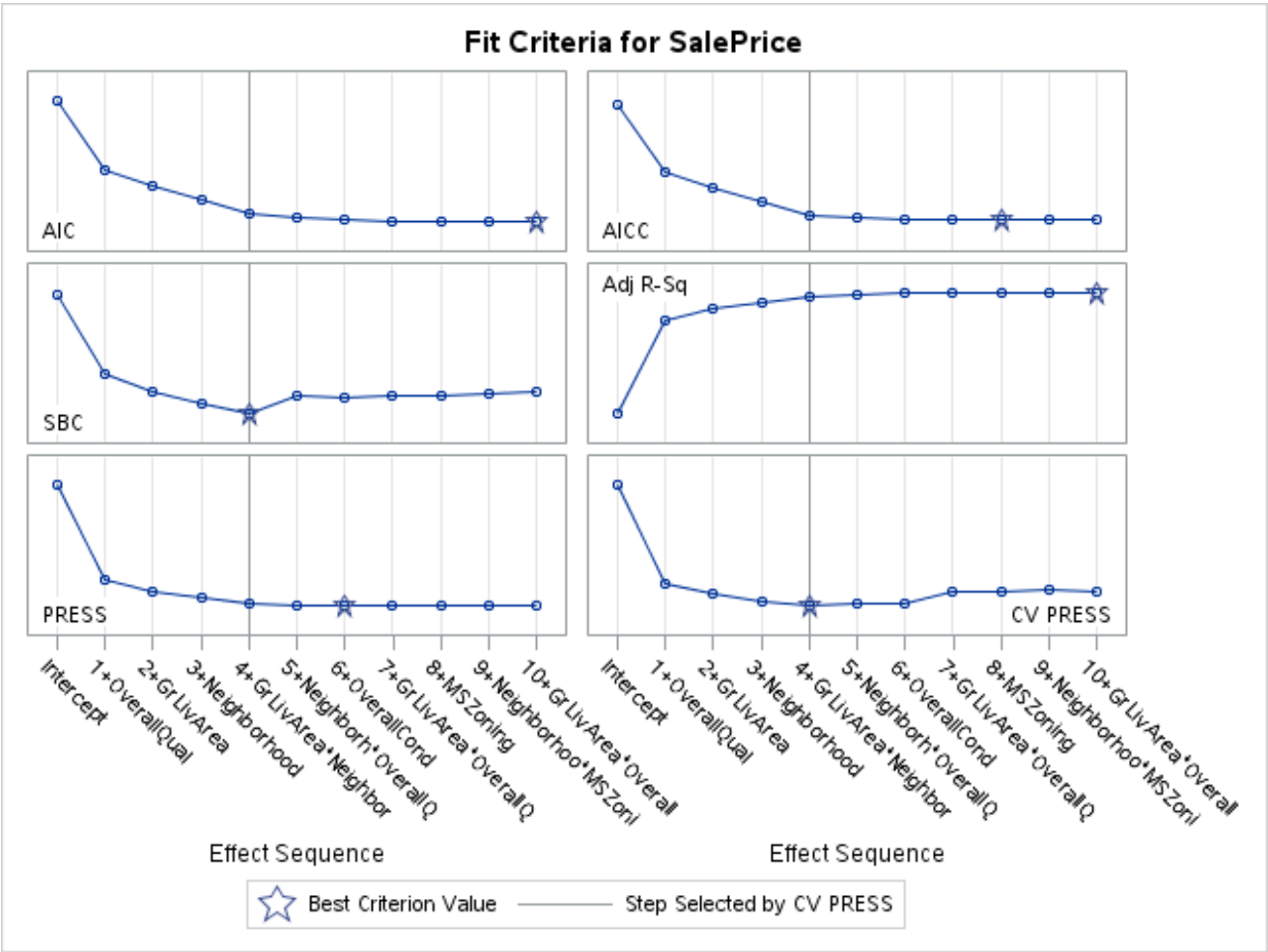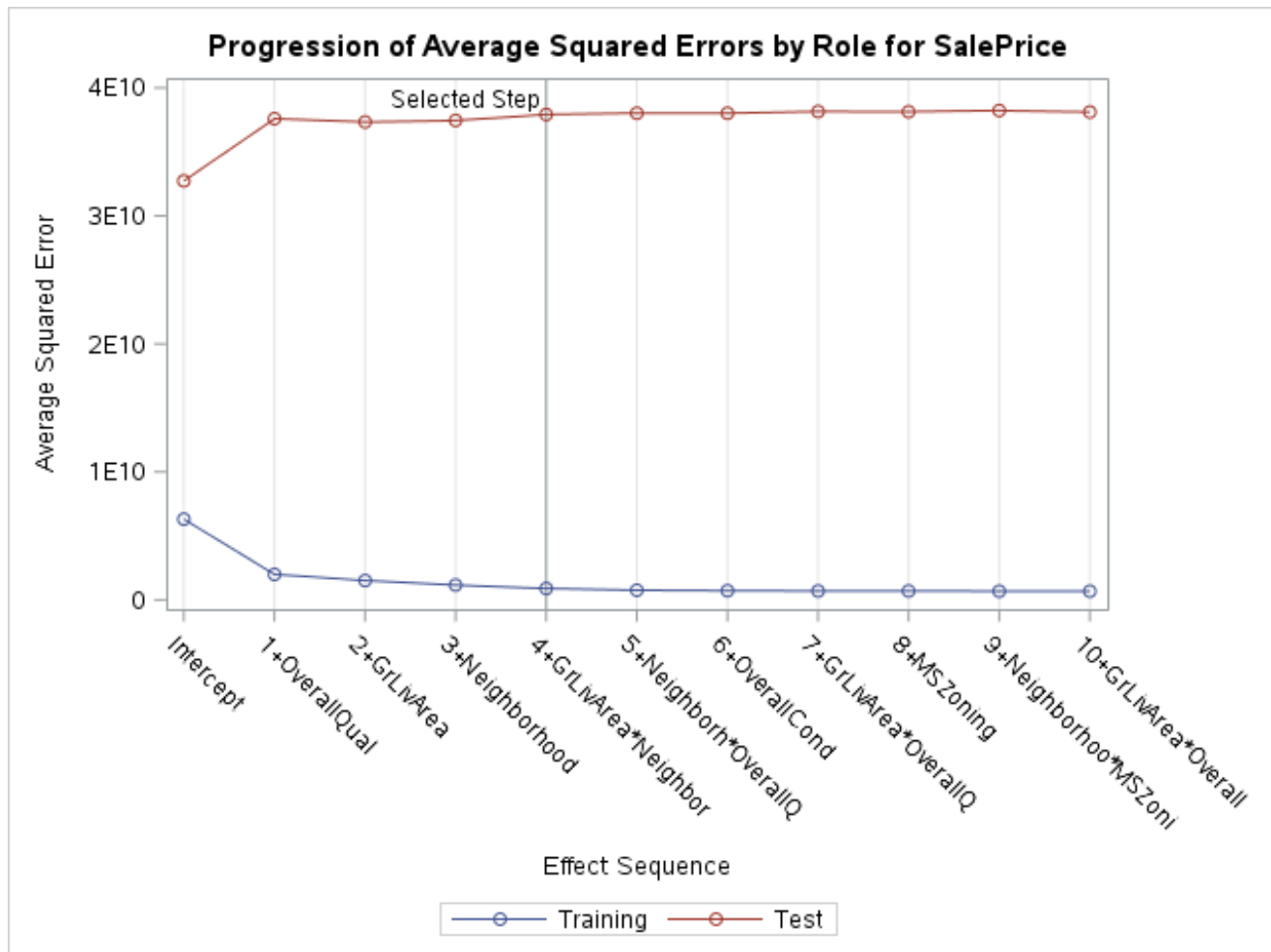
Stepwise Selection Results | 2 Interaction Limit 5 fold CV

The GLMSELECT Procedure
Selected Model

The selected model, based on Cross Validation, is the model at Step 4.

Effects:	Intercept GrLivArea Neighborhood GrLivArea*Neighborho OverallQual

Note: The p-values for parameters and effects are not adjusted for the fact that the terms in the model have been selected and so are generally liberal.

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	58	7.901367E12	1.362305E11	146.08	<.0001
Error	1401	1.306544E12	932579907		
Corrected Total	1459	9.207911E12			

Root MSE	30538
Dependent Mean	180921
R-Square	0.8581
Adj R-Sq	0.8522
AIC	31674

AICC	31679
PRESS	1.479624E12
SBC	30524
ASE (Train)	894893459
ASE (Test)	37910208635
CV PRESS	1.644752E12

Cross Validation Details

Index	Observations Fitted	Observations Left Out	CV PRESS
1	1168	292	2.53537E11
2	1168	292	2.65918E11
3	1168	292	2.6146E11
4	1168	292	6.3164E11
5	1168	292	2.32197E11
Total			1.64475E12

Parameter Estimates

Parameter	DF	Estimate	Standard Error	t Value	Pr > |t|	Cross Validation Estimates 1	2	3	4	5
Intercept	1	253868	11835	21.45	<.0001	8.90E+04	-6.07E+04	10872.90	-34418.80	-81191.13
GrLivArea	1	36.661570	5.069840	7.23	<.0001	6.85E+01	1.10E+02	104.10	156.56	115.37
Neighborhood Blmngtn	1	-115197	79623	-1.45	0.1482	-1.41E+05	-1.06E+05	-78906.17	-84045.92	74439.51
Neighborhood Blueste	1	-83376	185318	-0.45	0.6528	-3.73E+04	2.22E+04	-37410.68	-40448.40	39160.15
Neighborhood BrDale	1	-107485	59396	-1.81	0.0706	1.45E+04	-6.17E+03	7258.91	8097.73	6405.39
Neighborhood BrkSide	1	-45682	15333	-2.98	0.0029	-6.40E+04	-4.56E+04	-22800.05	-21455.62	2820.96
Neighborhood ClearCr	1	47449	24301	1.95	0.0511	7.62E+04	4.94E+04	65263.95	70663.07	66587.24
Neighborhood CollgCr	1	-18620	11330	-1.64	0.1005	-7.29E+04	-1.18E+05	-26645.14	-63529.53	19666.57
Neighborhood Crawfor	1	-24977	16354	-1.53	0.1269	5.46E+04	2.52E+04	64665.56	78338.58	112246.16
Neighborhood Edwards	1	39578	9979.711857	3.97	<.0001	-3.17E+05	-3.93E+05	-361216.27	39816.28	-337420.06
Neighborhood Gilbert	1	-25476	20662	-1.23	0.2178	7.30E+03	-1.83E+04	13310.39	-96514.12	105840.57
Neighborhood IDOTRR	1	-43621	22857	-1.91	0.0565	4.82E+04	2.08E+04	300.53	-17954.80	30668.66
Neighborhood MeadowV	1	-13618	20041	-0.68	0.4969	3.38E+04	4.22E+04	35025.31	36858.43	160795.96
Neighborhood Mitchel	1	2977.887729	17141	0.17	0.8621	6.11E+04	8.98E+04	58857.68	70584.19	116449.47
Neighborhood NPkVill	1	-2582.587157	58320	-0.04	0.9647	-5.14E+03	4.82E+03	3495.70	-2543.04	5246.97
Neighborhood NWAmes	1	-20332	16892	-1.20	0.2289	-1.56E+04	-1.31E+04	-19193.23	-48321.42	-10539.49
Neighborhood NoRidge	1	-169898	23489	-7.23	<.0001	3.85E+04	1.73E+05	40537.52	-31482.80	132036.53
Neighborhood NridgHt	1	-73412	18189	-4.04	<.0001	9.26E+04	1.92E+05	149454.18	46183.14	281806.08
Neighborhood OldTown	1	-27240	10501	-2.59	0.0096	4.39E+04	1.12E+05	49677.19	-29379.35	123855.01
Neighborhood SWISU	1	-22136	20834	-1.06	0.2882	-1.88E+04	-1.45E+04	-16210.10	-29254.36	-16370.32
Neighborhood Sawyer	1	3799.933804	14792	0.26	0.7973	-3.54E+04	-2.93E+04	-31556.39	-28194.93	-20785.62
Neighborhood SawyerW	1	-41031	14976	-2.74	0.0062	-4.84E+04	-4.56E+04	-36383.95	-66887.09	-19708.13
Neighborhood Somerst	1	-71305	19807	-3.60	0.0003	-4.52E+04	4.11E+04	-90375.59	-77520.22	83275.95
Neighborhood StoneBr	1	-104818	23160	-4.53	<.0001	-1.77E+05	-1.52E+05	-161655.44	-199500.61	1739.59
Neighborhood Timber	1	-28298	24018	-1.18	0.2389	-4.32E+04	-3.97E+04	-40037.64	-12515.45	11113.37
Neighborhood Veenker	1	-49850	48847	-1.02	0.3077	6.90E+04	4.70E+04	23269.18	12745.17	-111253.86

Neighborhood NAmes	0	0	.	.	.	0.00E+00	0.00E+00	0.00	0.00	0.00
GrLivArea*Neighborho Blmngtn	1	88.374509	55.483284	1.59	0.1114	9.62E+01	9.19E+01	76.36	80.40	-2.49
GrLivArea*Neighborho Blueste	1	45.907238	132.169125	0.35	0.7284	4.90E+01	0.00E+00	44.14	49.48	0.00
GrLivArea*Neighborho BrDale	1	59.904066	51.316754	1.17	0.2433	-6.25E+00	-1.25E+00	-4.88	-1.40	20.22
GrLivArea*Neighborho BrkSide	1	27.207979	11.871942	2.29	0.0221	3.72E+01	2.74E+01	23.95	21.33	25.69
GrLivArea*Neighborho ClearCr	1	-3.922314	13.566461	-0.29	0.7725	-8.95E+00	-5.36E+00	-4.78	-8.85	7.63
GrLivArea*Neighborho CollgCr	1	26.688557	7.785872	3.43	0.0006	3.51E+01	3.90E+01	-1.72	37.27	25.53
GrLivArea*Neighborho Crawfor	1	30.888751	9.359804	3.30	0.0010	4.16E+01	2.93E+01	26.76	17.59	23.64
GrLivArea*Neighborho Edwards	1	-42.456009	7.004749	-6.06	<.0001	2.33E+01	2.47E+01	10.49	14.29	12.27
GrLivArea*Neighborho Gilbert	1	23.927902	12.655526	1.89	0.0589	2.76E+01	2.75E+01	24.31	29.89	9.16
GrLivArea*Neighborho IDOTRR	1	10.741607	19.109370	0.56	0.5741	3.09E-01	2.28E+00	17.86	34.00	12.68
GrLivArea*Neighborho MeadowV	1	-11.436626	16.948285	-0.67	0.4999	2.50E+00	-7.72E+00	-4.86	-7.18	-43.10
GrLivArea*Neighborho Mitchel	1	3.283232	12.685386	0.26	0.7958	1.42E+01	-3.35E+00	15.24	8.97	7.75
GrLivArea*Neighborho NPkVill	1	-5.234723	45.739344	-0.11	0.9089	1.05E+00	-8.68E+00	-8.49	-3.90	-8.87
GrLivArea*Neighborho NWAmes	1	18.740046	9.985382	1.88	0.0608	1.01E+01	1.48E+00	4.21	12.04	1.34
GrLivArea*Neighborho NoRidge	1	101.316445	10.104479	10.03	<.0001	7.07E+01	3.37E+01	57.03	33.53	38.04
GrLivArea*Neighborho NridgHt	1	73.499485	10.120356	7.26	<.0001	6.52E+01	4.14E+01	44.06	24.04	24.33
GrLivArea*Neighborho OldTown	1	0.312377	7.075484	0.04	0.9648	7.26E-01	-7.93E-01	2.26	-7.22	-3.40
GrLivArea*Neighborho SWISU	1	-0.368330	11.418000	-0.03	0.9743	-9.21E-01	-6.87E+00	-12.35	-3.38	-17.04
GrLivArea*Neighborho Sawyer	1	-3.431346	11.537183	-0.30	0.7662	2.41E+01	1.77E+01	15.92	17.38	17.46
GrLivArea*Neighborho SawyerW	1	34.149555	9.386490	3.64	0.0003	2.25E+01	2.41E+01	20.50	15.52	15.61
GrLivArea*Neighborho Somerst	1	61.616430	12.439582	4.95	<.0001	6.91E+01	5.69E+01	71.25	54.79	36.97
GrLivArea*Neighborho StoneBr	1	94.074099	12.232217	7.69	<.0001	1.10E+02	1.14E+02	96.98	106.63	53.44
GrLivArea*Neighborho Timber	1	38.625044	13.786894	2.80	0.0052	3.51E+01	1.07E+01	20.27	15.19	33.95
GrLivArea*Neighborho Veenker	1	66.704225	31.247469	2.13	0.0330	-6.41E+00	-1.05E+01	17.09	21.14	125.63
GrLivArea*Neighborho NAmes	0	0	.	.	.	0.00E+00	0.00E+00	0.00	0.00	0.00
OverallQual 1	1	-208712	24312	-8.58	<.0001	2.85E+02	3.95E+05	298062.06	-90118.86	365409.21
OverallQual 2	1	-194866	21279	-9.16	<.0001	-6.63E+04	6.84E+04	-8000.68	12873.31	68029.17
OverallQual 3	1	-190505	11704	-16.28	<.0001	-5.23E+04	7.66E+04	19006.08	56732.90	87199.31
OverallQual 4	1	-174396	9867.630828	-17.67	<.0001	-3.21E+04	1.16E+05	46996.70	61337.92	115056.80
OverallQual 5	1	-161769	9383.011371	-17.24	<.0001	-1.90E+04	1.33E+05	51562.85	79675.37	134698.09

OverallQual 6	1	-147968	9220.467262	-16.05	<.0001	-1.67E+04	1.41E+05	54447.95	90694.18	133376.07
OverallQual 7	1	-127854	9030.333218	-14.16	<.0001	-3.61E+04	1.36E+05	57523.16	88289.37	118629.01
OverallQual 8	1	-96628	8843.017139	-10.93	<.0001	6.04E+04	2.02E+05	124628.80	148711.51	153406.40
OverallQual 9	1	-35146	9381.469564	-3.75	0.0002	9.02E+04	2.10E+05	116759.90	187865.11	118997.34
OverallQual 10	0	0	.	.	.	0.00E+00	0.00E+00	0.00	0.00	0.00