```
In [1]: from google.colab import drive
        drive.mount('/content/MyDrive/')
```

```
Mounted at /content/MyDrive/
```

```
In [2]: import pandas as pd
        import numpy as np
        import matplotlib.pyplot as plt
        import seaborn as sns
        import warnings
        warnings.filterwarnings("ignore")
        pd.set_option('display.max_columns',None)
        pd.set_option('display.max_rows',None)
        %matplotlib inline
```

Understand the dataset:

a. Identify the shape of the dataset

b. Identify variables with null values

c. Identify variables with unique values

```
In [3]: data = pd.read_csv('/content/MyDrive/MyDrive/1645779348_project_dataset_f
        eature_engineering20220225t085351z001/Project_Dataset_Feature_Engineering
        /PEP1.csv')
```

```
In [4]: data.shape
```

```
Out[4]: (1460, 81)
```

```python
In [5]: for column in data:
            print(f'NUll values is True or False :{data[column].isnull().any()}')
            print(f'{column}: {data[column].unique()}')
            print(f'Total.No.Of.Unique Value: {data[column].nunique()}')
            print
        ('-----------------------------------------------------------------------
        ------------------------------------------------------------------------
        ----------------')
```

```
            NUll values is True or False :False
            Id: [   1    2    3 ... 1458 1459 1460]
            Total.No.Of.Unique Value: 1460
            --------------------------------------------------------------------
            --------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            MSSubClass: [ 60  20  70  50 190  45  90 120  30  85  80 160  75 180  4
            0]
            Total.No.Of.Unique Value: 15
            --------------------------------------------------------------------
            --------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            MSZoning: ['RL' 'RM' 'C (all)' 'FV' 'RH']
            Total.No.Of.Unique Value: 5
            --------------------------------------------------------------------
            --------------------------------------------------------------------
            ----------------
            NUll values is True or False :True
            LotFrontage: [ 65.  80.  68.  60.  84.  85.  75.  nan  51.  50.  70.  9
            1.  72.  66.
             101.  57.  44. 110.  98.  47. 108. 112.  74. 115.  61.  48.  33.  52.
             100.  24.  89.  63.  76.  81.  95.  69.  21.  32.  78. 121. 122.  40.
             105.  73.  77.  64.  94.  34.  90.  55.  88.  82.  71. 120. 107.  92.
             134.  62.  86. 141.  97.  54.  41.  79. 174.  99.  67.  83.  43. 103.
              93.  30. 129. 140.  35.  37. 118.  87. 116. 150. 111.  49.  96.  59.
              36.  56. 102.  58.  38. 109. 130.  53. 137.  45. 106. 104.  42.  39.
             144. 114. 128. 149. 313. 168. 182. 138. 160. 152. 124. 153.  46.]
            Total.No.Of.Unique Value: 110
            --------------------------------------------------------------------
            --------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            LotArea: [ 8450  9600 11250 ... 17217 13175  9717]
            Total.No.Of.Unique Value: 1073
            --------------------------------------------------------------------
            --------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            Street: ['Pave' 'Grvl']
            Total.No.Of.Unique Value: 2
            --------------------------------------------------------------------
            --------------------------------------------------------------------
            ----------------
            NUll values is True or False :True
            Alley: [nan 'Grvl' 'Pave']
            Total.No.Of.Unique Value: 2
            --------------------------------------------------------------------
            --------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            LotShape: ['Reg' 'IR1' 'IR2' 'IR3']
            Total.No.Of.Unique Value: 4
            --------------------------------------------------------------------
            --------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            LandContour: ['Lvl' 'Bnk' 'Low' 'HLS']
            Total.No.Of.Unique Value: 4
```

```
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
Utilities: ['AllPub' 'NoSeWa']
Total.No.Of.Unique Value: 2
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
LotConfig: ['Inside' 'FR2' 'Corner' 'CulDSac' 'FR3']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
LandSlope: ['Gtl' 'Mod' 'Sev']
Total.No.Of.Unique Value: 3
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
Neighborhood: ['CollgCr' 'Veenker' 'Crawfor' 'NoRidge' 'Mitchel' 'Somers
t' 'NWAmes'
 'OldTown' 'BrkSide' 'Sawyer' 'NridgHt' 'mes' 'SawyerW' 'IDOTRR' 'Meadow
V'
 'Edwards' 'Timber' 'Gilbert' 'StoneBr' 'ClearCr' 'NPkVill' 'Blmngtn'
 'BrDale' 'SWISU' 'Blueste']
Total.No.Of.Unique Value: 25
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
Condition1: ['Norm' 'Feedr' 'PosN' 'Artery' 'RRAe' 'RRNn' 'RRAn' 'PosA'
'RRNe']
Total.No.Of.Unique Value: 9
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
Condition2: ['Norm' 'Artery' 'RRNn' 'Feedr' 'PosN' 'PosA' 'RRAn' 'RRAe']
Total.No.Of.Unique Value: 8
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
BldgType: ['1Fam' '2fmCon' 'Duplex' 'TwnhsE' 'Twnhs']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
HouseStyle: ['2Story' '1Story' '1.5Fin' '1.5Unf' 'SFoyer' 'SLvl' '2.5Unf
' '2.5Fin']
Total.No.Of.Unique Value: 8
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
OverallQual: [ 7  6  8  5  9  4 10  3  1  2]
```

```
Total.No.Of.Unique Value: 10
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
OverallCond: [5 8 6 7 4 2 3 9 1]
Total.No.Of.Unique Value: 9
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
YearBuilt: [2003 1976 2001 1915 2000 1993 2004 1973 1931 1939 1965 2005
1962 2006
 1960 1929 1970 1967 1958 1930 2002 1968 2007 1951 1957 1927 1920 1966
 1959 1994 1954 1953 1955 1983 1975 1997 1934 1963 1981 1964 1999 1972
 1921 1945 1982 1998 1956 1948 1910 1995 1991 2009 1950 1961 1977 1985
 1979 1885 1919 1990 1969 1935 1988 1971 1952 1936 1923 1924 1984 1926
 1940 1941 1987 1986 2008 1908 1892 1916 1932 1918 1912 1947 1925 1900
 1980 1989 1992 1949 1880 1928 1978 1922 1996 2010 1946 1913 1937 1942
 1938 1974 1893 1914 1906 1890 1898 1904 1882 1875 1911 1917 1872 1905]
Total.No.Of.Unique Value: 112
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
YearRemodAdd: [2003 1976 2002 1970 2000 1995 2005 1973 1950 1965 2006 19
62 2007 1960
 2001 1967 2004 2008 1997 1959 1990 1955 1983 1980 1966 1963 1987 1964
 1972 1996 1998 1989 1953 1956 1968 1981 1992 2009 1982 1961 1993 1999
 1985 1979 1977 1969 1958 1991 1971 1952 1975 2010 1984 1986 1994 1988
 1954 1957 1951 1978 1974]
Total.No.Of.Unique Value: 61
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
RoofStyle: ['Gable' 'Hip' 'Gambrel' 'Mansard' 'Flat' 'Shed']
Total.No.Of.Unique Value: 6
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
RoofMatl: ['CompShg' 'WdShngl' 'Metal' 'WdShake' 'Membran' 'Tar&Grv' 'Ro
ll'
 'ClyTile']
Total.No.Of.Unique Value: 8
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
Exterior1st: ['VinylSd' 'MetalSd' 'Wd Sdng' 'HdBoard' 'BrkFace' 'WdShing
' 'CemntBd'
 'Plywood' 'AsbShng' 'Stucco' 'BrkComm' 'AsphShn' 'Stone' 'ImStucc'
 'CBlock']
Total.No.Of.Unique Value: 15
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
Exterior2nd: ['VinylSd' 'MetalSd' 'Wd Shng' 'HdBoard' 'Plywood' 'Wd Sdng
```

```
' 'CmentBd'
 'BrkFace' 'Stucco' 'AsbShng' 'Brk Cmn' 'ImStucc' 'AsphShn' 'Stone'
 'Other' 'CBlock']
Total.No.Of.Unique Value: 16
----------------------------------------------------------------------------
----------------------------------------------------------------------------
-----------------
NUll values is True or False :True
MasVnrType: ['BrkFace' 'None' 'Stone' 'BrkCmn' nan]
Total.No.Of.Unique Value: 4
----------------------------------------------------------------------------
----------------------------------------------------------------------------
-----------------
NUll values is True or False :True
MasVnrArea: [1.960e+02 0.000e+00 1.620e+02 3.500e+02 1.860e+02 2.400e+02
2.860e+02
 3.060e+02 2.120e+02 1.800e+02 3.800e+02 2.810e+02 6.400e+02 2.000e+02
 2.460e+02 1.320e+02 6.500e+02 1.010e+02 4.120e+02 2.720e+02 4.560e+02
 1.031e+03 1.780e+02 5.730e+02 3.440e+02 2.870e+02 1.670e+02 1.115e+03
 4.000e+01 1.040e+02 5.760e+02 4.430e+02 4.680e+02 6.600e+01 2.200e+01
 2.840e+02 7.600e+01 2.030e+02 6.800e+01 1.830e+02 4.800e+01 2.800e+01
 3.360e+02 6.000e+02 7.680e+02 4.800e+02 2.200e+02 1.840e+02 1.129e+03
 1.160e+02 1.350e+02 2.660e+02 8.500e+01 3.090e+02 1.360e+02 2.880e+02
 7.000e+01 3.200e+02 5.000e+01 1.200e+02 4.360e+02 2.520e+02 8.400e+01
 6.640e+02 2.260e+02 3.000e+02 6.530e+02 1.120e+02 4.910e+02 2.680e+02
 7.480e+02 9.800e+01 2.750e+02 1.380e+02 2.050e+02 2.620e+02 1.280e+02
 2.600e+02 1.530e+02 6.400e+01 3.120e+02 1.600e+01 9.220e+02 1.420e+02
 2.900e+02 1.270e+02 5.060e+02 2.970e+02       nan 6.040e+02 2.540e+02
 3.600e+01 1.020e+02 4.720e+02 4.810e+02 1.080e+02 3.020e+02 1.720e+02
 3.990e+02 2.700e+02 4.600e+01 2.100e+02 1.740e+02 3.480e+02 3.150e+02
 2.990e+02 3.400e+02 1.660e+02 7.200e+01 3.100e+01 3.400e+01 2.380e+02
 1.600e+03 3.650e+02 5.600e+01 1.500e+02 2.780e+02 2.560e+02 2.250e+02
 3.700e+02 3.880e+02 1.750e+02 2.960e+02 1.460e+02 1.130e+02 1.760e+02
 6.160e+02 3.000e+01 1.060e+02 8.700e+02 3.620e+02 5.300e+02 5.000e+02
 5.100e+02 2.470e+02 3.050e+02 2.550e+02 1.250e+02 1.000e+02 4.320e+02
 1.260e+02 4.730e+02 7.400e+01 1.450e+02 2.320e+02 3.760e+02 4.200e+01
 1.610e+02 1.100e+02 1.800e+01 2.240e+02 2.480e+02 8.000e+01 3.040e+02
 2.150e+02 7.720e+02 4.350e+02 3.780e+02 5.620e+02 1.680e+02 8.900e+01
 2.850e+02 3.600e+02 9.400e+01 3.330e+02 9.210e+02 7.620e+02 5.940e+02
 2.190e+02 1.880e+02 4.790e+02 5.840e+02 1.820e+02 2.500e+02 2.920e+02
 2.450e+02 2.070e+02 8.200e+01 9.700e+01 3.350e+02 2.080e+02 4.200e+02
 1.700e+02 4.590e+02 2.800e+02 9.900e+01 1.920e+02 2.040e+02 2.330e+02
 1.560e+02 4.520e+02 5.130e+02 2.610e+02 1.640e+02 2.590e+02 2.090e+02
 2.630e+02 2.160e+02 3.510e+02 6.600e+02 3.810e+02 5.400e+01 5.280e+02
 2.580e+02 4.640e+02 5.700e+01 1.470e+02 1.170e+03 2.930e+02 6.300e+02
 4.660e+02 1.090e+02 4.100e+01 1.600e+02 2.890e+02 6.510e+02 1.690e+02
 9.500e+01 4.420e+02 2.020e+02 3.380e+02 8.940e+02 3.280e+02 6.730e+02
 6.030e+02 1.000e+00 3.750e+02 9.000e+01 3.800e+01 1.570e+02 1.100e+01
 1.400e+02 1.300e+02 1.480e+02 8.600e+02 4.240e+02 1.047e+03 2.430e+02
 8.160e+02 3.870e+02 2.230e+02 1.580e+02 1.370e+02 1.150e+02 1.890e+02
 2.740e+02 1.170e+02 6.000e+01 1.220e+02 9.200e+01 4.150e+02 7.600e+02
 2.700e+01 7.500e+01 3.610e+02 1.050e+02 3.420e+02 2.980e+02 5.410e+02
 2.360e+02 1.440e+02 4.230e+02 4.400e+01 1.510e+02 9.750e+02 4.500e+02
 2.300e+02 5.710e+02 2.400e+01 5.300e+01 2.060e+02 1.400e+01 3.240e+02
 2.950e+02 3.960e+02 6.700e+01 1.540e+02 4.250e+02 4.500e+01 1.378e+03
 3.370e+02 1.490e+02 1.430e+02 5.100e+01 1.710e+02 2.340e+02 6.300e+01
 7.660e+02 3.200e+01 8.100e+01 1.630e+02 5.540e+02 2.180e+02 6.320e+02
 1.140e+02 5.670e+02 3.590e+02 4.510e+02 6.210e+02 7.880e+02 8.600e+01
 7.960e+02 3.910e+02 2.280e+02 8.800e+01 1.650e+02 4.280e+02 4.100e+02
 5.640e+02 3.680e+02 3.180e+02 5.790e+02 6.500e+01 7.050e+02 4.080e+02
```

```
  2.440e+02 1.230e+02 3.660e+02 7.310e+02 4.480e+02 2.940e+02 3.100e+02
  2.370e+02 4.260e+02 9.600e+01 4.380e+02 1.940e+02 1.190e+02]
Total.No.Of.Unique Value: 327
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
ExterQual: ['Gd' 'TA' 'Ex' 'Fa']
Total.No.Of.Unique Value: 4
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
ExterCond: ['TA' 'Gd' 'Fa' 'Po' 'Ex']
Total.No.Of.Unique Value: 5
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
Foundation: ['PConc' 'CBlock' 'BrkTil' 'Wood' 'Slab' 'Stone']
Total.No.Of.Unique Value: 6
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :True
BsmtQual: ['Gd' 'TA' 'Ex' nan 'Fa']
Total.No.Of.Unique Value: 4
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :True
BsmtCond: ['TA' 'Gd' nan 'Fa' 'Po']
Total.No.Of.Unique Value: 4
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :True
BsmtExposure: ['No' 'Gd' 'Mn' 'Av' nan]
Total.No.Of.Unique Value: 4
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :True
BsmtFinType1: ['GLQ' 'ALQ' 'Unf' 'Rec' 'BLQ' nan 'LwQ']
Total.No.Of.Unique Value: 6
----------------------------------------------------------------------------
----------------------------------------------------------------------------
----------------
NUll values is True or False :False
BsmtFinSF1: [ 706  978  486  216  655  732 1369  859    0  851  906  998
737  733
  578  646  504  840  188  234 1218 1277 1018 1153 1213  731  643  967
  747  280  179  456 1351   24  763  182  104 1810  384  490  649  632
  941  739  912 1013  603 1880  565  320  462  228  336  448 1201   33
  588  600  713 1046  648  310 1162  520  108  569 1200  224  705  444
  250  984   35  774  419  170 1470  938  570  300  120  116  512  567
  445  695  405 1005  668  821  432 1300  507  679 1332  209  680  716
 1400  416  429  222   57  660 1016  370  351  379 1288  360  639  495
  288 1398  477  831 1904  436  352  611 1086  297  626  560  390  566
 1126 1036 1088  641  617  662  312 1065  787  468   36  822  378  946
```

```
  341   16  550  524   56  321  842  689  625  358  402   94 1078  329
  929  697 1573  270  922  503 1334  361  672  506  714  403  751  226
  620  546  392  421  905  904  430  614  450  210  292  795 1285  819
  420  841  281  894 1464  700  262 1274  518 1236  425  692  987  970
   28  256 1619   40  846 1124  720  828 1249  810  213  585  129  498
 1270  573 1410 1082  236  388  334  874  956  773  399  162  712  609
  371  540   72  623  428  350  298 1445  218  985  631 1280  241  690
  266  777  812  786 1116  789 1056   50 1128  775 1309 1246  986  616
 1518  664  387  471  385  365 1767  133  642  247  331  742 1606  916
  185  544  553  326  778  386  426  368  459 1350 1196  630  994  168
 1261 1567  299  897  607  836  515  374 1231  111  356  400  698 1247
  257  380   27  141  991  650  521 1436 2260  719  377 1330  348 1219
  783  969  673 1358 1260  144  584  554 1002  619  180  559  308  866
  895  637  604 1302 1071  290  728    2 1441  943  231  414  349  442
  328  594  816 1460 1324 1338  685 1422 1283   81  454  903  605  990
  206  150  457   48  871   41  674  624  480 1154  738  493 1121  282
  500  131 1696  806 1361  920 1721  187 1138  988  193  551  767 1186
  892  311  827  543 1003 1059  239  945   20 1455  965  980  863  533
 1084 1173  523 1148  191 1234  375  808  724  152 1180  252  832  575
  919  439  381  438  549  612 1163  437  394 1416  422  762  975 1097
  251  686  656  568  539  862  197  516  663  608 1636  784  249 1040
  483  196  572  338  330  156 1390  513  460  659  364  564  306  505
  932  750   64  633 1170  899  902 1238  528 1024 1064  285 2188  465
  322  860  599  354   63  223  301  443  489  284  294  814  165  552
  833  464  936  772 1440  748  982  398  562  484  417  699  696  896
  556 1106  651  867  854 1646 1074  536 1172  915  595 1237  273  684
  324 1165  138 1513  317 1012 1022  509  900 1085 1104  240  383  644
  397  740  837  220  586  535  410   75  824  592 1039  510  423  661
  248  704  412 1032  219  708  415 1004  353  702  369  622  212  645
  852 1150 1258  275  176  296  538 1157  492 1198 1387  522  658 1216
 1480 2096 1159  440 1456  883  547  788  485  340 1220  427  344  756
 1540  666  803 1000  885 1386  319  534  125 1314  602  192  593  804
 1053  532 1158 1014  194  167  776 5644  694 1572  746 1406  925  482
  189  765   80 1443  259  735  734 1447  548  315 1282  408  309  203
  865  204  790 1320  769 1070  264  759 1373  976  781   25 1110  404
  580  678  958 1336 1079   49  830]
Total.No.Of.Unique Value: 637
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
BsmtFinType2: ['Unf' 'BLQ' nan 'ALQ' 'Rec' 'LwQ' 'GLQ']
Total.No.Of.Unique Value: 6
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
BsmtFinSF2: [   0   32  668  486   93  491  506  712  362   41  169  869
 150  670
   28 1080  181  768  215  374  208  441  184  279  306  180  580  690
  692  228  125 1063  620  175  820 1474  264  479  147  232  380  544
  294  258  121  391  531  344  539  713  210  311 1120  165  532   96
  495  174 1127  139  202  645  123  551  219  606  612  480  182  132
  336  468  287   35  499  723  119   40  117  239   80  472   64 1057
  127  630  128  377  764  345 1085  435  823  500  290  324  634  411
  841 1061  466  396  354  149  193  273  465  400  682  557  230  106
  791  240  547  469  177  108  600  492  211  168 1031  438  375  144
   81  906  608  276  661   68  173  972  105  420  546  334  352  872
  110  627  163 1029]
Total.No.Of.Unique Value: 144
```

```
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------------
                 ----------------
                 NUll values is True or False :False
                 BsmtUnfSF: [ 150  284  434  540  490   64  317  216  952  140  134  177
                 175 1494
                   520  832  426    0  468  525 1158  637 1777  200  204 1566  180  486
                   207  649 1228 1234  380  408 1117 1097   84  326  445  383  167  465
                  1296   83 1632  736  192  612  816   32  935  321  860 1410  148  217
                   530 1346  576  318 1143 1035  440  747  701  343  280  404  840  724
                   295 1768  448   36 1530 1065  384 1288  684 1013  402  635  163  168
                   176  370  350  381  410  741 1226 1053  641  516  793 1139  550  905
                   104  310  252 1125  203  728  732  510  899 1362   30  958  556  413
                   479  297  658  262  891 1304  519 1907  336  107  432  403  811  396
                   970  506  884  400  896  253  409   93 1200  572  774  769 1335  340
                   882  779  112  470  294 1686  360  441  354  700  725  320  554  312
                   968  504 1107  577  660   99  871  474  289  600  755  625 1121  276
                   186 1424 1140  375   92  305 1176   78  274  311  710  686  457 1232
                  1498 1010  160 2336  630  638  162   70 1357 1194  773  483  235  125
                  1390  594 1694  488  357  626  916 1020 1367  798  452  392  975  361
                   270  602 1482  680  606   88  342  212 1095   96  628 1560  744 2121
                   768  386 1468 1145  244  698 1079  570  476  131  184  143 1092  324
                  1541 1470  536  319  599  622  179  292  286   80  712  291  153 1088
                  1249  166  906  604  100  818  844  596  210 1603  115  103  673  726
                   995  967  721 1656  972  460  208  191  438 1869  371  624  552  322
                   598  268  130  484  785  733  953  847  333 1580  411  982  808 1293
                   939  784  595  229  114  522  735  405  117  961 1286  672 1141  806
                   165 1064 1063  245 1276  892 1008  499 1316  463  242  444  281   35
                   356  988  580  651  619  544  387  901  926  135  648   75  788 1307
                  1078 1258  273 1436  557  930  780  813  878  122  248  588  524  288
                   389  424 1375 1626  406  298 2153  417  739  225  611  237  290  264
                   238  363  190 1969  697  414  316  466  420  254  960  397 1191  548
                    50  178 1368  169  748  689 1264  467  605 1257  551  678  707  880
                   378  223  578  969  379  765  149  912  620 1709  132  993  197 1374
                    90  195  706 1163  367 1122 1515   55 1497  450  846   23  390  861
                   285 1050  331 2042 1237  113  742  924  512  119  314  308  293  537
                   126  427  309  914  173 1774  823  485 1116  978  636  564  108 1184
                   796  366  300  542  645  664  756  247  776  849 1392   38 1406  111
                   545  121 2046  161  261  567 1195  874 1342  151  989 1073  927  219
                   224  526 1164  761  461  876  859  171  718  138  941  464  250   72
                   508 1584  415   82  948  893  864 1349   76  487  652 1240  801  279
                  1030  348  234 1198  740   89  586  323 1836  480  456 1935  338 1594
                   102  374 1413  491 1129  255 1496  650 1926  154  999 1734  124 1417
                    15  834 1649  936  778 1489  442 1434  352  458 1221 1099  416 1800
                   227  907  528  189 1273  563  372  702 1090  435  198 1372  174 1638
                   894  299  105  676 1120  431  218  110  795 1098 1043  481  666  142
                   447  783 1670  277  412  794  239  662 1072  717  546  430  422  188
                   266 1181 1753  964 1450 1905 1480  772 1032  220  187   29  495  640
                   193  196  720  918 1428   77 1266 1128  692  770  750 1442 1007  501
                   691 1550 1680 1330 1710  746  814  515  571  359  355  301  668  920
                  1055 1420 1752  304 1302  833  133  549  705  722  799  462  429  810
                   155  170  230 1459 1082  758 1290 1074  251  172  868  797  365  418
                   730  533  671 1012 1528 1005 1373  500  762  752  399 1042   40   26
                   932  278  459  568 1502  543  574  977  449  983  731  120  538  831
                   994  341  879  815 1212  866 1630  328  141  364 1380   81  303  940
                   764 1048  334 1689  690  792  585  473  246 1045 1405  201   14  841
                  1104  241  925 2002   74  661  708 1152  256  804  812 1085  344  425
                  1616  976  496  349  971 1393 1622 1352 1795 1017 1588  428  803  693
                   858 1284 1203 1652   39  539 1217  257  715  616  240  315 1351 1026
                  1571  156   61   95  482 1094   60  862  221  791  398  777  503  734
```

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        709 1252  656 1319 1422  560 1573  589  877  136]
Total.No.Of.Unique Value: 780
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NUll values is True or False :False
TotalBsmtSF: [ 856 1262  920  756 1145  796 1686 1107  952  991 1040 117
5  912 1494
 1253  832 1004    0 1114 1029 1158  637 1777 1060 1566  900 1704 1484
  520  649 1228 1234 1398 1561 1117 1097 1297 1057 1088 1350  840  938
 1150 1752 1434 1656  736  955  794  816 1842  384 1425  970  860 1410
  780  530 1370  576 1143 1947 1453  747 1304 2223  845 1086  462  672
 1768  440  896 1237 1563 1065 1288  684  612 1013  990 1235  876 1214
  824  680 1588  960  458  950 1610  741 1226 1053  641  789  793 1844
  994 1264 1809 1028  729 1092 1125 1673  728  732 1080 1199 1362 1078
  660 1008  924  992 1063 1267 1461 1907  928  864 1734  910 1490 1728
  715  884  969 1710  825 1602 1200  572  774 1392 1232 1572 1541  882
 1149  644 1617 1582  720 1064 1606 1202 1151 1052 2216  968  504 1188
 1593  853  725 1431  855 1726 1360  755 1713 1121 1196  617  848 1424
 1140 1100 1157 1212  689 1070 1436  686  798 1248 1498 1010  713 2392
  630 1203  483 1373 1194 1462  894 1414  996 1694  735  540  626  948
 1845 1020 1367 1444 1573 1302 1314  975 1604  963 1482  506  926 1422
  802  740 1095 1385 1152 1240 1560 2121 1160  807 1468 1575  625  858
  698 1079  768  795 1416 1003  702 1165 1470 2000  700  319  861 1896
  697  972 2136  716 1347 1372 1249 1136 1502 1162  710 1719 1383  844
  596 1056 3206 1358  943 1499 1922 1536 1208 1215  967  721 1684  536
  958 1478  764 1848 1869  616  624  940 1142 1062  888  883 1394 1099
 1268  953  744  608  847  683  870 1580 1856  982 1026 1293  939  784
 1256  658 1041 1682  804  788 1144  961 1260 1310 1141  806 1281 1034
 1276 1340 1344  988  651 1518  907  901  765  799  648 3094 1440 1258
  915 1517  930  813 1533  872 1242 1364  588  709  560 1375 1277 1626
 1488  808  547 1976 2153 1705 1833 1792 1216  999 1113 1073  954  264
 1269  190 3200  866 1501  777 1218 1368 1084 2006 1244 3138 1379 1257
 1452  528 2035  611  707  880 1051 1581 1838 1650  723  654 1204 1069
 1709  998  993 1374 1389 1163 1122 1496  846  372 1164 1050 2042 1868
 1437  742  770 1722 1814 1430 1058  908  600  965 1032 1299 1120  936
  783 1822 1522  980 1116  978 1156  636 1554 1386  811 1520 1952 1766
  981 1094 2109  525  776 1486 1629 1138 2077 1406 1021 1408  738 1477
 2046  923 1291 1195 1190  874  551 1419 2444 1210  927 1112 1391 1800
  360 1473 1643 1324  270  859  718 1176 1311  971 1742  941 1698 1584
 1595  868 1153  893 1349 1337 1720 1479 1030 1318 1252  983 1860  836
 1935 1614  761 1413  956  712  650  773 1926  731 1417 1024  849 1442
 1649 1568  778 1489 2078 1454 1516 1067 1559 1127 1390 1273  918 1763
 1090 1054 1039 1148 1002 1638  105  676 1184 1109  892 2217 1505 1059
  951 2330 1670 1623 1017 1105 1001  546  480 1134 1104 1272 1316 1126
 1181 1753  964 1466  925 1905 1500  585 1632  819 1616 1161  828  945
  979  561  696 1330  817 1098 1428  673 1241  944 1225 1266 1128  485
 1930 1396  916  822  750 1700 1007 1187  691 1574 1680 1346  985 1657
  602 1022 1082  810 1504 1220 1132 1565 1338 1654 1620 1055  800 1306
 1475 2524 1992 1193  973  854  662 1103 1154  942 1048  727  690 1096
 1459 1251 1247 1074 1271  290  655 1463 1836  803  833  408  533 1012
 1552 1005 1530  974 1567 1006 1042 1298  704  932 1219 1296 1198  959
 1261 1598 1683  818 1600 2396 1624  831 1224  663  879  815 1630 2158
  931 1660  559 1300 1702 1075 1361 1106 1476 1689 2076  792 2110 1405
 1192  746 1986  841 2002 1332  935 1019  661 1309 1328 1085 6110 1246
  771  976 1652 1278 1902 1274 1393 1622 1352  420 1795  544 1510  911
  693 1284 1732 2033  570 1980  814  873  757 1108 2633 1571  984 1205
  714 1746 1525  482 1356  862  839 1286 1485 1594  622  791  708 1223
  913  656 1319 1932  539 1221 1542]
Total.No.Of.Unique Value: 721
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NUll values is True or False :False
Heating: ['GasA' 'GasW' 'Grav' 'Wall' 'OthW' 'Floor']
Total.No.Of.Unique Value: 6
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NUll values is True or False :False
HeatingQC: ['Ex' 'Gd' 'TA' 'Fa' 'Po']
Total.No.Of.Unique Value: 5
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NUll values is True or False :False
CentralAir: ['Y' 'N']
Total.No.Of.Unique Value: 2
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NUll values is True or False :True
Electrical: ['SBrkr' 'FuseF' 'FuseA' 'FuseP' 'Mix' nan]
Total.No.Of.Unique Value: 5
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NUll values is True or False :False
1stFlrSF: [ 856 1262  920  961 1145  796 1694 1107 1022 1077 1040 1182
912 1494
 1253  854 1004 1296 1114 1339 1158 1108 1795 1060 1600  900 1704  520
  649 1228 1234 1700 1561 1132 1097 1297 1057 1152 1324 1328  884  938
 1150 1752 1518 1656  736  955  794  816 1842 1360 1425  983  860 1426
  780  581 1370  902 1143 2207 1479  747 1304 2223  845  885 1086  840
  526  952 1072 1768  682 1337 1563 1065  804 1301  684  612 1013  990
 1235  964 1260  905  680 1588  960  835 1225 1610  977 1535 1226 1053
 1047  789  997 1844 1216  774 1282 2259 1436  729 1092 1125 1699  728
  988  772 1080 1199 1586  958  660 1327 1721 1682 1214 1959  928  864
 1734  910 1501 1728  970  875  896  969 1710 1252 1200  572  991 1392
 1232 1572 1541  882 1149  808 1867 1707 1064 1362 1651 2158 1164 2234
  968  769  901 1340  936 1217 1224 1593 1549  725 1431  855 1726  929
 1713 1121 1279  865  848  720 1442 1696 1100 1180 1212  932  689 1236
  810 1137 1248 1498 1010  811 2392  630  483 1555 1194 1490  894 1414
 1014  798 1566  866  889  626 1222 1872  908 1375 1444 1306 1625 1302
 1314 1005 1604  963 1382 1482  926  764 1422  802 1052  778 1113 1095
 1363 1632 1560 2121 1156 1175 1468 1575  625 1085  858  698 1079 1148
 1644 1003  975 1041 1336 1210 1675 2000 1122 1035  861 1944  697  972
  793 2036  832  716 1153 1088 1372 1472 1249 1136 1553 1163 1898  803
 1719 1383 1445  596 1056 1629 1358  943 1619 1922 1536 1621 1215  993
  841 1684  536 1478 1848 1869 1453  616 1192 1167 1142 1352  495  790
  672 1394 1268 1287  953 1120  752 1319  847  904  914 1580 1856 1007
 1026  939  784 1269  658 1742  788  735 1144  876 1112 1288 1310 1165
  806 1620 1166 1071 1050 1276 1028  756 1344 1602 1470 1196  707  907
 1208 1412  765  827  734  694 2402 1440 1128 1258  933 1689 1888  956
  679  813 1533  888  786 1242  624 1663  833  979  575  849 1277 1634
 1502 1161 1976 1652 1493 2069 1718 1131 1850 1792  916  999 1073 1484
 1766  886 3228 1133  899 1801 1218 1368 2020 1378 1244 3138 1266 1476
  605 2515 1509  751  334  820  880 1159 1601 1838 1680  767  664 1377
  915  768  825 1069 1717 1126 1006 1048  897 1557 1389  996 1134 1496
  846  576  877 1320  703 1429 2042 1521  989 2028  838 1473  779  770
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        924 1826 1402 1647 1058  927  600 1186 1940 1029 1032 1299 1054  807
       1828 1548  980 1012 1116 1520 1350 1089 1554 1411  800 1567  981 1094
       1051  822  755  909 2113  525  851 1486 1686 1181 2097 1454 1465 1679
       1437  738 1839  792 2046  923 1291 1668 1195 1190  874  551 1419 2444
       1238 1067 1391 1800 1264  372 1824  859 1576 1178 1325  971 1698 1776
       1616 1146  948 1349 1464 1720 1038  742  757 1506 1836 1690 1220 1117
       1973 1204 1614 1430 1110 1342  966  976 1062 1127 1285  773 1966 1428
       1075 1309 1044  686 1661 1008  944 1489 2084 1434 1160  941 1516 1559
       1099 1701 1307 1456  918 1779  702 1512 1039 1002 1646 1547 1036  676
       1184 1462 1155 1090 1187  954  892 1709 1712  872 2217 1505 1068  951
       2364 1670 1063 1636 1020 1105 1015 1001  546  480 1229 1272 1316 1617
       1098 1788 1466  925 1905 1500 1207 1188 1381  965 1168  561  696 1542
        824  783  673  869 1241 1118 1407  750  691 1574 1504  985 1657 1664
       1082 2898 1687 1654 1055 1803 1532 2524 1733 1992 1771  930 1526 1091
       1523 1364 1130 1096 1338 1103 1154  799  893  829 1240 1459 1251 1247
       1390  438  950  887 1021 1552  812 1530  974  986 1042 1298 1811 1265
       1640 1432  959 1831 1261 1170 2129  818 1124 2411  949 1624  831 1622
        842  663  879  815 1630 1074 2196 1283 1660 1318 1211 2136 1138 1702
       1507 1361 1024 1141 1173 2076 1140 1034 2110 1405  760 1987 1104  713
       2018 1968 1332  935 1357  661 1724 1573 1582 1659 4692 1246  753 1203
       1294 1902 1274 1787 1061  708 1584 1334  693 1284 1172 2156 2053  992
       1078 1980 1281  814 2633 1571  984  754 2117  998 1416 1746 1525 1221
        741 1569 1223  962 1537 1932 1423  913 1578 2073 1256]
Total.No.Of.Unique Value: 753
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NUll values is True or False :False
2ndFlrSF: [ 854    0  866  756 1053  566  983  752 1142 1218  668 1320
631  716
   676  860 1519  530  808  977 1330  833  765  462  213  548  960  670
  1116  876  612 1031  881  790  755  592  939  520  639  656 1414  884
   729 1523  728  351  688  941 1032  848  836  475  739 1151  448  896
   524 1194  956 1070 1096  467  547  551  880  703  901  720  316 1518
   704 1178  754  601 1360  929  445  564  882  920  518  817 1257  741
   672 1306  504 1304 1100  730  689  591  888 1020  828  700  842 1286
   864  829 1092  709  844 1106  596  807  625  649  698  840  780  568
   795  648  975  702 1242 1818 1121  371  804  325  809 1200  871 1274
  1347 1332 1177 1080  695  167  915  576  605  862  495  403  838  517
  1427  784  711  468 1081  886  793  665  858  874  526  590  406 1157
   299  936  438 1098  766 1101 1028 1017 1254  378 1160  682  110  600
   678  834  384  512  930  868  224 1103  560  811  878  574  910  620
   687  546  902 1000  846 1067  914  660 1538 1015 1237  611  707  527
  1288  832  806 1182 1040  439  717  511 1129 1370  636  533  745  584
   812  684  595  988  800  677  573 1066  778  661 1440  872  788  843
   713  567  651  762  482  738  586  679  644  900  887 1872 1281  472
  1312  319  978 1093  473  664 1540 1276  441  348 1060  714  744 1203
   783 1097  734  767 1589  742  686 1128 1111 1174  787 1072 1088 1063
   545  966  623  432  581  540  769 1051  761  779  514  455 1426  785
   521  252  813 1120 1037 1169 1001 1215  928 1140 1243  571 1196 1038
   561  979  701  332  368  883 1336 1141  634  912  798  985  826  831
   750  456  602  855  336  408  980  998 1168 1208  797  850  898 1054
   895  954  772 1230  727  454  370  628  304  582 1122 1134  885  640
   580 1112  653  220  240 1362  534  539  650  918  933  712 1796  971
  1175  743  523 1216 2065  272  685  776  630  984  875  913  464 1039
  1259  940  892  725  924  764  925 1479  192  589  992  903  430  748
   587  994  950 1323  732 1357  557 1296  390 1185  873 1611  457  796
   908  550  989  932  358 1392  349  691 1349  768  208  622  857  556
  1044  708  626  904  510 1104  830  981  870  694 1152]
Total.No.Of.Unique Value: 417
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NUll values is True or False :False
LowQualFinSF: [   0 360 513 234 528 572 144 392 371 390 420 473 156 515
 80  53 232 481
 120 514 397 479 205 384]
Total.No.Of.Unique Value: 24
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NUll values is True or False :False
GrLivArea: [1710 1262 1786 1717 2198 1362 1694 2090 1774 1077 1040 2324
912 1494
 1253  854 1004 1296 1114 1339 2376 1108 1795 1060 1600  900 1704  520
 1317 1228 1234 1700 1561 2452 1097 1297 1057 1152 1324 1328  884  938
 1150 1752 2149 1656 1452  955 1470 1176  816 1842 1360 1425 1739 1720
 2945  780 1158 1111 1370 2034 2473 2207 1479  747 2287 2223  845 1718
 1086 1605  988  952 1285 1768 1230 2142 1337 1563 1065 1474 2417 1560
 1224 1526  990 1235  964 2291 1588  960  835 1225 1610 1732 1535 1226
 1818 1992 1047  789 1517 1844 1855 1430 2696 2259 2320 1458 1092 1125
 3222 1456 1123 1080 1199 1586  754  958  840 1348 1053 2157 2054 1327
 1721 1682 1214 1959 1852 1764  864 1734 1385 1501 1728 1709  875 2035
 1344  969 1993 1252 1200 1096 1968 1947 2462 1232 2668 1541  882 1616
 1355 1867 2161 1707 1382 1767 1651 2158 2060 1920 2234  968 1525 1802
 1340 2082 3608 1217 1593 2727 1431 1726 3112 2229 1713 1121 1279 1310
  848 1284 1442 1696 1100 2062 1212 1392 1236 1436 1954 1248 1498 2267
 1552 2392 1302 2520  987 1555 1194 2794  894 1960 1414 1744 1487 1566
  866 1440 2110 1872 1928 1375 1668 2144 1306 1625 1640 1314 1604 1792
 2574 1316  764 1422 1511 2192  778 1113 1939 1363 2270 1632 1548 2121
 2022 1982 1468 1575 1250  858 1396 1919 1716 2263 1644 1003 1558 1950
 1743 1336 3493 2000 2243 1406  861 1944  972 1118 2036 1641 1432 2353
 2646 1472 2596 2468 2730 1163 2978  803 1719 1383 2134 1192 1056 1629
 1358 1638 1922 1536 1621 1215 1908  841 1684 1112 1577 1478 1626 2728
 1869 1453  720 1595 1167 1142 1352 1924 1505 1574 1394 1268 1287 1664
  752 1319  904  914 2466 1856 1800 1691 1301 1797  784 1953 1269 1184
 2332 1367 1961  788 1034 1144 1812 1550 1288  672 1572 1620 1639 1680
 2172 2078 1276 1028 2097 1400 2624 1134 1602 2630 1196 1389  907 1208
 1412 1198 1365  630 1661  694 2402 1573 1258 1689 1888 1886 1376 1183
  813 1533 1756 1590 1242 1663 1666 1203 1935 1135 1660 1277 1634 1502
 1969 1072 1976 1652  970 1493 2643 1131 1850 1826 1216  999 1073 1484
 2414 1304 1578  886 3228 1820  899 1218 1801 1322 1911 1378 1041 1368
 2020 2119 2344 1796 2080 1294 1244 4676 2398 1266  928 2713  605 2515
 1509  827  334 1347 1724 1159 1601 1838 2285  767 1496 2183 1635  768
  825 2094 1069 1126 2046 1048 1446 1557  996 1674 2295 1647 2504 2132
  943 1692 1109 1477 1320 1429 2042 2775 2028  838  860 1473  935 1582
 2296  924 1402 1556 1904 1915 1986 2008 3194 1029 2153 1032 1120 1054
  832 1828 2262 2614  980 1512 1790 1116 1520 1350 1750 1554 1411 3395
  800 1387  796 1567 1518 1929 2704 1766  981 1094 1839 1665 1510 1469
 2113 1486 2448 1181 1936 2380 1679 1437 1180 1476 1369 1136 1441  792
  923 1291 1761 1102 1419 4316 2519 1539 1137  616 1148 1391 1164 2576
 1824  729 1178 2554 2418  971 1742 1698 1776 1146 2031  948 1349 1464
 2715 2256 2640 1529 1140 2098 1026 1471 1386 2531 1547 2365 1506 1714
 1836 3279 1220 1117 1973 1204 1614 1603 1110 1342 2084  901 2087 1145
 1062 2013 1895 1564  773 3140 1688 2822 1128 1428 1576 2138 1309 1044
 1008 1052  936 1733 1489 1434 2126 1223 1829 1516 1067 1559 1099 1482
 1165 1416 1701 1775 2358 1646 1445 1779 1481 2654 1426 1039 1372 1002
 1949  910 2610 2224 1155 1090 2230  892 1712 1393 2217 1683 1068  951
 2240 2364 1670  902 1063 1636 2057 2274 1015 2002  480 1229 2127 2200
 1617 1686 2374 1978 1788 2236 1466  925 1905 1500 2069 1971 1962 2403
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 1381  965 1958 2872 1894 1308 1098 1095  918 2019  869 1241 2612 2290
 1940 2030 1851 1050  944  691 1504  985 1657 1522 1271 1022 1082 1132
 2898 1264 3082 1654  954 1803 2329 2524 2868 1771  930 1977 1989 1523
 1364 2184 1991 1338 2337 1103 1154 2260 1571 1611 2521  893 1240 1740
 1459 1251 1247 1088  438  950 2622 2021 1690 1658 1964  833 1012  698
 1005 1530 1981  974 2210  986 1020 1868 2828 1006 1298  932 1811 1265
 1580 1876 1671 2108 3627 1261 3086 2345 1343 1124 2514 4476 1130 1221
 1699 1624 1804 1622 1863 1630 1074 2196 1283 1845 1902 1211 1846 2136
 1490 1138 1933 1702 1507 2620 1190 1188 1784 1948 1141 1173 2076 1553
 2058 1405  874 2167 1987 1166 1675 1889 2018 3447 1524 1357 1395 2447
 1659 1970 2372 5642 1246 1983 2526 1708 1122 1274 2810 2599 2112 1787
 1923  708  774 2792 1334  693 1861  872 2169 1913 2156 2634 3238 1865
 1078 1980 2601 1738 1475 1374 2633  790 2117 1762 2784 1746 1584 1912
 2482 1687 1513 1608 2093 1840 1848 1569 2450 2201  804 1537 1932 1725
 2555 2007  913 1346 2073 2340 1256]
Total.No.Of.Unique Value: 861
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----------------
NUll values is True or False :False
BsmtFullBath: [1 0 2 3]
Total.No.Of.Unique Value: 4
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NUll values is True or False :False
BsmtHalfBath: [0 1 2]
Total.No.Of.Unique Value: 3
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--------------------------------------------------------------------------
----------------
NUll values is True or False :False
FullBath: [2 1 3 0]
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
HalfBath: [1 0 2]
Total.No.Of.Unique Value: 3
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
BedroomAbvGr: [3 4 1 2 0 5 6 8]
Total.No.Of.Unique Value: 8
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NUll values is True or False :False
KitchebvGr: [1 2 3 0]
Total.No.Of.Unique Value: 4
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NUll values is True or False :False
KitchenQual: ['Gd' 'TA' 'Ex' 'Fa']
Total.No.Of.Unique Value: 4
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NUll values is True or False :False
TotRmsAbvGrd: [ 8  6  7  9  5 11  4 10 12  3  2 14]
Total.No.Of.Unique Value: 12
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NUll values is True or False :False
Functiol: ['Typ' 'Min1' 'Maj1' 'Min2' 'Mod' 'Maj2' 'Sev']
Total.No.Of.Unique Value: 7
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NUll values is True or False :False
Fireplaces: [0 1 2 3]
Total.No.Of.Unique Value: 4
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NUll values is True or False :True
FireplaceQu: [nan 'TA' 'Gd' 'Fa' 'Ex' 'Po']
Total.No.Of.Unique Value: 5
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NUll values is True or False :True
GarageType: ['Attchd' 'Detchd' 'BuiltIn' 'CarPort' nan 'Basment' '2Types
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Total.No.Of.Unique Value: 6
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NUll values is True or False :True
GarageYrBlt: [2003. 1976. 2001. 1998. 2000. 1993. 2004. 1973. 1931. 193
9. 1965. 2005.
 1962. 2006. 1960. 1991. 1970. 1967. 1958. 1930. 2002. 1968. 2007. 2008.
 1957. 1920. 1966. 1959. 1995. 1954. 1953.   nan 1983. 1977. 1997. 1985.
 1963. 1981. 1964. 1999. 1935. 1990. 1945. 1987. 1989. 1915. 1956. 1948.
 1974. 2009. 1950. 1961. 1921. 1900. 1979. 1951. 1969. 1936. 1975. 1971.
 1923. 1984. 1926. 1955. 1986. 1988. 1916. 1932. 1972. 1918. 1980. 1924.
 1996. 1940. 1949. 1994. 1910. 1978. 1982. 1992. 1925. 1941. 2010. 1927.
 1947. 1937. 1942. 1938. 1952. 1928. 1922. 1934. 1906. 1914. 1946. 1908.
 1929. 1933.]
Total.No.Of.Unique Value: 97
------------------------------------------------------------------------------
------------------------------------------------------------------------------
----------------
NUll values is True or False :True
GarageFinish: ['RFn' 'Unf' 'Fin' nan]
Total.No.Of.Unique Value: 3
------------------------------------------------------------------------------
------------------------------------------------------------------------------
----------------
NUll values is True or False :False
GarageCars: [2 3 1 0 4]
Total.No.Of.Unique Value: 5
------------------------------------------------------------------------------
------------------------------------------------------------------------------
----------------
NUll values is True or False :False
```

```
GarageArea: [ 548  460  608  642  836  480  636  484  468  205  384  736
352  840
   576  516  294  853  280  534  572  270  890  772  319  240  250  271
   447  556  691  672  498  246    0  440  308  504  300  670  826  386
   388  528  894  565  641  288  645  852  558  220  667  360  427  490
   379  297  283  509  405  758  461  400  462  420  432  506  684  472
   366  476  410  740  648  273  546  325  792  450  180  430  594  390
   540  264  530  435  453  750  487  624  471  318  766  660  470  720
   577  380  434  866  495  564  312  625  680  678  726  532  216  303
   789  511  616  521  451 1166  252  497  682  666  786  795  856  473
   398  500  349  454  644  299  210  431  438  675  968  721  336  810
   494  457  818  463  604  389  538  520  309  429  673  884  868  492
   413  924 1053  439  671  338  573  732  505  575  626  898  529  685
   281  539  418  588  282  375  683  843  552  870  888  746  708  513
  1025  656  872  292  441  189  880  676  301  474  706  617  445  200
   592  566  514  296  244  610  834  639  501  846  560  596  600  373
   947  350  396  864  304  784  696  569  628  550  493  578  198  422
   228  526  525  908  499  508  694  874  164  402  515  286  603  900
   583  889  858  502  392  403  527  765  367  426  615  871  570  406
   590  612  650 1390  275  452  842  816  621  544  486  230  261  531
   393  774  749  364  627  260  256  478  442  562  512  839  330  711
  1134  416  779  702  567  832  326  551  606  739  408  475  704  983
   768  632  541  320  800  831  554  878  752  614  481  496  423  841
   895  412  865  630  605  602  618  444  397  455  409  820 1020  598
   857  595  433  776 1220  458  613  456  436  812  686  611  425  343
   479  619  902  574  523  414  738  354  483  327  756  690  284  833
   601  533  522  788  555  689  796  808  510  255  424  305  368  824
   328  160  437  665  290  912  905  542  716  586  467  582 1248 1043
   254  712  719  862  928  782  466  714 1052  225  234  324  306  830
   807  358  186  693  482  813  995  757 1356  459  701  322  315  668
   404  543  954  850  477  276  518 1014  753 1418  213  844  860  748
   248  287  825  647  342  770  663  377  804  936  722  208  662  754
   622  620  370 1069  372  923  192]
Total.No.Of.Unique Value: 441
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
----------------
NUll values is True or False :True
GarageQual: ['TA' 'Fa' 'Gd' nan 'Ex' 'Po']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
----------------
NUll values is True or False :True
GarageCond: ['TA' 'Fa' nan 'Gd' 'Po' 'Ex']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
----------------
NUll values is True or False :False
PavedDrive: ['Y' 'N' 'P']
Total.No.Of.Unique Value: 3
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
----------------
NUll values is True or False :False
WoodDeckSF: [  0  298  192   40  255  235   90  147  140  160   48  240  171  100  406
222  288   49
 203  113  392  145  196  168  112  106  857  115  120   12  576  301  144  300   74  127
 232  158  352  182  180  166  224   80  367   53  188  105   24   98  276  200  409  239
```

```
 400 476 178 574 237 210 441 116 280 104  87 132 238 149 355  60 139 108
 351 209 216 248 143 365 370  58 197 263 123 138 333 250 292  95 262  81
 289 124 172 110 208 468 256 302 190 340 233 184 201 142 122 155 670 135
 495 536 306  64 364 353  66 159 146 296 125  44 215 264  88  89  96 414
 519 206 141 260 324 156 220  38 261 126  85 466 270  78 169 320 268  72
 349  42  35 326 382 161 179 103 253 148 335 176 390 328 312 185 269 195
  57 236 517 304 198 426  28 316 322 307 257 219 416 344 380  68 114 327
 165 187 181  92 228 245 503 315 241 303 133 403  36  52 265 207 150 290
 486 278  70 418 234  26 342  97 272 121 243 511 154 164 173 384 202  56
 321  86 194 421 305 117 550 509 153 394 371  63 252 136 186 170 474 214
 199 728 436  55 431 448 361 362 162 229 439 379 356  84 635 325  33 212
 314 242 294  30 128  45 177 227 218 309 404 500 668 402 283 183 175 586
 295  32 366 736]
Total.No.Of.Unique Value: 274
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
OpenPorchSF: [ 61   0  42  35  84  30  57 204   4  21  33 213 112 102 15
4 159 110  90
  56  32  50 258  54  65  38  47  64  52 138 104  82  43 146  75  72  70
  49  11  36 151  29  94 101 199  99 234 162  63  68  46  45 122 184 120
  20  24 130 205 108  80  66  48  25  96 111 106  40 114   8 136 132  62
 228  60 238 260  27  74  16 198  26  83  34  55  22  98 172 119 208 105
 140 168  28  39 148  12  51 150 117 250  10  81  44 144 175 195 128  76
  17  59 214 121  53 231 134 192 123  78 187  85 133 176 113 137 125 523
 100 285  88 406 155  73 182 502 274 158 142 243 235 312 124 267 265  87
 288  23 152 341 116 160 174 247 291  18 170 156 166 129 418 240  77 364
 188 207  67  69 131 191  41 118 252 189 282 135  95 224 169 319  58  93
 244 185 200  92 180 263 304 229 103 211 287 292 241 547  91  86 262 210
 141  15 126 236]
Total.No.Of.Unique Value: 202
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
EnclosedPorch: [  0 272 228 205 176  87 172 102  37 144  64 114 202 128
156  44  77 192
 140 180 183  39 184  40 552  30 126  96  60 150 120 112 252  52 224 234
 244 268 137  24 108 294 177 218 242  91 160 130 169 105  34 248 236  32
  80 115 291 116 158 210  36 200  84 148 136 240  54 100 189 293 164 216
 239  67  90  56 129  98 143  70 386 154 185 134 196 264 275 230 254  68
 194 318  48  94 138 226 174  19 170 220 214 280 190 330 208 145 259  81
  42 123 162 286 168  20 301 198 221 212  50  99]
Total.No.Of.Unique Value: 120
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
3SsnPorch: [  0 320 407 130 180 168 140 508 238 245 196 144 182 162  23
216  96 153
 290 304]
Total.No.Of.Unique Value: 20
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
ScreenPorch: [  0 176 198 291 252  99 184 168 130 142 192 410 224 266 17
0 154 153 144
 128 259 160 271 234 374 185 182  90 396 140 276 180 161 145 200 122  95
```

```
       120   60 126 189 260 147 385 287 156 100 216 210 197 204 225 152 175 312
       222 265 322 190 233  63  53 143 273 288 263  80 163 116 480 178 440 155
       220 119 165  40]
Total.No.Of.Unique Value: 76
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :False
PoolArea: [  0 512 648 576 555 480 519 738]
Total.No.Of.Unique Value: 8
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :True
PoolQC: [nan 'Ex' 'Fa' 'Gd']
Total.No.Of.Unique Value: 3
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :True
Fence: [nan 'MnPrv' 'GdWo' 'GdPrv' 'MnWw']
Total.No.Of.Unique Value: 4
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :True
MiscFeature: [nan 'Shed' 'Gar2' 'Othr' 'TenC']
Total.No.Of.Unique Value: 4
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :False
MiscVal: [    0    700    350    500    400    480    450 15500  1200    800  2
000    600
   3500  1300     54    620    560   1400   8300   1150   2500]
Total.No.Of.Unique Value: 21
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :False
MoSold: [ 2  5  9 12 10  8 11  4  1  7  3  6]
Total.No.Of.Unique Value: 12
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :False
YrSold: [2008 2007 2006 2009 2010]
Total.No.Of.Unique Value: 5
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :False
SaleType: ['WD' 'New' 'COD' 'ConLD' 'ConLI' 'CWD' 'ConLw' 'Con' 'Oth']
Total.No.Of.Unique Value: 9
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :False
SaleCondition: ['Normal' 'Abnorml' 'Partial' 'AdjLand' 'Alloca' 'Family
']
```

```
Total.No.Of.Unique Value: 6
----------------------------------------------------------------------
----------------------------------------------------------------------
-----------------
NUll values is True or False :False
SalePrice: [208500 181500 223500 140000 250000 143000 307000 200000 1299
00 118000
 129500 345000 144000 279500 157000 132000 149000  90000 159000 139000
 325300 139400 230000 154000 256300 134800 306000 207500  68500  40000
 149350 179900 165500 277500 309000 145000 153000 109000  82000 160000
 170000 130250 141000 319900 239686 249700 113000 127000 177000 114500
 110000 385000 130000 180500 172500 196500 438780 124900 158000 101000
 202500 219500 317000 180000 226000  80000 225000 244000 185000 144900
 107400  91000 135750 136500 193500 153500 245000 126500 168500 260000
 174000 164500  85000 123600 109900  98600 163500 133900 204750 214000
  94750  83000 128950 205000 178000 118964 198900 169500 100000 115000
 190000 136900 383970 217000 259500 176000 155000 320000 163990 136000
 153900 181000  84500 128000  87000 150000 150750 220000 171000 231500
 166000 204000 125000 105000 222500 122000 372402 235000  79000 109500
 269500 254900 162500 412500 103200 152000 127500 325624 183500 228000
 128500 215000 239000 163000 184000 243000 211000 501837 200100 120000
 475000 173000 135000 153337 286000 315000 192000 148500 311872 104000
 274900 171500 112000 143900 277000  98000 186000 252678 156000 161750
 134450 210000 107000 311500 167240 204900  97000 386250 290000 106000
 192500 148000 403000  94500 128200 216500  89500 185500 194500 318000
 262500 110500 241500 137000  76500 276000 151000  73000 175500 179500
 120500 266000 124500 201000 415298 228500 244600 179200 164700  88000
 153575 233230 135900 131000 167000 142500 175000 158500 267000 149900
 295000 305900  82500 360000 165600 119900 375000 188500 270000 187500
 342643 354000 301000 126175 242000 324000 145250 214500  78000 119000
 284000 207000 228950 377426 202900  87500 140200 151500 157500 437154
 318061  95000 105900 177500 134000 280000 198500 147000 165000 162000
 172400 134432 123000  61000 340000 394432 179000 187750 213500  76000
 240000  81000 191000 426000 106500 129000  67000 241000 245500 164990
 108000 258000 168000 339750  60000 222000 181134 149500 126000 142000
 206300 275000 109008 195400  85400  79900 122500 212000 116000  90350
 555000 162900 199900 119500 188000 256000 161000 263435  62383 188700
 124000 178740 146500 187000 440000 251000 132500 208900 380000 297000
  89471 326000 374000 164000  86000 133000 172785  91300  34900 430000
 226700 289000 208300 164900 202665  96500 402861 265000 234000 106250
 184750 315750 446261 200624 107500  39300 111250 272000 248000 213250
 179665 229000 263000 112500 255500 121500 268000 325000 316600 135960
 142600 224500 118500 146000 131500 181900 253293 369900  79500 185900
 451950 138000 319000 114504 194201 217500 221000 359100 313000 261500
  75500 137500 183200 105500 314813 305000 165150 139900 209500  93000
 264561 274000 370878 143250  98300 205950 350000 145500  97500 197900
 402000 423000 230500 173500 103600 257500 372500 159434 285000 227875
 148800 392000 194700 755000 335000 108480 141500  89000 123500 138500
 196000 312500 361919 213000  55000 302000 254000 179540  52000 102776
 189000 130500 159500 341000 103000 236500 131400  93500 239900 299800
 236000 265979 260400 275500 158900 179400 215200 337000 264132 216837
 538000 134900 102000 395000 221500 175900 187100 161500 233000 107900
 160200 146800 269790 143500 485000 582933 227680 135500 159950 144500
  55993 157900 224900 271000 224000 183000 139500 232600 147400 237000
 139950 174900 133500 189950 250580 248900 169000 200500  66500 303477
 132250 328900 122900 154500 118858 142953 611657 125500 255000 154300
 173733  75000  35311 238000 176500 145900 169990 193000 117500 184900
 253000 239799 244400 150900 197500 172000 116500 214900 178900  37900
  99500 182000 167500  85500 178400 336000 159895 255900 117000 395192
 195000 197000 348000 173900 337500 121600 206000 232000 136905 119200
```

```
227000 203000 213490 194000 287000 293077 310000 119750  84000 315500
262280 278000 139600 556581  84900 176485 200141 185850 328000 167900
151400  91500 138800 155900  83500 252000  92900 176432 274725 134500
184100 133700 118400 212900 163900 259000 239500  94000 424870 174500
116900 201800 218000 235128 108959 233170 245350 625000 171900 154900
392500 745000 186700 104900 262000 219210 116050 271900 229456  80500
137900 367294 101800 138887 265900 248328 465000 186500 169900 171750
294000 165400 301500  99900 128900 183900 378500 381000 185750  68400
150500 281000 333168 206900 295493 111000 156500  72500  52500 155835
108500 283463 410000 156932 144152 216000 274300 466500  58500 237500
377500 246578 281213 137450 193879 282922 257000 223000 274970 182900
```

Generate a separate dataset for numerical and categorical variables

In [6]: `data.columns`

Out[6]: Index(['Id', 'MSSubClass', 'MSZoning', 'LotFrontage', 'LotArea', 'Street
        ',
               'Alley', 'LotShape', 'LandContour', 'Utilities', 'LotConfig',
               'LandSlope', 'Neighborhood', 'Condition1', 'Condition2', 'BldgTyp
        e',
               'HouseStyle', 'OverallQual', 'OverallCond', 'YearBuilt', 'YearRem
        odAdd',
               'RoofStyle', 'RoofMatl', 'Exterior1st', 'Exterior2nd', 'MasVnrTyp
        e',
               'MasVnrArea', 'ExterQual', 'ExterCond', 'Foundation', 'BsmtQual',
               'BsmtCond', 'BsmtExposure', 'BsmtFinType1', 'BsmtFinSF1',
               'BsmtFinType2', 'BsmtFinSF2', 'BsmtUnfSF', 'TotalBsmtSF', 'Heatin
        g',
               'HeatingQC', 'CentralAir', 'Electrical', '1stFlrSF', '2ndFlrSF',
               'LowQualFinSF', 'GrLivArea', 'BsmtFullBath', 'BsmtHalfBath', 'Ful
        lBath',
               'HalfBath', 'BedroomAbvGr', 'KitchebvGr', 'KitchenQual', 'TotRmsA
        bvGrd',
               'Functiol', 'Fireplaces', 'FireplaceQu', 'GarageType', 'GarageYrB
        lt',
               'GarageFinish', 'GarageCars', 'GarageArea', 'GarageQual', 'Garage
        Cond',
               'PavedDrive', 'WoodDeckSF', 'OpenPorchSF', 'EnclosedPorch', '3Ssn
        Porch',
               'ScreenPorch', 'PoolArea', 'PoolQC', 'Fence', 'MiscFeature', 'Mis
        cVal',
               'MoSold', 'YrSold', 'SaleType', 'SaleCondition', 'SalePrice'],
              dtype='object')
```

In [7]:
```python
for column in data:
    if data[column].dtypes == 'object':
        print(column)
```

```
MSZoning
Street
Alley
LotShape
LandContour
Utilities
LotConfig
LandSlope
Neighborhood
Condition1
Condition2
BldgType
HouseStyle
RoofStyle
RoofMatl
Exterior1st
Exterior2nd
MasVnrType
ExterQual
ExterCond
Foundation
BsmtQual
BsmtCond
BsmtExposure
BsmtFinType1
BsmtFinType2
Heating
HeatingQC
CentralAir
Electrical
KitchenQual
Functiol
FireplaceQu
GarageType
GarageFinish
GarageQual
GarageCond
PavedDrive
PoolQC
Fence
MiscFeature
SaleType
SaleCondition
```

```
In [8]: for column in data:
            if data[column].dtypes != 'object':
                print(column)
```

```
Id
MSSubClass
LotFrontage
LotArea
OverallQual
OverallCond
YearBuilt
YearRemodAdd
MasVnrArea
BsmtFinSF1
BsmtFinSF2
BsmtUnfSF
TotalBsmtSF
1stFlrSF
2ndFlrSF
LowQualFinSF
GrLivArea
BsmtFullBath
BsmtHalfBath
FullBath
HalfBath
BedroomAbvGr
KitchebvGr
TotRmsAbvGrd
Fireplaces
GarageYrBlt
GarageCars
GarageArea
WoodDeckSF
OpenPorchSF
EnclosedPorch
3SsnPorch
ScreenPorch
PoolArea
MiscVal
MoSold
YrSold
SalePrice
```

Numerical Data

```
In [9]: no_data = pd.DataFrame(data.drop(['MSZoning','Street','Alley','LotShape
        ','LandContour','Utilities','LotConfig','LandSlope','Neighborhood','Condi
        tion1','Condition2','BldgType','HouseStyle','RoofStyle','RoofMatl','Exter
        ior1st','Exterior2nd','MasVnrType','ExterQual','ExterCond','Foundation','
        BsmtQual','BsmtCond','BsmtExposure','BsmtFinType1','BsmtFinType2','Heatin
        g','HeatingQC','CentralAir','Electrical','KitchenQual','Functiol','Firepl
        aceQu','GarageType','GarageFinish','GarageQual','GarageCond','PavedDrive
        ','PoolQC','Fence','MiscFeature','SaleType','SaleCondition'],axis=1))
```

In [10]:
```python
for column in no_data:
    print(f'NUll values is True or False :{no_data[column].isnull().any
()}')
    print(f'{column}: {no_data[column].unique()}')
    print(f'Total.No.Of.Unique Value: {no_data[column].nunique()}')
    print
('-----------------------------------------------------------------------
-----------------------------------------------------------------------
----------------')
```

```
            NUll values is True or False :False
            Id: [    1     2     3 ... 1458 1459 1460]
            Total.No.Of.Unique Value: 1460
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            MSSubClass: [ 60  20  70  50 190  45  90 120  30  85  80 160  75 180  4
            0]
            Total.No.Of.Unique Value: 15
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------------
            ----------------
            NUll values is True or False :True
            LotFrontage: [ 65.  80.  68.  60.  84.  85.  75.  nan  51.  50.  70.  9
            1.  72.  66.
              101.  57.  44. 110.  98.  47. 108. 112.  74. 115.  61.  48.  33.  52.
              100.  24.  89.  63.  76.  81.  95.  69.  21.  32.  78. 121. 122.  40.
              105.  73.  77.  64.  94.  34.  90.  55.  88.  82.  71. 120. 107.  92.
              134.  62.  86. 141.  97.  54.  41.  79. 174.  99.  67.  83.  43. 103.
               93.  30. 129. 140.  35.  37. 118.  87. 116. 150. 111.  49.  96.  59.
               36.  56. 102.  58.  38. 109. 130.  53. 137.  45. 106. 104.  42.  39.
              144. 114. 128. 149. 313. 168. 182. 138. 160. 152. 124. 153.  46.]
            Total.No.Of.Unique Value: 110
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            LotArea: [ 8450  9600 11250 ... 17217 13175  9717]
            Total.No.Of.Unique Value: 1073
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            OverallQual: [ 7  6  8  5  9  4 10  3  1  2]
            Total.No.Of.Unique Value: 10
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            OverallCond: [5 8 6 7 4 2 3 9 1]
            Total.No.Of.Unique Value: 9
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
            YearBuilt: [2003 1976 2001 1915 2000 1993 2004 1973 1931 1939 1965 2005
            1962 2006
             1960 1929 1970 1967 1958 1930 2002 1968 2007 1951 1957 1927 1920 1966
             1959 1994 1954 1953 1955 1983 1975 1997 1934 1963 1981 1964 1999 1972
             1921 1945 1982 1998 1956 1948 1910 1995 1991 2009 1950 1961 1977 1985
             1979 1885 1919 1990 1969 1935 1988 1971 1952 1936 1923 1924 1984 1926
             1940 1941 1987 1986 2008 1908 1892 1916 1932 1918 1912 1947 1925 1900
             1980 1989 1992 1949 1880 1928 1978 1922 1996 2010 1946 1913 1937 1942
             1938 1974 1893 1914 1906 1890 1898 1904 1882 1875 1911 1917 1872 1905]
            Total.No.Of.Unique Value: 112
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------------
            ----------------
            NUll values is True or False :False
```

```
        YearRemodAdd: [2003 1976 2002 1970 2000 1995 2005 1973 1950 1965 2006 19
        62 2007 1960
         2001 1967 2004 2008 1997 1959 1990 1955 1983 1980 1966 1963 1987 1964
         1972 1996 1998 1989 1953 1956 1968 1981 1992 2009 1982 1961 1993 1999
         1985 1979 1977 1969 1958 1991 1971 1952 1975 2010 1984 1986 1994 1988
         1954 1957 1951 1978 1974]
        Total.No.Of.Unique Value: 61
        ------------------------------------------------------------------------
        ------------------------------------------------------------------------
        -----------------
        NUll values is True or False :True
        MasVnrArea: [1.960e+02 0.000e+00 1.620e+02 3.500e+02 1.860e+02 2.400e+02
        2.860e+02
         3.060e+02 2.120e+02 1.800e+02 3.800e+02 2.810e+02 6.400e+02 2.000e+02
         2.460e+02 1.320e+02 6.500e+02 1.010e+02 4.120e+02 2.720e+02 4.560e+02
         1.031e+03 1.780e+02 5.730e+02 3.440e+02 2.870e+02 1.670e+02 1.115e+03
         4.000e+01 1.040e+02 5.760e+02 4.430e+02 4.680e+02 6.600e+01 2.200e+01
         2.840e+02 7.600e+01 2.030e+02 6.800e+01 1.830e+02 4.800e+01 2.800e+01
         3.360e+02 6.000e+02 7.680e+02 4.800e+02 2.200e+02 1.840e+02 1.129e+03
         1.160e+02 1.350e+02 2.660e+02 8.500e+01 3.090e+02 1.360e+02 2.880e+02
         7.000e+01 3.200e+02 5.000e+01 1.200e+02 4.360e+02 2.520e+02 8.400e+01
         6.640e+02 2.260e+02 3.000e+02 6.530e+02 1.120e+02 4.910e+02 2.680e+02
         7.480e+02 9.800e+01 2.750e+02 1.380e+02 2.050e+02 2.620e+02 1.280e+02
         2.600e+02 1.530e+02 6.400e+01 3.120e+02 1.600e+01 9.220e+02 1.420e+02
         2.900e+02 1.270e+02 5.060e+02 2.970e+02      nan 6.040e+02 2.540e+02
         3.600e+01 1.020e+02 4.720e+02 4.810e+02 1.080e+02 3.020e+02 1.720e+02
         3.990e+02 2.700e+02 4.600e+01 2.100e+02 1.740e+02 3.480e+02 3.150e+02
         2.990e+02 3.400e+02 1.660e+02 7.200e+01 3.100e+01 3.400e+01 2.380e+02
         1.600e+03 3.650e+02 5.600e+01 1.500e+02 2.780e+02 2.560e+02 2.250e+02
         3.700e+02 3.880e+02 1.750e+02 2.960e+02 1.460e+02 1.130e+02 1.760e+02
         6.160e+02 3.000e+01 1.060e+02 8.700e+02 3.620e+02 5.300e+02 5.000e+02
         5.100e+02 2.470e+02 3.050e+02 2.550e+02 1.250e+02 1.000e+02 4.320e+02
         1.260e+02 4.730e+02 7.400e+01 1.450e+02 2.320e+02 3.760e+02 4.200e+01
         1.610e+02 1.100e+02 1.800e+01 2.240e+02 2.480e+02 8.000e+01 3.040e+02
         2.150e+02 7.720e+02 4.350e+02 3.780e+02 5.620e+02 1.680e+02 8.900e+01
         2.850e+02 3.600e+02 9.400e+01 3.330e+02 9.210e+02 7.620e+02 5.940e+02
         2.190e+02 1.880e+02 4.790e+02 5.840e+02 1.820e+02 2.500e+02 2.920e+02
         2.450e+02 2.070e+02 8.200e+01 9.700e+01 3.350e+02 2.080e+02 4.200e+02
         1.700e+02 4.590e+02 2.800e+02 9.900e+01 1.920e+02 2.040e+02 2.330e+02
         1.560e+02 4.520e+02 5.130e+02 2.610e+02 1.640e+02 2.590e+02 2.090e+02
         2.630e+02 2.160e+02 3.510e+02 6.600e+02 3.810e+02 5.400e+01 5.280e+02
         2.580e+02 4.640e+02 5.700e+01 1.470e+02 1.170e+03 2.930e+02 6.300e+02
         4.660e+02 1.090e+02 4.100e+01 1.600e+02 2.890e+02 6.510e+02 1.690e+02
         9.500e+01 4.420e+02 2.020e+02 3.380e+02 8.940e+02 3.280e+02 6.730e+02
         6.030e+02 1.000e+00 3.750e+02 9.000e+01 3.800e+01 1.570e+02 1.100e+01
         1.400e+02 1.300e+02 1.480e+02 8.600e+02 4.240e+02 1.047e+03 2.430e+02
         8.160e+02 3.870e+02 2.230e+02 1.580e+02 1.370e+02 1.150e+02 1.890e+02
         2.740e+02 1.170e+02 6.000e+01 1.220e+02 9.200e+01 4.150e+02 7.600e+02
         2.700e+01 7.500e+01 3.610e+02 1.050e+02 3.420e+02 2.980e+02 5.410e+02
         2.360e+02 1.440e+02 4.230e+02 4.400e+01 1.510e+02 9.750e+02 4.500e+02
         2.300e+02 5.710e+02 2.400e+01 5.300e+01 2.060e+02 1.400e+01 3.240e+02
         2.950e+02 3.960e+02 6.700e+01 1.540e+02 4.250e+02 4.500e+01 1.378e+03
         3.370e+02 1.490e+02 1.430e+02 5.100e+01 1.710e+02 2.340e+02 6.300e+01
         7.660e+02 3.200e+01 8.100e+01 1.630e+02 5.540e+02 2.180e+02 6.320e+02
         1.140e+02 5.670e+02 3.590e+02 4.510e+02 6.210e+02 7.880e+02 8.600e+01
         7.960e+02 3.910e+02 2.280e+02 8.800e+01 1.650e+02 4.280e+02 4.100e+02
         5.640e+02 3.680e+02 3.180e+02 5.790e+02 6.500e+01 7.050e+02 4.080e+02
         2.440e+02 1.230e+02 3.660e+02 7.310e+02 4.480e+02 2.940e+02 3.100e+02
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                  747  280  179  456 1351   24  763  182  104 1810  384  490  649  632
                  941  739  912 1013  603 1880  565  320  462  228  336  448 1201   33
                  588  600  713 1046  648  310 1162  520  108  569 1200  224  705  444
                  250  984   35  774  419  170 1470  938  570  300  120  116  512  567
                  445  695  405 1005  668  821  432 1300  507  679 1332  209  680  716
                 1400  416  429  222   57  660 1016  370  351  379 1288  360  639  495
                  288 1398  477  831 1904  436  352  611 1086  297  626  560  390  566
                 1126 1036 1088  641  617  662  312 1065  787  468   36  822  378  946
                  341   16  550  524   56  321  842  689  625  358  402   94 1078  329
                  929  697 1573  270  922  503 1334  361  672  506  714  403  751  226
                  620  546  392  421  905  904  430  614  450  210  292  795 1285  819
                  420  841  281  894 1464  700  262 1274  518 1236  425  692  987  970
                   28  256 1619   40  846 1124  720  828 1249  810  213  585  129  498
                 1270  573 1410 1082  236  388  334  874  956  773  399  162  712  609
                  371  540   72  623  428  350  298 1445  218  985  631 1280  241  690
                  266  777  812  786 1116  789 1056   50 1128  775 1309 1246  986  616
                 1518  664  387  471  385  365 1767  133  642  247  331  742 1606  916
                  185  544  553  326  778  386  426  368  459 1350 1196  630  994  168
                 1261 1567  299  897  607  836  515  374 1231  111  356  400  698 1247
                  257  380   27  141  991  650  521 1436 2260  719  377 1330  348 1219
                  783  969  673 1358 1260  144  584  554 1002  619  180  559  308  866
                  895  637  604 1302 1071  290  728    2 1441  943  231  414  349  442
                  328  594  816 1460 1324 1338  685 1422 1283   81  454  903  605  990
                  206  150  457   48  871   41  674  624  480 1154  738  493 1121  282
                  500  131 1696  806 1361  920 1721  187 1138  988  193  551  767 1186
                  892  311  827  543 1003 1059  239  945   20 1455  965  980  863  533
                 1084 1173  523 1148  191 1234  375  808  724  152 1180  252  832  575
                  919  439  381  438  549  612 1163  437  394 1416  422  762  975 1097
                  251  686  656  568  539  862  197  516  663  608 1636  784  249 1040
                  483  196  572  338  330  156 1390  513  460  659  364  564  306  505
                  932  750   64  633 1170  899  902 1238  528 1024 1064  285 2188  465
                  322  860  599  354   63  223  301  443  489  284  294  814  165  552
                  833  464  936  772 1440  748  982  398  562  484  417  699  696  896
                  556 1106  651  867  854 1646 1074  536 1172  915  595 1237  273  684
                  324 1165  138 1513  317 1012 1022  509  900 1085 1104  240  383  644
                  397  740  837  220  586  535  410   75  824  592 1039  510  423  661
                  248  704  412 1032  219  708  415 1004  353  702  369  622  212  645
                  852 1150 1258  275  176  296  538 1157  492 1198 1387  522  658 1216
                 1480 2096 1159  440 1456  883  547  788  485  340 1220  427  344  756
                 1540  666  803 1000  885 1386  319  534  125 1314  602  192  593  804
                 1053  532 1158 1014  194  167  776 5644  694 1572  746 1406  925  482
                  189  765   80 1443  259  735  734 1447  548  315 1282  408  309  203
                  865  204  790 1320  769 1070  264  759 1373  976  781   25 1110  404
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                  692  228  125 1063  620  175  820 1474  264  479  147  232  380  544
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  495   174  1127   139   202   645   123   551   219   606   612   480   182   132
  336   468   287    35   499   723   119    40   117   239    80   472    64  1057
  127   630   128   377   764   345  1085   435   823   500   290   324   634   411
  841  1061   466   396   354   149   193   273   465   400   682   557   230   106
  791   240   547   469   177   108   600   492   211   168  1031   438   375   144
   81   906   608   276   661    68   173   972   105   420   546   334   352   872
  110   627   163  1029]
Total.No.Of.Unique Value: 144
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175  1494
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 1296    83  1632   736   192   612   816    32   935   321   860  1410   148   217
  530  1346   576   318  1143  1035   440   747   701   343   280   404   840   724
  295  1768   448    36  1530  1065   384  1288   684  1013   402   635   163   168
  176   370   350   381   410   741  1226  1053   641   516   793  1139   550   905
  104   310   252  1125   203   728   732   510   899  1362    30   958   556   413
  479   297   658   262   891  1304   519  1907   336   107   432   403   811   396
  970   506   884   400   896   253   409    93  1200   572   774   769  1335   340
  882   779   112   470   294  1686   360   441   354   700   725   320   554   312
  968   504  1107   577   660    99   871   474   289   600   755   625  1121   276
  186  1424  1140   375    92   305  1176    78   274   311   710   686   457  1232
 1498  1010   160  2336   630   638   162    70  1357  1194   773   483   235   125
 1390   594  1694   488   357   626   916  1020  1367   798   452   392   975   361
  270   602  1482   680   606    88   342   212  1095    96   628  1560   744  2121
  768   386  1468  1145   244   698  1079   570   476   131   184   143  1092   324
 1541  1470   536   319   599   622   179   292   286    80   712   291   153  1088
 1249   166   906   604   100   818   844   596   210  1603   115   103   673   726
  995   967   721  1656   972   460   208   191   438  1869   371   624   552   322
  598   268   130   484   785   733   953   847   333  1580   411   982   808  1293
  939   784   595   229   114   522   735   405   117   961  1286   672  1141   806
  165  1064  1063   245  1276   892  1008   499  1316   463   242   444   281    35
  356   988   580   651   619   544   387   901   926   135   648    75   788  1307
 1078  1258   273  1436   557   930   780   813   878   122   248   588   524   288
  389   424  1375  1626   406   298  2153   417   739   225   611   237   290   264
  238   363   190  1969   697   414   316   466   420   254   960   397  1191   548
   50   178  1368   169   748   689  1264   467   605  1257   551   678   707   880
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   90   195   706  1163   367  1122  1515    55  1497   450   846    23   390   861
  285  1050   331  2042  1237   113   742   924   512   119   314   308   293   537
  126   427   309   914   173  1774   823   485  1116   978   636   564   108  1184
  796   366   300   542   645   664   756   247   776   849  1392    38  1406   111
  545   121  2046   161   261   567  1195   874  1342   151   989  1073   927   219
  224   526  1164   761   461   876   859   171   718   138   941   464   250    72
  508  1584   415    82   948   893   864  1349    76   487   652  1240   801   279
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  102   374  1413   491  1129   255  1496   650  1926   154   999  1734   124  1417
   15   834  1649   936   778  1489   442  1434   352   458  1221  1099   416  1800
  227   907   528   189  1273   563   372   702  1090   435   198  1372   174  1638
  894   299   105   676  1120   431   218   110   795  1098  1043   481   666   142
  447   783  1670   277   412   794   239   662  1072   717   546   430   422   188
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  193   196   720   918  1428    77  1266  1128   692   770   750  1442  1007   501
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1150 1752 1434 1656  736  955  794  816 1842  384 1425  970  860 1410
 780  530 1370  576 1143 1947 1453  747 1304 2223  845 1086  462  672
1768  440  896 1237 1563 1065 1288  684  612 1013  990 1235  876 1214
 824  680 1588  960  458  950 1610  741 1226 1053  641  789  793 1844
 994 1264 1809 1028  729 1092 1125 1673  728  732 1080 1199 1362 1078
 660 1008  924  992 1063 1267 1461 1907  928  864 1734  910 1490 1728
 715  884  969 1710  825 1602 1200  572  774 1392 1232 1572 1541  882
1149  644 1617 1582  720 1064 1606 1202 1151 1052 2216  968  504 1188
1593  853  725 1431  855 1726 1360  755 1713 1121 1196  617  848 1424
1140 1100 1157 1212  689 1070 1436  686  798 1248 1498 1010  713 2392
 630 1203  483 1373 1194 1462  894 1414  996 1694  735  540  626  948
1845 1020 1367 1444 1573 1302 1314  975 1604  963 1482  506  926 1422
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 698 1079  768  795 1416 1003  702 1165 1470 2000  700  319  861 1896
 697  972 2136  716 1347 1372 1249 1136 1502 1162  710 1719 1383  844
 596 1056 3206 1358  943 1499 1922 1536 1208 1215  967  721 1684  536
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1268  953  744  608  847  683  870 1580 1856  982 1026 1293  939  784
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 915 1517  930  813 1533  872 1242 1364  588  709  560 1375 1277 1626
1488  808  547 1976 2153 1705 1833 1792 1216  999 1113 1073  954  264
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1709  998  993 1374 1389 1163 1122 1496  846  372 1164 1050 2042 1868
1437  742  770 1722 1814 1430 1058  908  600  965 1032 1299 1120  936
 783 1822 1522  980 1116  978 1156  636 1554 1386  811 1520 1952 1766
 981 1094 2109  525  776 1486 1629 1138 2077 1406 1021 1408  738 1477
2046  923 1291 1195 1190  874  551 1419 2444 1210  927 1112 1391 1800
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1595  868 1153  893 1349 1337 1720 1479 1030 1318 1252  983 1860  836
1935 1614  761 1413  956  712  650  773 1926  731 1417 1024  849 1442
1649 1568  778 1489 2078 1454 1516 1067 1559 1127 1390 1273  918 1763
1090 1054 1039 1148 1002 1638  105  676 1184 1109  892 2217 1505 1059
 951 2330 1670 1623 1017 1105 1001  546  480 1134 1104 1272 1316 1126
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1150 1752 1518 1656  736  955  794  816 1842 1360 1425  983  860 1426
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1235  964 1260  905  680 1588  960  835 1225 1610  977 1535 1226 1053
1047  789  997 1844 1216  774 1282 2259 1436  729 1092 1125 1699  728
 988  772 1080 1199 1586  958  660 1327 1721 1682 1214 1959  928  864
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1232 1572 1541  882 1149  808 1867 1707 1064 1362 1651 2158 1164 2234
 968  769  901 1340  936 1217 1224 1593 1549  725 1431  855 1726  929
1713 1121 1279  865  848  720 1442 1696 1100 1180 1212  932  689 1236
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1014  798 1566  866  889  626 1222 1872  908 1375 1444 1306 1625 1302
1314 1005 1604  963 1382 1482  926  764 1422  802 1052  778 1113 1095
1363 1632 1560 2121 1156 1175 1468 1575  625 1085  858  698 1079 1148
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 793 2036  832  716 1153 1088 1372 1472 1249 1136 1553 1163 1898  803
1719 1383 1445  596 1056 1629 1358  943 1619 1922 1536 1621 1215  993
 841 1684  536 1478 1848 1869 1453  616 1192 1167 1142 1352  495  790
 672 1394 1268 1287  953 1120  752 1319  847  904  914 1580 1856 1007
1026  939  784 1269  658 1742  788  735 1144  876 1112 1288 1310 1165
 806 1620 1166 1071 1050 1276 1028  756 1344 1602 1470 1196  707  907
1208 1412  765  827  734  694 2402 1440 1128 1258  933 1689 1888  956
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1502 1161 1976 1652 1493 2069 1718 1131 1850 1792  916  999 1073 1484
1766  886 3228 1133  899 1801 1218 1368 2020 1378 1244 3138 1266 1476
 605 2515 1509  751  334  820  880 1159 1601 1838 1680  767  664 1377
 915  768  825 1069 1717 1126 1006 1048  897 1557 1389  996 1134 1496
 846  576  877 1320  703 1429 2042 1521  989 2028  838 1473  779  770
 924 1826 1402 1647 1058  927  600 1186 1940 1029 1032 1299 1054  807
1828 1548  980 1012 1116 1520 1350 1089 1554 1411  800 1567  981 1094
1051  822  755  909 2113  525  851 1486 1686 1181 2097 1454 1465 1679
1437  738 1839  792 2046  923 1291 1668 1195 1190  874  551 1419 2444
1238 1067 1391 1800 1264  372 1824  859 1576 1178 1325  971 1698 1776
1616 1146  948 1349 1464 1720 1038  742  757 1506 1836 1690 1220 1117
1973 1204 1614 1430 1110 1342  966  976 1062 1127 1285  773 1966 1428
1075 1309 1044  686 1661 1008  944 1489 2084 1434 1160  941 1516 1559
1099 1701 1307 1456  918 1779  702 1512 1039 1002 1646 1547 1036  676
1184 1462 1155 1090 1187  954  892 1709 1712  872 2217 1505 1068  951
2364 1670 1063 1636 1020 1105 1015 1001  546  480 1229 1272 1316 1617
1098 1788 1466  925 1905 1500 1207 1188 1381  965 1168  561  696 1542
 824  783  673  869 1241 1118 1407  750  691 1574 1504  985 1657 1664
1082 2898 1687 1654 1055 1803 1532 2524 1733 1992 1771  930 1526 1091
1523 1364 1130 1096 1338 1103 1154  799  893  829 1240 1459 1251 1247
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 1390  438   950   887 1021 1552  812 1530  974   986 1042 1298 1811 1265
 1640 1432   959 1831 1261 1170 2129  818 1124 2411  949 1624  831 1622
  842  663   879   815 1630 1074 2196 1283 1660 1318 1211 2136 1138 1702
 1507 1361 1024 1141 1173 2076 1140 1034 2110 1405  760 1987 1104  713
 2018 1968 1332  935 1357  661 1724 1573 1582 1659 4692 1246  753 1203
 1294 1902 1274 1787 1061  708 1584 1334  693 1284 1172 2156 2053  992
 1078 1980 1281  814 2633 1571  984  754 2117  998 1416 1746 1525 1221
  741 1569 1223  962 1537 1932 1423  913 1578 2073 1256]
Total.No.Of.Unique Value: 753
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NUll values is True or False :False
2ndFlrSF: [ 854    0  866  756 1053  566  983  752 1142 1218  668 1320
631  716
  676  860 1519  530  808  977 1330  833  765  462  213  548  960  670
 1116  876  612 1031  881  790  755  592  939  520  639  656 1414  884
  729 1523  728  351  688  941 1032  848  836  475  739 1151  448  896
  524 1194  956 1070 1096  467  547  551  880  703  901  720  316 1518
  704 1178  754  601 1360  929  445  564  882  920  518  817 1257  741
  672 1306  504 1304 1100  730  689  591  888 1020  828  700  842 1286
  864  829 1092  709  844 1106  596  807  625  649  698  840  780  568
  795  648  975  702 1242 1818 1121  371  804  325  809 1200  871 1274
 1347 1332 1177 1080  695  167  915  576  605  862  495  403  838  517
 1427  784  711  468 1081  886  793  665  858  874  526  590  406 1157
  299  936  438 1098  766 1101 1028 1017 1254  378 1160  682  110  600
  678  834  384  512  930  868  224 1103  560  811  878  574  910  620
  687  546  902 1000  846 1067  914  660 1538 1015 1237  611  707  527
 1288  832  806 1182 1040  439  717  511 1129 1370  636  533  745  584
  812  684  595  988  800  677  573 1066  778  661 1440  872  788  843
  713  567  651  762  482  738  586  679  644  900  887 1872 1281  472
 1312  319  978 1093  473  664 1540 1276  441  348 1060  714  744 1203
  783 1097  734  767 1589  742  686 1128 1111 1174  787 1072 1088 1063
  545  966  623  432  581  540  769 1051  761  779  514  455 1426  785
  521  252  813 1120 1037 1169 1001 1215  928 1140 1243  571 1196 1038
  561  979  701  332  368  883 1336 1141  634  912  798  985  826  831
  750  456  602  855  336  408  980  998 1168 1208  797  850  898 1054
  895  954  772 1230  727  454  370  628  304  582 1122 1134  885  640
  580 1112  653  220  240 1362  534  539  650  918  933  712 1796  971
 1175  743  523 1216 2065  272  685  776  630  984  875  913  464 1039
 1259  940  892  725  924  764  925 1479  192  589  992  903  430  748
  587  994  950 1323  732 1357  557 1296  390 1185  873 1611  457  796
  908  550  989  932  358 1392  349  691 1349  768  208  622  857  556
 1044  708  626  904  510 1104  830  981  870  694 1152]
Total.No.Of.Unique Value: 417
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NUll values is True or False :False
LowQualFinSF: [  0  360  513  234  528  572  144  392  371  390  420  473  156  515
80   53  232  481
 120  514  397  479  205  384]
Total.No.Of.Unique Value: 24
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NUll values is True or False :False
GrLivArea: [1710 1262 1786 1717 2198 1362 1694 2090 1774 1077 1040 2324
912 1494
 1253  854 1004 1296 1114 1339 2376 1108 1795 1060 1600  900 1704  520
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1317 1228 1234 1700 1561 2452 1097 1297 1057 1152 1324 1328  884  938
1150 1752 2149 1656 1452  955 1470 1176  816 1842 1360 1425 1739 1720
2945  780 1158 1111 1370 2034 2473 2207 1479  747 2287 2223  845 1718
1086 1605  988  952 1285 1768 1230 2142 1337 1563 1065 1474 2417 1560
1224 1526  990 1235  964 2291 1588  960  835 1225 1610 1732 1535 1226
1818 1992 1047  789 1517 1844 1855 1430 2696 2259 2320 1458 1092 1125
3222 1456 1123 1080 1199 1586  754  958  840 1348 1053 2157 2054 1327
1721 1682 1214 1959 1852 1764  864 1734 1385 1501 1728 1709  875 2035
1344  969 1993 1252 1200 1096 1968 1947 2462 1232 2668 1541  882 1616
1355 1867 2161 1707 1382 1767 1651 2158 2060 1920 2234  968 1525 1802
1340 2082 3608 1217 1593 2727 1431 1726 3112 2229 1713 1121 1279 1310
 848 1284 1442 1696 1100 2062 1212 1392 1236 1436 1954 1248 1498 2267
1552 2392 1302 2520  987 1555 1194 2794  894 1960 1414 1744 1487 1566
 866 1440 2110 1872 1928 1375 1668 2144 1306 1625 1640 1314 1604 1792
2574 1316  764 1422 1511 2192  778 1113 1939 1363 2270 1632 1548 2121
2022 1982 1468 1575 1250  858 1396 1919 1716 2263 1644 1003 1558 1950
1743 1336 3493 2000 2243 1406  861 1944  972 1118 2036 1641 1432 2353
2646 1472 2596 2468 2730 1163 2978  803 1719 1383 2134 1192 1056 1629
1358 1638 1922 1536 1621 1215 1908  841 1684 1112 1577 1478 1626 2728
1869 1453  720 1595 1167 1142 1352 1924 1505 1574 1394 1268 1287 1664
 752 1319  904  914 2466 1856 1800 1691 1301 1797  784 1953 1269 1184
2332 1367 1961  788 1034 1144 1812 1550 1288  672 1572 1620 1639 1680
2172 2078 1276 1028 2097 1400 2624 1134 1602 2630 1196 1389  907 1208
1412 1198 1365  630 1661  694 2402 1573 1258 1689 1888 1886 1376 1183
 813 1533 1756 1590 1242 1663 1666 1203 1935 1135 1660 1277 1634 1502
1969 1072 1976 1652  970 1493 2643 1131 1850 1826 1216  999 1073 1484
2414 1304 1578  886 3228 1820  899 1218 1801 1322 1911 1378 1041 1368
2020 2119 2344 1796 2080 1294 1244 4676 2398 1266  928 2713  605 2515
1509  827  334 1347 1724 1159 1601 1838 2285  767 1496 2183 1635  768
 825 2094 1069 1126 2046 1048 1446 1557  996 1674 2295 1647 2504 2132
 943 1692 1109 1477 1320 1429 2042 2775 2028  838  860 1473  935 1582
2296  924 1402 1556 1904 1915 1986 2008 3194 1029 2153 1032 1120 1054
 832 1828 2262 2614  980 1512 1790 1116 1520 1350 1750 1554 1411 3395
 800 1387  796 1567 1518 1929 2704 1766  981 1094 1839 1665 1510 1469
2113 1486 2448 1181 1936 2380 1679 1437 1180 1476 1369 1136 1441  792
 923 1291 1761 1102 1419 4316 2519 1539 1137  616 1148 1391 1164 2576
1824  729 1178 2554 2418  971 1742 1698 1776 1146 2031  948 1349 1464
2715 2256 2640 1529 1140 2098 1026 1471 1386 2531 1547 2365 1506 1714
1836 3279 1220 1117 1973 1204 1614 1603 1110 1342 2084  901 2087 1145
1062 2013 1895 1564  773 3140 1688 2822 1128 1428 1576 2138 1309 1044
1008 1052  936 1733 1489 1434 2126 1223 1829 1516 1067 1559 1099 1482
1165 1416 1701 1775 2358 1646 1445 1779 1481 2654 1426 1039 1372 1002
1949  910 2610 2224 1155 1090 2230  892 1712 1393 2217 1683 1068  951
2240 2364 1670  902 1063 1636 2057 2274 1015 2002  480 1229 2127 2200
1617 1686 2374 1978 1788 2236 1466  925 1905 1500 2069 1971 1962 2403
1381  965 1958 2872 1894 1308 1098 1095  918 2019  869 1241 2612 2290
1940 2030 1851 1050  944  691 1504  985 1657 1522 1271 1022 1082 1132
2898 1264 3082 1654  954 1803 2329 2524 2868 1771  930 1977 1989 1523
1364 2184 1991 1338 2337 1103 1154 2260 1571 1611 2521  893 1240 1740
1459 1251 1247 1088  438  950 2622 2021 1690 1658 1964  833 1012  698
1005 1530 1981  974 2210  986 1020 1868 2828 1006 1298  932 1811 1265
1580 1876 1671 2108 3627 1261 3086 2345 1343 1124 2514 4476 1130 1221
1699 1624 1804 1622 1863 1630 1074 2196 1283 1845 1902 1211 1846 2136
1490 1138 1933 1702 1507 2620 1190 1188 1784 1948 1141 1173 2076 1553
2058 1405  874 2167 1987 1166 1675 1889 2018 3447 1524 1357 1395 2447
1659 1970 2372 5642 1246 1983 2526 1708 1122 1274 2810 2599 2112 1787
1923  708  774 2792 1334  693 1861  872 2169 1913 2156 2634 3238 1865
1078 1980 2601 1738 1475 1374 2633  790 2117 1762 2784 1746 1584 1912
2482 1687 1513 1608 2093 1840 1848 1569 2450 2201  804 1537 1932 1725
2555 2007  913 1346 2073 2340 1256]
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Total.No.Of.Unique Value: 861
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NUll values is True or False :False
BsmtFullBath: [1 0 2 3]
Total.No.Of.Unique Value: 4
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NUll values is True or False :False
BsmtHalfBath: [0 1 2]
Total.No.Of.Unique Value: 3
--------------------------------------------------------------------------
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----------------
NUll values is True or False :False
FullBath: [2 1 3 0]
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
HalfBath: [1 0 2]
Total.No.Of.Unique Value: 3
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
BedroomAbvGr: [3 4 1 2 0 5 6 8]
Total.No.Of.Unique Value: 8
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NUll values is True or False :False
KitchebvGr: [1 2 3 0]
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
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NUll values is True or False :False
TotRmsAbvGrd: [ 8  6  7  9  5 11  4 10 12  3  2 14]
Total.No.Of.Unique Value: 12
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NUll values is True or False :False
Fireplaces: [0 1 2 3]
Total.No.Of.Unique Value: 4
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NUll values is True or False :True
GarageYrBlt: [2003. 1976. 2001. 1998. 2000. 1993. 2004. 1973. 1931. 193
9. 1965. 2005.
 1962. 2006. 1960. 1991. 1970. 1967. 1958. 1930. 2002. 1968. 2007. 2008.
 1957. 1920. 1966. 1959. 1995. 1954. 1953.    nan 1983. 1977. 1997. 1985.
 1963. 1981. 1964. 1999. 1935. 1990. 1945. 1987. 1989. 1915. 1956. 1948.
 1974. 2009. 1950. 1961. 1921. 1900. 1979. 1951. 1969. 1936. 1975. 1971.
 1923. 1984. 1926. 1955. 1986. 1988. 1916. 1932. 1972. 1918. 1980. 1924.
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                  1996. 1940. 1949. 1994. 1910. 1978. 1982. 1992. 1925. 1941. 2010. 1927.
                  1947. 1937. 1942. 1938. 1952. 1928. 1922. 1934. 1906. 1914. 1946. 1908.
                  1929. 1933.]
       Total.No.Of.Unique Value: 97
       --------------------------------------------------------------------------
       --------------------------------------------------------------------------
       ----------------
       NUll values is True or False :False
       GarageCars: [2 3 1 0 4]
       Total.No.Of.Unique Value: 5
       --------------------------------------------------------------------------
       --------------------------------------------------------------------------
       ----------------
       NUll values is True or False :False
       GarageArea: [ 548  460  608  642  836  480  636  484  468  205  384  736
       352  840
          576  516  294  853  280  534  572  270  890  772  319  240  250  271
          447  556  691  672  498  246    0  440  308  504  300  670  826  386
          388  528  894  565  641  288  645  852  558  220  667  360  427  490
          379  297  283  509  405  758  461  400  462  420  432  506  684  472
          366  476  410  740  648  273  546  325  792  450  180  430  594  390
          540  264  530  435  453  750  487  624  471  318  766  660  470  720
          577  380  434  866  495  564  312  625  680  678  726  532  216  303
          789  511  616  521  451 1166  252  497  682  666  786  795  856  473
          398  500  349  454  644  299  210  431  438  675  968  721  336  810
          494  457  818  463  604  389  538  520  309  429  673  884  868  492
          413  924 1053  439  671  338  573  732  505  575  626  898  529  685
          281  539  418  588  282  375  683  843  552  870  888  746  708  513
         1025  656  872  292  441  189  880  676  301  474  706  617  445  200
          592  566  514  296  244  610  834  639  501  846  560  596  600  373
          947  350  396  864  304  784  696  569  628  550  493  578  198  422
          228  526  525  908  499  508  694  874  164  402  515  286  603  900
          583  889  858  502  392  403  527  765  367  426  615  871  570  406
          590  612  650 1390  275  452  842  816  621  544  486  230  261  531
          393  774  749  364  627  260  256  478  442  562  512  839  330  711
         1134  416  779  702  567  832  326  551  606  739  408  475  704  983
          768  632  541  320  800  831  554  878  752  614  481  496  423  841
          895  412  865  630  605  602  618  444  397  455  409  820 1020  598
          857  595  433  776 1220  458  613  456  436  812  686  611  425  343
          479  619  902  574  523  414  738  354  483  327  756  690  284  833
          601  533  522  788  555  689  796  808  510  255  424  305  368  824
          328  160  437  665  290  912  905  542  716  586  467  582 1248 1043
          254  712  719  862  928  782  466  714 1052  225  234  324  306  830
          807  358  186  693  482  813  995  757 1356  459  701  322  315  668
          404  543  954  850  477  276  518 1014  753 1418  213  844  860  748
          248  287  825  647  342  770  663  377  804  936  722  208  662  754
          622  620  370 1069  372  923  192]
       Total.No.Of.Unique Value: 441
       --------------------------------------------------------------------------
       --------------------------------------------------------------------------
       ----------------
       NUll values is True or False :False
       WoodDeckSF: [   0  298  192   40  255  235   90  147  140  160   48  240  171  100  406
       222  288   49
          203  113  392  145  196  168  112  106  857  115  120   12  576  301  144  300   74  127
          232  158  352  182  180  166  224   80  367   53  188  105   24   98  276  200  409  239
          400  476  178  574  237  210  441  116  280  104   87  132  238  149  355   60  139  108
          351  209  216  248  143  365  370   58  197  263  123  138  333  250  292   95  262   81
          289  124  172  110  208  468  256  302  190  340  233  184  201  142  122  155  670  135
          495  536  306   64  364  353   66  159  146  296  125   44  215  264   88   89   96  414
```

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      519 206 141 260 324 156 220   38 261 126   85 466 270   78 169 320 268   72
      349   42   35 326 382 161 179 103 253 148 335 176 390 328 312 185 269 195
       57 236 517 304 198 426   28 316 322 307 257 219 416 344 380   68 114 327
      165 187 181   92 228 245 503 315 241 303 133 403   36   52 265 207 150 290
      486 278   70 418 234   26 342   97 272 121 243 511 154 164 173 384 202   56
      321   86 194 421 305 117 550 509 153 394 371   63 252 136 186 170 474 214
      199 728 436   55 431 448 361 362 162 229 439 379 356   84 635 325   33 212
      314 242 294   30 128   45 177 227 218 309 404 500 668 402 283 183 175 586
      295   32 366 736]
Total.No.Of.Unique Value: 274
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NUll values is True or False :False
OpenPorchSF: [ 61    0   42   35   84   30   57 204    4   21   33 213 112 102 15
4 159 110   90
       56   32   50 258   54   65   38   47   64   52 138 104   82   43 146   75   72   70
       49   11   36 151   29   94 101 199   99 234 162   63   68   46   45 122 184 120
       20   24 130 205 108   80   66   48   25   96 111 106   40 114    8 136 132   62
      228   60 238 260   27   74   16 198   26   83   34   55   22   98 172 119 208 105
      140 168   28   39 148   12   51 150 117 250   10   81   44 144 175 195 128   76
       17   59 214 121   53 231 134 192 123   78 187   85 133 176 113 137 125 523
      100 285   88 406 155   73 182 502 274 158 142 243 235 312 124 267 265   87
      288   23 152 341 116 160 174 247 291   18 170 156 166 129 418 240   77 364
      188 207   67   69 131 191   41 118 252 189 282 135   95 224 169 319   58   93
      244 185 200   92 180 263 304 229 103 211 287 292 241 547   91   86 262 210
      141   15 126 236]
Total.No.Of.Unique Value: 202
--------------------------------------------------------------------------------
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-----------------
NUll values is True or False :False
EnclosedPorch: [   0 272 228 205 176   87 172 102   37 144   64 114 202 128
156   44   77 192
 140 180 183   39 184   40 552   30 126   96   60 150 120 112 252   52 224 234
 244 268 137   24 108 294 177 218 242   91 160 130 169 105   34 248 236   32
  80 115 291 116 158 210   36 200   84 148 136 240   54 100 189 293 164 216
 239   67   90   56 129   98 143   70 386 154 185 134 196 264 275 230 254   68
 194 318   48   94 138 226 174   19 170 220 214 280 190 330 208 145 259   81
  42 123 162 286 168   20 301 198 221 212   50   99]
Total.No.Of.Unique Value: 120
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-----------------
NUll values is True or False :False
3SsnPorch: [   0 320 407 130 180 168 140 508 238 245 196 144 182 162   23
216   96 153
 290 304]
Total.No.Of.Unique Value: 20
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NUll values is True or False :False
ScreenPorch: [   0 176 198 291 252   99 184 168 130 142 192 410 224 266 17
0 154 153 144
 128 259 160 271 234 374 185 182   90 396 140 276 180 161 145 200 122   95
 120   60 126 189 260 147 385 287 156 100 216 210 197 204 225 152 175 312
 222 265 322 190 233   63   53 143 273 288 263   80 163 116 480 178 440 155
 220 119 165   40]
Total.No.Of.Unique Value: 76
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NUll values is True or False :False
PoolArea: [  0 512 648 576 555 480 519 738]
Total.No.Of.Unique Value: 8
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NUll values is True or False :False
MiscVal: [    0    700    350    500    400    480    450 15500   1200    800   2
000    600
   3500   1300     54    620    560   1400   8300   1150   2500]
Total.No.Of.Unique Value: 21
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NUll values is True or False :False
MoSold: [ 2  5  9 12 10  8 11  4  1  7  3  6]
Total.No.Of.Unique Value: 12
------------------------------------------------------------------------
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NUll values is True or False :False
YrSold: [2008 2007 2006 2009 2010]
Total.No.Of.Unique Value: 5
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NUll values is True or False :False
SalePrice: [208500 181500 223500 140000 250000 143000 307000 200000 1299
00 118000
 129500 345000 144000 279500 157000 132000 149000  90000 159000 139000
 325300 139400 230000 154000 256300 134800 306000 207500  68500  40000
 149350 179900 165500 277500 309000 145000 153000 109000  82000 160000
 170000 130250 141000 319900 239686 249700 113000 127000 177000 114500
 110000 385000 130000 180500 172500 196500 438780 124900 158000 101000
 202500 219500 317000 180000 226000  80000 225000 244000 185000 144900
 107400  91000 135750 136500 193500 153500 245000 126500 168500 260000
 174000 164500  85000 123600 109900  98600 163500 133900 204750 214000
  94750  83000 128950 205000 178000 118964 198900 169500 100000 115000
 190000 136900 383970 217000 259500 176000 155000 320000 163990 136000
 153900 181000  84500 128000  87000 150000 150750 220000 171000 231500
 166000 204000 125000 105000 222500 122000 372402 235000  79000 109500
 269500 254900 162500 412500 103200 152000 127500 325624 183500 228000
 128500 215000 239000 163000 184000 243000 211000 501837 200100 120000
 475000 173000 135000 153337 286000 315000 192000 148500 311872 104000
 274900 171500 112000 143900 277000  98000 186000 252678 156000 161750
 134450 210000 107000 311500 167240 204900  97000 386250 290000 106000
 192500 148000 403000  94500 128200 216500  89500 185500 194500 318000
 262500 110500 241500 137000  76500 276000 151000  73000 175500 179500
 120500 266000 124500 201000 415298 228500 244600 179200 164700  88000
 153575 233230 135900 131000 167000 142500 175000 158500 267000 149900
 295000 305900  82500 360000 165600 119900 375000 188500 270000 187500
 342643 354000 301000 126175 242000 324000 145250 214500  78000 119000
 284000 207000 228950 377426 202900  87500 140200 151500 157500 437154
 318061  95000 105900 177500 134000 280000 198500 147000 165000 162000
 172400 134432 123000  61000 340000 394432 179000 187750 213500  76000
 240000  81000 191000 426000 106500 129000  67000 241000 245500 164990
 108000 258000 168000 339750  60000 222000 181134 149500 126000 142000
```

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206300 275000 109008 195400   85400   79900 122500 212000 116000   90350
555000 162900 199900 119500 188000 256000 161000 263435   62383 188700
124000 178740 146500 187000 440000 251000 132500 208900 380000 297000
 89471 326000 374000 164000   86000 133000 172785   91300   34900 430000
226700 289000 208300 164900 202665   96500 402861 265000 234000 106250
184750 315750 446261 200624 107500   39300 111250 272000 248000 213250
179665 229000 263000 112500 255500 121500 268000 325000 316600 135960
142600 224500 118500 146000 131500 181900 253293 369900   79500 185900
451950 138000 319000 114504 194201 217500 221000 359100 313000 261500
 75500 137500 183200 105500 314813 305000 165150 139900 209500   93000
264561 274000 370878 143250   98300 205950 350000 145500   97500 197900
402000 423000 230500 173500 103600 257500 372500 159434 285000 227875
148800 392000 194700 755000 335000 108480 141500   89000 123500 138500
196000 312500 361919 213000   55000 302000 254000 179540   52000 102776
189000 130500 159500 341000 103000 236500 131400   93500 239900 299800
236000 265979 260400 275500 158900 179400 215200 337000 264132 216837
538000 134900 102000 395000 221500 175900 187100 161500 233000 107900
160200 146800 269790 143500 485000 582933 227680 135500 159950 144500
 55993 157900 224900 271000 224000 183000 139500 232600 147400 237000
139950 174900 133500 189950 250580 248900 169000 200500   66500 303477
132250 328900 122900 154500 118858 142953 611657 125500 255000 154300
173733   75000   35311 238000 176500 145900 169990 193000 117500 184900
253000 239799 244400 150900 197500 172000 116500 214900 178900   37900
 99500 182000 167500   85500 178400 336000 159895 255900 117000 395192
195000 197000 348000 173900 337500 121600 206000 232000 136905 119200
227000 203000 213490 194000 287000 293077 310000 119750   84000 315500
262280 278000 139600 556581   84900 176485 200141 185850 328000 167900
151400   91500 138800 155900   83500 252000   92900 176432 274725 134500
184100 133700 118400 212900 163900 259000 239500   94000 424870 174500
116900 201800 218000 235128 108959 233170 245350 625000 171900 154900
392500 745000 186700 104900 262000 219210 116050 271900 229456   80500
137900 367294 101800 138887 265900 248328 465000 186500 169900 171750
294000 165400 301500   99900 128900 183900 378500 381000 185750   68400
150500 281000 333168 206900 295493 111000 156500   72500   52500 155835
108500 283463 410000 156932 144152 216000 274300 466500   58500 237500
377500 246578 281213 137450 193879 282922 257000 223000 274970 182900
192140 143750   64500 394617 149700 149300 121000 179600   92000 287090
266500 142125 147500]
```

Categorical Data

```
In [11]: cat_data = pd.DataFrame(data.drop(['Id','MSSubClass','LotFrontage','LotAr
         ea','OverallQual','OverallCond','YearBuilt','YearRemodAdd','MasVnrArea','
         BsmtFinSF1','BsmtFinSF2','BsmtUnfSF','TotalBsmtSF','1stFlrSF','2ndFlrSF
         ','LowQualFinSF','GrLivArea','BsmtFullBath','BsmtHalfBath','FullBath','Ha
         lfBath','BedroomAbvGr','KitchebvGr','TotRmsAbvGrd', 'Fireplaces', 'Garage
         YrBlt', 'GarageCars', 'GarageArea', 'WoodDeckSF', 'OpenPorchSF', 'Enclose
         dPorch', '3SsnPorch', 'ScreenPorch','PoolArea','MiscVal','MoSold','YrSold
         ','SalePrice'],axis=1))
```

In [12]:
```python
for column in cat_data:
    print(f'NUll values is True or False :{cat_data[column].isnull().any
()}')
    print(f'{column}: {cat_data[column].unique()}')
    print(f'Total.No.Of.Unique Value: {cat_data[column].nunique()}')
    print
('-----------------------------------------------------------------------
-----------------------------------------------------------------------
----------------')
```

```
              NUll values is True or False :False
              MSZoning: ['RL' 'RM' 'C (all)' 'FV' 'RH']
              Total.No.Of.Unique Value: 5
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :False
              Street: ['Pave' 'Grvl']
              Total.No.Of.Unique Value: 2
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :True
              Alley: [nan 'Grvl' 'Pave']
              Total.No.Of.Unique Value: 2
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :False
              LotShape: ['Reg' 'IR1' 'IR2' 'IR3']
              Total.No.Of.Unique Value: 4
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :False
              LandContour: ['Lvl' 'Bnk' 'Low' 'HLS']
              Total.No.Of.Unique Value: 4
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :False
              Utilities: ['AllPub' 'NoSeWa']
              Total.No.Of.Unique Value: 2
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :False
              LotConfig: ['Inside' 'FR2' 'Corner' 'CulDSac' 'FR3']
              Total.No.Of.Unique Value: 5
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :False
              LandSlope: ['Gtl' 'Mod' 'Sev']
              Total.No.Of.Unique Value: 3
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :False
              Neighborhood: ['CollgCr' 'Veenker' 'Crawfor' 'NoRidge' 'Mitchel' 'Somers
              t' 'NWAmes'
               'OldTown' 'BrkSide' 'Sawyer' 'NridgHt' 'mes' 'SawyerW' 'IDOTRR' 'Meadow
              V'
               'Edwards' 'Timber' 'Gilbert' 'StoneBr' 'ClearCr' 'NPkVill' 'Blmngtn'
               'BrDale' 'SWISU' 'Blueste']
              Total.No.Of.Unique Value: 25
              ------------------------------------------------------------------------------
              ------------------------------------------------------------------------------
              ----------------
              NUll values is True or False :False
```

```
Condition1: ['Norm' 'Feedr' 'PosN' 'Artery' 'RRAe' 'RRNn' 'RRAn' 'PosA'
 'RRNe']
Total.No.Of.Unique Value: 9
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
Condition2: ['Norm' 'Artery' 'RRNn' 'Feedr' 'PosN' 'PosA' 'RRAn' 'RRAe']
Total.No.Of.Unique Value: 8
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
BldgType: ['1Fam' '2fmCon' 'Duplex' 'TwnhsE' 'Twnhs']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
HouseStyle: ['2Story' '1Story' '1.5Fin' '1.5Unf' 'SFoyer' 'SLvl' '2.5Unf
' '2.5Fin']
Total.No.Of.Unique Value: 8
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
RoofStyle: ['Gable' 'Hip' 'Gambrel' 'Mansard' 'Flat' 'Shed']
Total.No.Of.Unique Value: 6
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
RoofMatl: ['CompShg' 'WdShngl' 'Metal' 'WdShake' 'Membran' 'Tar&Grv' 'Ro
ll'
 'ClyTile']
Total.No.Of.Unique Value: 8
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
Exterior1st: ['VinylSd' 'MetalSd' 'Wd Sdng' 'HdBoard' 'BrkFace' 'WdShing
' 'CemntBd'
 'Plywood' 'AsbShng' 'Stucco' 'BrkComm' 'AsphShn' 'Stone' 'ImStucc'
 'CBlock']
Total.No.Of.Unique Value: 15
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :False
Exterior2nd: ['VinylSd' 'MetalSd' 'Wd Shng' 'HdBoard' 'Plywood' 'Wd Sdng
' 'CmentBd'
 'BrkFace' 'Stucco' 'AsbShng' 'Brk Cmn' 'ImStucc' 'AsphShn' 'Stone'
 'Other' 'CBlock']
Total.No.Of.Unique Value: 16
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :True
MasVnrType: ['BrkFace' 'None' 'Stone' 'BrkCmn' nan]
Total.No.Of.Unique Value: 4
```

```
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
ExterQual: ['Gd' 'TA' 'Ex' 'Fa']
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
ExterCond: ['TA' 'Gd' 'Fa' 'Po' 'Ex']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
Foundation: ['PConc' 'CBlock' 'BrkTil' 'Wood' 'Slab' 'Stone']
Total.No.Of.Unique Value: 6
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
BsmtQual: ['Gd' 'TA' 'Ex' nan 'Fa']
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
BsmtCond: ['TA' 'Gd' nan 'Fa' 'Po']
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
BsmtExposure: ['No' 'Gd' 'Mn' 'Av' nan]
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
BsmtFinType1: ['GLQ' 'ALQ' 'Unf' 'Rec' 'BLQ' nan 'LwQ']
Total.No.Of.Unique Value: 6
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
BsmtFinType2: ['Unf' 'BLQ' nan 'ALQ' 'Rec' 'LwQ' 'GLQ']
Total.No.Of.Unique Value: 6
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
Heating: ['GasA' 'GasW' 'Grav' 'Wall' 'OthW' 'Floor']
Total.No.Of.Unique Value: 6
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
HeatingQC: ['Ex' 'Gd' 'TA' 'Fa' 'Po']
Total.No.Of.Unique Value: 5
```

```
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
CentralAir: ['Y' 'N']
Total.No.Of.Unique Value: 2
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
Electrical: ['SBrkr' 'FuseF' 'FuseA' 'FuseP' 'Mix' nan]
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
KitchenQual: ['Gd' 'TA' 'Ex' 'Fa']
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
Functiol: ['Typ' 'Min1' 'Maj1' 'Min2' 'Mod' 'Maj2' 'Sev']
Total.No.Of.Unique Value: 7
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
FireplaceQu: [nan 'TA' 'Gd' 'Fa' 'Ex' 'Po']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
GarageType: ['Attchd' 'Detchd' 'BuiltIn' 'CarPort' nan 'Basment' '2Types
']
Total.No.Of.Unique Value: 6
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
GarageFinish: ['RFn' 'Unf' 'Fin' nan]
Total.No.Of.Unique Value: 3
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
GarageQual: ['TA' 'Fa' 'Gd' nan 'Ex' 'Po']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :True
GarageCond: ['TA' 'Fa' nan 'Gd' 'Po' 'Ex']
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :False
PavedDrive: ['Y' 'N' 'P']
```

```
Total.No.Of.Unique Value: 3
---------------------------------------------------------------------------
---------------------------------------------------------------------------
-----------------
NUll values is True or False :True
PoolQC: [nan 'Ex' 'Fa' 'Gd']
Total.No.Of.Unique Value: 3
---------------------------------------------------------------------------
--------------------------------------------------------------------------·
-----------------
NUll values is True or False :True
Fence: [nan 'MnPrv' 'GdWo' 'GdPrv' 'MnWw']
Total.No.Of.Unique Value: 4
---------------------------------------------------------------------------
---------------------------------------------------------------------------
-----------------
NUll values is True or False :True
MiscFeature: [nan 'Shed' 'Gar2' 'Othr' 'TenC']
Total.No.Of.Unique Value: 4
---------------------------------------------------------------------------
---------------------------------------------------------------------------
-----------------
NUll values is True or False :False
SaleType: ['WD' 'New' 'COD' 'ConLD' 'ConLI' 'CWD' 'ConLw' 'Con' 'Oth']
Total.No.Of.Unique Value: 9
---------------------------------------------------------------------------
---------------------------------------------------------------------------
-----------------
NUll values is True or False :False
SaleCondition: ['Normal' 'Abnorml' 'Partial' 'AdjLand' 'Alloca' 'Family
']
Total.No.Of.Unique Value: 6
---------------------------------------------------------------------------
---------------------------------------------------------------------------
```

EDA of numerical variables:

a. Missing value treatment

b. Identify the skewness and distribution

c. Identify significant variables using a correlation matrix

d. Pair plot for distribution and density

In [13]: `no_data.isnull().any()`

Out[13]:
```
Id               False
MSSubClass       False
LotFrontage       True
LotArea          False
OverallQual      False
OverallCond      False
YearBuilt        False
YearRemodAdd     False
MasVnrArea        True
BsmtFinSF1       False
BsmtFinSF2       False
BsmtUnfSF        False
TotalBsmtSF      False
1stFlrSF         False
2ndFlrSF         False
LowQualFinSF     False
GrLivArea        False
BsmtFullBath     False
BsmtHalfBath     False
FullBath         False
HalfBath         False
BedroomAbvGr     False
KitchebvGr       False
TotRmsAbvGrd     False
Fireplaces       False
GarageYrBlt       True
GarageCars       False
GarageArea       False
WoodDeckSF       False
OpenPorchSF      False
EnclosedPorch    False
3SsnPorch        False
ScreenPorch      False
PoolArea         False
MiscVal          False
MoSold           False
YrSold           False
SalePrice        False
dtype: bool
```

In [14]:
```python
for column in no_data:
    print(f'NUll values is True or False :{no_data[column].isnull().sum
()}')
    print(f'{column}: {no_data[column].unique()}')
    print(f'Total.No.Of.Unique Value: {no_data[column].nunique()}')
    print
('-------------------------------------------------------------------
--------------------------------------------------------------------
----------------')
```

```
              NUll values is True or False :0
              Id: [   1    2    3 ... 1458 1459 1460]
              Total.No.Of.Unique Value: 1460
              -----------------------------------------------------------------------------
              -----------------------------------------------------------------------------
              ----------------
              NUll values is True or False :0
              MSSubClass: [ 60  20  70  50 190  45  90 120  30  85  80 160  75 180  4
              0]
              Total.No.Of.Unique Value: 15
              -----------------------------------------------------------------------------
              -----------------------------------------------------------------------------
              ----------------
              NUll values is True or False :259
              LotFrontage: [ 65.  80.  68.  60.  84.  85.  75.  nan  51.  50.  70.  9
              1.  72.  66.
               101.  57.  44. 110.  98.  47. 108. 112.  74. 115.  61.  48.  33.  52.
               100.  24.  89.  63.  76.  81.  95.  69.  21.  32.  78. 121. 122.  40.
               105.  73.  77.  64.  94.  34.  90.  55.  88.  82.  71. 120. 107.  92.
               134.  62.  86. 141.  97.  54.  41.  79. 174.  99.  67.  83.  43. 103.
                93.  30. 129. 140.  35.  37. 118.  87. 116. 150. 111.  49.  96.  59.
                36.  56. 102.  58.  38. 109. 130.  53. 137.  45. 106. 104.  42.  39.
               144. 114. 128. 149. 313. 168. 182. 138. 160. 152. 124. 153.  46.]
              Total.No.Of.Unique Value: 110
              -----------------------------------------------------------------------------
              -----------------------------------------------------------------------------
              ----------------
              NUll values is True or False :0
              LotArea: [ 8450  9600 11250 ... 17217 13175  9717]
              Total.No.Of.Unique Value: 1073
              -----------------------------------------------------------------------------
              -----------------------------------------------------------------------------
              ----------------
              NUll values is True or False :0
              OverallQual: [ 7  6  8  5  9  4 10  3  1  2]
              Total.No.Of.Unique Value: 10
              -----------------------------------------------------------------------------
              -----------------------------------------------------------------------------
              ----------------
              NUll values is True or False :0
              OverallCond: [5 8 6 7 4 2 3 9 1]
              Total.No.Of.Unique Value: 9
              -----------------------------------------------------------------------------
              -----------------------------------------------------------------------------
              ----------------
              NUll values is True or False :0
              YearBuilt: [2003 1976 2001 1915 2000 1993 2004 1973 1931 1939 1965 2005
              1962 2006
               1960 1929 1970 1967 1958 1930 2002 1968 2007 1951 1957 1927 1920 1966
               1959 1994 1954 1953 1955 1983 1975 1997 1934 1963 1981 1964 1999 1972
               1921 1945 1982 1998 1956 1948 1910 1995 1991 2009 1950 1961 1977 1985
               1979 1885 1919 1990 1969 1935 1988 1971 1952 1936 1923 1924 1984 1926
               1940 1941 1987 1986 2008 1908 1892 1916 1932 1918 1912 1947 1925 1900
               1980 1989 1992 1949 1880 1928 1978 1922 1996 2010 1946 1913 1937 1942
               1938 1974 1893 1914 1906 1890 1898 1904 1882 1875 1911 1917 1872 1905]
              Total.No.Of.Unique Value: 112
              -----------------------------------------------------------------------------
              -----------------------------------------------------------------------------
              ----------------
              NUll values is True or False :0
```

```
            YearRemodAdd: [2003 1976 2002 1970 2000 1995 2005 1973 1950 1965 2006 19
            62 2007 1960
             2001 1967 2004 2008 1997 1959 1990 1955 1983 1980 1966 1963 1987 1964
             1972 1996 1998 1989 1953 1956 1968 1981 1992 2009 1982 1961 1993 1999
             1985 1979 1977 1969 1958 1991 1971 1952 1975 2010 1984 1986 1994 1988
             1954 1957 1951 1978 1974]
            Total.No.Of.Unique Value: 61
            --------------------------------------------------------------------------
            --------------------------------------------------------------------------
            -----------------
            NUll values is True or False :8
            MasVnrArea: [1.960e+02 0.000e+00 1.620e+02 3.500e+02 1.860e+02 2.400e+02
            2.860e+02
             3.060e+02 2.120e+02 1.800e+02 3.800e+02 2.810e+02 6.400e+02 2.000e+02
             2.460e+02 1.320e+02 6.500e+02 1.010e+02 4.120e+02 2.720e+02 4.560e+02
             1.031e+03 1.780e+02 5.730e+02 3.440e+02 2.870e+02 1.670e+02 1.115e+03
             4.000e+01 1.040e+02 5.760e+02 4.430e+02 4.680e+02 6.600e+01 2.200e+01
             2.840e+02 7.600e+01 2.030e+02 6.800e+01 1.830e+02 4.800e+01 2.800e+01
             3.360e+02 6.000e+02 7.680e+02 4.800e+02 2.200e+02 1.840e+02 1.129e+03
             1.160e+02 1.350e+02 2.660e+02 8.500e+01 3.090e+02 1.360e+02 2.880e+02
             7.000e+01 3.200e+02 5.000e+01 1.200e+02 4.360e+02 2.520e+02 8.400e+01
             6.640e+02 2.260e+02 3.000e+02 6.530e+02 1.120e+02 4.910e+02 2.680e+02
             7.480e+02 9.800e+01 2.750e+02 1.380e+02 2.050e+02 2.620e+02 1.280e+02
             2.600e+02 1.530e+02 6.400e+01 3.120e+02 1.600e+01 9.220e+02 1.420e+02
             2.900e+02 1.270e+02 5.060e+02 2.970e+02       nan 6.040e+02 2.540e+02
             3.600e+01 1.020e+02 4.720e+02 4.810e+02 1.080e+02 3.020e+02 1.720e+02
             3.990e+02 2.700e+02 4.600e+01 2.100e+02 1.740e+02 3.480e+02 3.150e+02
             2.990e+02 3.400e+02 1.660e+02 7.200e+01 3.100e+01 3.400e+01 2.380e+02
             1.600e+03 3.650e+02 5.600e+01 1.500e+02 2.780e+02 2.560e+02 2.250e+02
             3.700e+02 3.880e+02 1.750e+02 2.960e+02 1.460e+02 1.130e+02 1.760e+02
             6.160e+02 3.000e+01 1.060e+02 8.700e+02 3.620e+02 5.300e+02 5.000e+02
             5.100e+02 2.470e+02 3.050e+02 2.550e+02 1.250e+02 1.000e+02 4.320e+02
             1.260e+02 4.730e+02 7.400e+01 1.450e+02 2.320e+02 3.760e+02 4.200e+01
             1.610e+02 1.100e+02 1.800e+01 2.240e+02 2.480e+02 8.000e+01 3.040e+02
             2.150e+02 7.720e+02 4.350e+02 3.780e+02 5.620e+02 1.680e+02 8.900e+01
             2.850e+02 3.600e+02 9.400e+01 3.330e+02 9.210e+02 7.620e+02 5.940e+02
             2.190e+02 1.880e+02 4.790e+02 5.840e+02 1.820e+02 2.500e+02 2.920e+02
             2.450e+02 2.070e+02 8.200e+01 9.700e+01 3.350e+02 2.080e+02 4.200e+02
             1.700e+02 4.590e+02 2.800e+02 9.900e+01 1.920e+02 2.040e+02 2.330e+02
             1.560e+02 4.520e+02 5.130e+02 2.610e+02 1.640e+02 2.590e+02 2.090e+02
             2.630e+02 2.160e+02 3.510e+02 6.600e+02 3.810e+02 5.400e+01 5.280e+02
             2.580e+02 4.640e+02 5.700e+01 1.470e+02 1.170e+03 2.930e+02 6.300e+02
             4.660e+02 1.090e+02 4.100e+01 1.600e+02 2.890e+02 6.510e+02 1.690e+02
             9.500e+01 4.420e+02 2.020e+02 3.380e+02 8.940e+02 3.280e+02 6.730e+02
             6.030e+02 1.000e+00 3.750e+02 9.000e+01 3.800e+01 1.570e+02 1.100e+01
             1.400e+02 1.300e+02 1.480e+02 8.600e+02 4.240e+02 1.047e+03 2.430e+02
             8.160e+02 3.870e+02 2.230e+02 1.580e+02 1.370e+02 1.150e+02 1.890e+02
             2.740e+02 1.170e+02 6.000e+01 1.220e+02 9.200e+01 4.150e+02 7.600e+02
             2.700e+01 7.500e+01 3.610e+02 1.050e+02 3.420e+02 2.980e+02 5.410e+02
             2.360e+02 1.440e+02 4.230e+02 4.400e+01 1.510e+02 9.750e+02 4.500e+02
             2.300e+02 5.710e+02 2.400e+01 5.300e+01 2.060e+02 1.400e+01 3.240e+02
             2.950e+02 3.960e+02 6.700e+01 1.540e+02 4.250e+02 4.500e+01 1.378e+03
             3.370e+02 1.490e+02 1.430e+02 5.100e+01 1.710e+02 2.340e+02 6.300e+01
             7.660e+02 3.200e+01 8.100e+01 1.630e+02 5.540e+02 2.180e+02 6.320e+02
             1.140e+02 5.670e+02 3.590e+02 4.510e+02 6.210e+02 7.880e+02 8.600e+01
             7.960e+02 3.910e+02 2.280e+02 8.800e+01 1.650e+02 4.280e+02 4.100e+02
             5.640e+02 3.680e+02 3.180e+02 5.790e+02 6.500e+01 7.050e+02 4.080e+02
             2.440e+02 1.230e+02 3.660e+02 7.310e+02 4.480e+02 2.940e+02 3.100e+02
             2.370e+02 4.260e+02 9.600e+01 4.380e+02 1.940e+02 1.190e+02]
            Total.No.Of.Unique Value: 327
```

```
              ----------------------------------------------------------------------
              ----------------------------------------------------------------------
              ----------------
              NUll values is True or False :0
              BsmtFinSF1: [ 706  978  486  216  655  732 1369  859    0  851  906  998
              737  733
                578  646  504  840  188  234 1218 1277 1018 1153 1213  731  643  967
                747  280  179  456 1351   24  763  182  104 1810  384  490  649  632
                941  739  912 1013  603 1880  565  320  462  228  336  448 1201   33
                588  600  713 1046  648  310 1162  520  108  569 1200  224  705  444
                250  984   35  774  419  170 1470  938  570  300  120  116  512  567
                445  695  405 1005  668  821  432 1300  507  679 1332  209  680  716
               1400  416  429  222   57  660 1016  370  351  379 1288  360  639  495
                288 1398  477  831 1904  436  352  611 1086  297  626  560  390  566
               1126 1036 1088  641  617  662  312 1065  787  468   36  822  378  946
                341   16  550  524   56  321  842  689  625  358  402   94 1078  329
                929  697 1573  270  922  503 1334  361  672  506  714  403  751  226
                620  546  392  421  905  904  430  614  450  210  292  795 1285  819
                420  841  281  894 1464  700  262 1274  518 1236  425  692  987  970
                 28  256 1619   40  846 1124  720  828 1249  810  213  585  129  498
               1270  573 1410 1082  236  388  334  874  956  773  399  162  712  609
                371  540   72  623  428  350  298 1445  218  985  631 1280  241  690
                266  777  812  786 1116  789 1056   50 1128  775 1309 1246  986  616
               1518  664  387  471  385  365 1767  133  642  247  331  742 1606  916
                185  544  553  326  778  386  426  368  459 1350 1196  630  994  168
               1261 1567  299  897  607  836  515  374 1231  111  356  400  698 1247
                257  380   27  141  991  650  521 1436 2260  719  377 1330  348 1219
                783  969  673 1358 1260  144  584  554 1002  619  180  559  308  866
                895  637  604 1302 1071  290  728    2 1441  943  231  414  349  442
                328  594  816 1460 1324 1338  685 1422 1283   81  454  903  605  990
                206  150  457   48  871   41  674  624  480 1154  738  493 1121  282
                500  131 1696  806 1361  920 1721  187 1138  988  193  551  767 1186
                892  311  827  543 1003 1059  239  945   20 1455  965  980  863  533
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 943 1692 1109 1477 1320 1429 2042 2775 2028  838  860 1473  935 1582
2296  924 1402 1556 1904 1915 1986 2008 3194 1029 2153 1032 1120 1054
 832 1828 2262 2614  980 1512 1790 1116 1520 1350 1750 1554 1411 3395
 800 1387  796 1567 1518 1929 2704 1766  981 1094 1839 1665 1510 1469
2113 1486 2448 1181 1936 2380 1679 1437 1180 1476 1369 1136 1441  792
 923 1291 1761 1102 1419 4316 2519 1539 1137  616 1148 1391 1164 2576
1824  729 1178 2554 2418  971 1742 1698 1776 1146 2031  948 1349 1464
2715 2256 2640 1529 1140 2098 1026 1471 1386 2531 1547 2365 1506 1714
1836 3279 1220 1117 1973 1204 1614 1603 1110 1342 2084  901 2087 1145
1062 2013 1895 1564  773 3140 1688 2822 1128 1428 1576 2138 1309 1044
1008 1052  936 1733 1489 1434 2126 1223 1829 1516 1067 1559 1099 1482
1165 1416 1701 1775 2358 1646 1445 1779 1481 2654 1426 1039 1372 1002
1949  910 2610 2224 1155 1090 2230  892 1712 1393 2217 1683 1068  951
2240 2364 1670  902 1063 1636 2057 2274 1015 2002  480 1229 2127 2200
1617 1686 2374 1978 1788 2236 1466  925 1905 1500 2069 1971 1962 2403
1381  965 1958 2872 1894 1308 1098 1095  918 2019  869 1241 2612 2290
1940 2030 1851 1050  944  691 1504  985 1657 1522 1271 1022 1082 1132
2898 1264 3082 1654  954 1803 2329 2524 2868 1771  930 1977 1989 1523
1364 2184 1991 1338 2337 1103 1154 2260 1571 1611 2521  893 1240 1740
1459 1251 1247 1088  438  950 2622 2021 1690 1658 1964  833 1012  698
1005 1530 1981  974 2210  986 1020 1868 2828 1006 1298  932 1811 1265
1580 1876 1671 2108 3627 1261 3086 2345 1343 1124 2514 4476 1130 1221
1699 1624 1804 1622 1863 1630 1074 2196 1283 1845 1902 1211 1846 2136
1490 1138 1933 1702 1507 2620 1190 1188 1784 1948 1141 1173 2076 1553
2058 1405  874 2167 1987 1166 1675 1889 2018 3447 1524 1357 1395 2447
1659 1970 2372 5642 1246 1983 2526 1708 1122 1274 2810 2599 2112 1787
1923  708  774 2792 1334  693 1861  872 2169 1913 2156 2634 3238 1865
1078 1980 2601 1738 1475 1374 2633  790 2117 1762 2784 1746 1584 1912
2482 1687 1513 1608 2093 1840 1848 1569 2450 2201  804 1537 1932 1725
2555 2007  913 1346 2073 2340 1256]
```

```
Total.No.Of.Unique Value: 861
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :0
BsmtFullBath: [1 0 2 3]
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :0
BsmtHalfBath: [0 1 2]
Total.No.Of.Unique Value: 3
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :0
FullBath: [2 1 3 0]
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :0
HalfBath: [1 0 2]
Total.No.Of.Unique Value: 3
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :0
BedroomAbvGr: [3 4 1 2 0 5 6 8]
Total.No.Of.Unique Value: 8
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :0
KitchebvGr: [1 2 3 0]
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :0
TotRmsAbvGrd: [ 8   6   7   9   5 11   4 10 12   3   2 14]
Total.No.Of.Unique Value: 12
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :0
Fireplaces: [0 1 2 3]
Total.No.Of.Unique Value: 4
--------------------------------------------------------------------------
--------------------------------------------------------------------------
----------------
NUll values is True or False :81
GarageYrBlt: [2003. 1976. 2001. 1998. 2000. 1993. 2004. 1973. 1931. 193
9. 1965. 2005.
 1962. 2006. 1960. 1991. 1970. 1967. 1958. 1930. 2002. 1968. 2007. 2008.
 1957. 1920. 1966. 1959. 1995. 1954. 1953.    nan 1983. 1977. 1997. 1985.
 1963. 1981. 1964. 1999. 1935. 1990. 1945. 1987. 1989. 1915. 1956. 1948.
 1974. 2009. 1950. 1961. 1921. 1900. 1979. 1951. 1969. 1936. 1975. 1971.
 1923. 1984. 1926. 1955. 1986. 1988. 1916. 1932. 1972. 1918. 1980. 1924.
```

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     1996. 1940. 1949. 1994. 1910. 1978. 1982. 1992. 1925. 1941. 2010. 1927.
     1947. 1937. 1942. 1938. 1952. 1928. 1922. 1934. 1906. 1914. 1946. 1908.
     1929. 1933.]
Total.No.Of.Unique Value: 97
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :0
GarageCars: [2 3 1 0 4]
Total.No.Of.Unique Value: 5
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :0
GarageArea: [ 548  460  608  642  836  480  636  484  468  205  384  736
352  840
   576  516  294  853  280  534  572  270  890  772  319  240  250  271
   447  556  691  672  498  246    0  440  308  504  300  670  826  386
   388  528  894  565  641  288  645  852  558  220  667  360  427  490
   379  297  283  509  405  758  461  400  462  420  432  506  684  472
   366  476  410  740  648  273  546  325  792  450  180  430  594  390
   540  264  530  435  453  750  487  624  471  318  766  660  470  720
   577  380  434  866  495  564  312  625  680  678  726  532  216  303
   789  511  616  521  451 1166  252  497  682  666  786  795  856  473
   398  500  349  454  644  299  210  431  438  675  968  721  336  810
   494  457  818  463  604  389  538  520  309  429  673  884  868  492
   413  924 1053  439  671  338  573  732  505  575  626  898  529  685
   281  539  418  588  282  375  683  843  552  870  888  746  708  513
  1025  656  872  292  441  189  880  676  301  474  706  617  445  200
   592  566  514  296  244  610  834  639  501  846  560  596  600  373
   947  350  396  864  304  784  696  569  628  550  493  578  198  422
   228  526  525  908  499  508  694  874  164  402  515  286  603  900
   583  889  858  502  392  403  527  765  367  426  615  871  570  406
   590  612  650 1390  275  452  842  816  621  544  486  230  261  531
   393  774  749  364  627  260  256  478  442  562  512  839  330  711
  1134  416  779  702  567  832  326  551  606  739  408  475  704  983
   768  632  541  320  800  831  554  878  752  614  481  496  423  841
   895  412  865  630  605  602  618  444  397  455  409  820 1020  598
   857  595  433  776 1220  458  613  456  436  812  686  611  425  343
   479  619  902  574  523  414  738  354  483  327  756  690  284  833
   601  533  522  788  555  689  796  808  510  255  424  305  368  824
   328  160  437  665  290  912  905  542  716  586  467  582 1248 1043
   254  712  719  862  928  782  466  714 1052  225  234  324  306  830
   807  358  186  693  482  813  995  757 1356  459  701  322  315  668
   404  543  954  850  477  276  518 1014  753 1418  213  844  860  748
   248  287  825  647  342  770  663  377  804  936  722  208  662  754
   622  620  370 1069  372  923  192]
Total.No.Of.Unique Value: 441
---------------------------------------------------------------------------
---------------------------------------------------------------------------
----------------
NUll values is True or False :0
WoodDeckSF: [  0 298 192  40 255 235  90 147 140 160  48 240 171 100 406
222 288  49
  203 113 392 145 196 168 112 106 857 115 120  12 576 301 144 300  74 127
  232 158 352 182 180 166 224  80 367  53 188 105  24  98 276 200 409 239
  400 476 178 574 237 210 441 116 280 104  87 132 238 149 355  60 139 108
  351 209 216 248 143 365 370  58 197 263 123 138 333 250 292  95 262  81
  289 124 172 110 208 468 256 302 190 340 233 184 201 142 122 155 670 135
  495 536 306  64 364 353  66 159 146 296 125  44 215 264  88  89  96 414
```

```
 519 206 141 260 324 156 220  38 261 126  85 466 270  78 169 320 268  72
 349  42  35 326 382 161 179 103 253 148 335 176 390 328 312 185 269 195
  57 236 517 304 198 426  28 316 322 307 257 219 416 344 380  68 114 327
 165 187 181  92 228 245 503 315 241 303 133 403  36  52 265 207 150 290
 486 278  70 418 234  26 342  97 272 121 243 511 154 164 173 384 202  56
 321  86 194 421 305 117 550 509 153 394 371  63 252 136 186 170 474 214
 199 728 436  55 431 448 361 362 162 229 439 379 356  84 635 325  33 212
 314 242 294  30 128  45 177 227 218 309 404 500 668 402 283 183 175 586
 295  32 366 736]
Total.No.Of.Unique Value: 274
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :0
OpenPorchSF: [ 61   0  42  35  84  30  57 204   4  21  33 213 112 102 15
4 159 110  90
  56  32  50 258  54  65  38  47  64  52 138 104  82  43 146  75  72  70
  49  11  36 151  29  94 101 199  99 234 162  63  68  46  45 122 184 120
  20  24 130 205 108  80  66  48  25  96 111 106  40 114   8 136 132  62
 228  60 238 260  27  74  16 198  26  83  34  55  22  98 172 119 208 105
 140 168  28  39 148  12  51 150 117 250  10  81  44 144 175 195 128  76
  17  59 214 121  53 231 134 192 123  78 187  85 133 176 113 137 125 523
 100 285  88 406 155  73 182 502 274 158 142 243 235 312 124 267 265  87
 288  23 152 341 116 160 174 247 291  18 170 156 166 129 418 240  77 364
 188 207  67  69 131 191  41 118 252 189 282 135  95 224 169 319  58  93
 244 185 200  92 180 263 304 229 103 211 287 292 241 547  91  86 262 210
 141  15 126 236]
Total.No.Of.Unique Value: 202
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :0
EnclosedPorch: [  0 272 228 205 176  87 172 102  37 144  64 114 202 128
156  44  77 192
 140 180 183  39 184  40 552  30 126  96  60 150 120 112 252  52 224 234
 244 268 137  24 108 294 177 218 242  91 160 130 169 105  34 248 236  32
  80 115 291 116 158 210  36 200  84 148 136 240  54 100 189 293 164 216
 239  67  90  56 129  98 143  70 386 154 185 134 196 264 275 230 254  68
 194 318  48  94 138 226 174  19 170 220 214 280 190 330 208 145 259  81
  42 123 162 286 168  20 301 198 221 212  50  99]
Total.No.Of.Unique Value: 120
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--------------------------------------------------------------------------
-----------------
NUll values is True or False :0
3SsnPorch: [  0 320 407 130 180 168 140 508 238 245 196 144 182 162  23
216  96 153
 290 304]
Total.No.Of.Unique Value: 20
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :0
ScreenPorch: [  0 176 198 291 252  99 184 168 130 142 192 410 224 266 17
0 154 153 144
 128 259 160 271 234 374 185 182  90 396 140 276 180 161 145 200 122  95
 120  60 126 189 260 147 385 287 156 100 216 210 197 204 225 152 175 312
 222 265 322 190 233  63  53 143 273 288 263  80 163 116 480 178 440 155
 220 119 165  40]
Total.No.Of.Unique Value: 76
```

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--------------------------------------------------------------------------
-----------------
NUll values is True or False :0
PoolArea: [  0 512 648 576 555 480 519 738]
Total.No.Of.Unique Value: 8
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :0
MiscVal: [    0    700    350    500    400    480    450 15500   1200    800  2
000    600
   3500   1300     54    620    560   1400   8300   1150   2500]
Total.No.Of.Unique Value: 21
--------------------------------------------------------------------------
--------------------------------------------------------------------------
-----------------
NUll values is True or False :0
MoSold: [ 2   5   9 12 10   8 11   4   1   7   3   6]
Total.No.Of.Unique Value: 12
--------------------------------------------------------------------------
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-----------------
NUll values is True or False :0
YrSold: [2008 2007 2006 2009 2010]
Total.No.Of.Unique Value: 5
--------------------------------------------------------------------------
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-----------------
NUll values is True or False :0
SalePrice: [208500 181500 223500 140000 250000 143000 307000 200000 1299
00 118000
 129500 345000 144000 279500 157000 132000 149000  90000 159000 139000
 325300 139400 230000 154000 256300 134800 306000 207500  68500  40000
 149350 179900 165500 277500 309000 145000 153000 109000  82000 160000
 170000 130250 141000 319900 239686 249700 113000 127000 177000 114500
 110000 385000 130000 180500 172500 196500 438780 124900 158000 101000
 202500 219500 317000 180000 226000  80000 225000 244000 185000 144900
 107400  91000 135750 136500 193500 153500 245000 126500 168500 260000
 174000 164500  85000 123600 109900  98600 163500 133900 204750 214000
  94750  83000 128950 205000 178000 118964 198900 169500 100000 115000
 190000 136900 383970 217000 259500 176000 155000 320000 163990 136000
 153900 181000  84500 128000  87000 150000 150750 220000 171000 231500
 166000 204000 125000 105000 222500 122000 372402 235000  79000 109500
 269500 254900 162500 412500 103200 152000 127500 325624 183500 228000
 128500 215000 239000 163000 184000 243000 211000 501837 200100 120000
 475000 173000 135000 153337 286000 315000 192000 148500 311872 104000
 274900 171500 112000 143900 277000  98000 186000 252678 156000 161750
 134450 210000 107000 311500 167240 204900  97000 386250 290000 106000
 192500 148000 403000  94500 128200 216500  89500 185500 194500 318000
 262500 110500 241500 137000  76500 276000 151000  73000 175500 179500
 120500 266000 124500 201000 415298 228500 244600 179200 164700  88000
 153575 233230 135900 131000 167000 142500 175000 158500 267000 149900
 295000 305900  82500 360000 165600 119900 375000 188500 270000 187500
 342643 354000 301000 126175 242000 324000 145250 214500  78000 119000
 284000 207000 228950 377426 202900  87500 140200 151500 157500 437154
 318061  95000 105900 177500 134000 280000 198500 147000 165000 162000
 172400 134432 123000  61000 340000 394432 179000 187750 213500  76000
 240000  81000 191000 426000 106500 129000  67000 241000 245500 164990
 108000 258000 168000 339750  60000 222000 181134 149500 126000 142000
```

```
       206300 275000 109008 195400   85400   79900 122500 212000 116000   90350
       555000 162900 199900 119500 188000 256000 161000 263435   62383 188700
       124000 178740 146500 187000 440000 251000 132500 208900 380000 297000
        89471 326000 374000 164000   86000 133000 172785   91300   34900 430000
       226700 289000 208300 164900 202665   96500 402861 265000 234000 106250
       184750 315750 446261 200624 107500   39300 111250 272000 248000 213250
       179665 229000 263000 112500 255500 121500 268000 325000 316600 135960
       142600 224500 118500 146000 131500 181900 253293 369900   79500 185900
       451950 138000 319000 114504 194201 217500 221000 359100 313000 261500
        75500 137500 183200 105500 314813 305000 165150 139900 209500   93000
       264561 274000 370878 143250   98300 205950 350000 145500   97500 197900
       402000 423000 230500 173500 103600 257500 372500 159434 285000 227875
       148800 392000 194700 755000 335000 108480 141500   89000 123500 138500
       196000 312500 361919 213000   55000 302000 254000 179540   52000 102776
       189000 130500 159500 341000 103000 236500 131400   93500 239900 299800
       236000 265979 260400 275500 158900 179400 215200 337000 264132 216837
       538000 134900 102000 395000 221500 175900 187100 161500 233000 107900
       160200 146800 269790 143500 485000 582933 227680 135500 159950 144500
        55993 157900 224900 271000 224000 183000 139500 232600 147400 237000
       139950 174900 133500 189950 250580 248900 169000 200500   66500 303477
       132250 328900 122900 154500 118858 142953 611657 125500 255000 154300
       173733   75000   35311 238000 176500 145900 169990 193000 117500 184900
       253000 239799 244400 150900 197500 172000 116500 214900 178900   37900
        99500 182000 167500   85500 178400 336000 159895 255900 117000 395192
       195000 197000 348000 173900 337500 121600 206000 232000 136905 119200
       227000 203000 213490 194000 287000 293077 310000 119750   84000 315500
       262280 278000 139600 556581   84900 176485 200141 185850 328000 167900
       151400   91500 138800 155900   83500 252000   92900 176432 274725 134500
       184100 133700 118400 212900 163900 259000 239500   94000 424870 174500
       116900 201800 218000 235128 108959 233170 245350 625000 171900 154900
       392500 745000 186700 104900 262000 219210 116050 271900 229456   80500
       137900 367294 101800 138887 265900 248328 465000 186500 169900 171750
       294000 165400 301500   99900 128900 183900 378500 381000 185750   68400
       150500 281000 333168 206900 295493 111000 156500   72500   52500 155835
       108500 283463 410000 156932 144152 216000 274300 466500   58500 237500
       377500 246578 281213 137450 193879 282922 257000 223000 274970 182900
       192140 143750   64500 394617 149700 149300 121000 179600   92000 287090
       266500 142125 147500]
```

In [15]:
```python
np.where(no_data['LotFrontage'].isnull())
```

Out[15]: (array([7,   12,   14,   16,   24,   31,   42,   43,   50,   64,   66,
          76,   84,   95, 100, 104, 111, 113, 116, 120, 126, 131,
         133, 136, 147, 149, 152, 153, 160, 166, 169, 170, 177,
         180, 186, 191, 203, 207, 208, 214, 218, 221, 234, 237,
         244, 249, 269, 287, 288, 293, 307, 308, 310, 319, 328,
         330, 335, 342, 346, 347, 351, 356, 360, 361, 364, 366,
         369, 370, 375, 384, 392, 393, 404, 405, 412, 421, 426,
         447, 452, 457, 458, 459, 465, 470, 484, 490, 496, 516,
         518, 529, 537, 538, 539, 541, 545, 559, 560, 564, 569,
         580, 593, 610, 611, 612, 616, 623, 626, 641, 645, 660,
         666, 668, 672, 679, 682, 685, 687, 690, 706, 709, 714,
         720, 721, 726, 734, 745, 746, 751, 757, 770, 783, 785,
         789, 791, 794, 811, 816, 817, 822, 828, 840, 845, 851,
         853, 855, 856, 859, 865, 868, 879, 882, 893, 900, 904,
         908, 911, 917, 925, 927, 928, 929, 939, 941, 944, 953,
         961, 967, 975, 980, 983, 988, 996, 997, 1003, 1006, 1017,
        1018, 1024, 1030, 1032, 1033, 1035, 1037, 1041, 1045, 1057, 1059,
        1064, 1077, 1084, 1086, 1097, 1108, 1110, 1116, 1122, 1124, 1138,
        1141, 1143, 1146, 1148, 1153, 1154, 1161, 1164, 1177, 1180, 1190,
        1193, 1206, 1213, 1230, 1233, 1244, 1247, 1251, 1253, 1260, 1262,
        1268, 1270, 1271, 1272, 1276, 1277, 1286, 1287, 1290, 1300, 1301,
        1309, 1312, 1318, 1321, 1342, 1346, 1348, 1354, 1356, 1357, 1358,
        1362, 1365, 1368, 1373, 1381, 1383, 1396, 1407, 1417, 1419, 1423,
        1424, 1429, 1431, 1441, 1443, 1446]),)

In [16]:
```python
np.where(no_data['GarageYrBlt'].isnull())
```

Out[16]: (array([39,   48,   78,   88,   89,   99, 108, 125, 127, 140,   148,
               155, 163, 165, 198, 210, 241, 250, 287, 291, 307, 375,
               386, 393, 431, 434, 441, 464, 495, 520, 528, 533, 535,
               562, 582, 613, 614, 620, 635, 636, 638, 649, 705, 710,
               738, 750, 784, 826, 843, 921, 942, 954, 960, 968, 970,
               976, 1009, 1011, 1030, 1038, 1096, 1123, 1131, 1137, 1143, 1173,
              1179, 1218, 1219, 1234, 1257, 1283, 1323, 1325, 1326, 1337, 1349,
              1407, 1449, 1450, 1453]),)

In [17]:
```python
no_data[no_data.isna().any(axis=1)]
```

Out[17]:

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
7	8	60	NaN	10382	7	6	1973	
12	13	20	NaN	12968	5	6	1962	
14	15	20	NaN	10920	6	5	1960	
16	17	20	NaN	11241	6	7	1970	
24	25	20	NaN	8246	5	8	1968	
31	32	20	NaN	8544	5	6	1966	
39	40	90	65.0	6040	4	5	1955	
42	43	85	NaN	9180	5	7	1983	
43	44	20	NaN	9200	5	6	1975	
48	49	190	33.0	4456	4	5	1920	
50	51	60	NaN	13869	6	6	1997	
64	65	60	NaN	9375	7	5	1997	
66	67	20	NaN	19900	7	5	1970	
76	77	20	NaN	8475	4	7	1956	
78	79	90	72.0	10778	4	5	1968	
84	85	80	NaN	8530	7	5	1995	
88	89	50	105.0	8470	3	2	1915	
89	90	20	60.0	8070	4	5	1994	
95	96	60	NaN	9765	6	8	1993	
99	100	20	77.0	9320	4	5	1959	
100	101	20	NaN	10603	6	7	1977	
104	105	50	NaN	7758	7	4	1931	
108	109	50	85.0	8500	5	7	1919	
111	112	80	NaN	7750	7	5	2000	
113	114	20	NaN	21000	6	5	1953	
116	117	20	NaN	11616	5	5	1962	
120	121	80	NaN	21453	6	5	1969	
125	126	190	60.0	6780	6	8	1935	
126	127	120	NaN	4928	6	5	1976	
127	128	45	55.0	4388	5	7	1930	
131	132	60	NaN	12224	6	5	2000	
133	134	20	NaN	6853	8	5	2001	
136	137	20	NaN	10355	5	5	1967	
140	141	20	70.0	10500	4	5	1971	
147	148	60	NaN	9505	7	5	2001	
148	149	20	63.0	7500	7	5	2004	

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
149	150	50	NaN	6240	5	4	1936	
152	153	60	NaN	14803	6	5	1971	
153	154	20	NaN	13500	6	7	1960	
155	156	50	60.0	9600	6	5	1924	
160	161	20	NaN	11120	6	6	1984	
163	164	45	55.0	5500	4	6	1956	
165	166	190	62.0	10106	5	7	1940	
166	167	20	NaN	10708	5	5	1955	
169	170	20	NaN	16669	8	6	1981	
170	171	50	NaN	12358	5	6	1941	
177	178	50	NaN	13650	5	5	1958	
180	181	160	NaN	2117	6	5	2000	
186	187	80	NaN	9947	7	5	1990	
191	192	60	NaN	7472	7	9	1972	
198	199	75	92.0	5520	6	6	1912	
203	204	120	NaN	4438	6	5	2004	
207	208	20	NaN	12493	4	5	1960	
208	209	60	NaN	14364	7	5	1988	
210	211	30	67.0	5604	5	6	1925	
214	215	60	NaN	10900	6	7	1977	
218	219	50	NaN	15660	7	9	1939	
221	222	60	NaN	8068	6	5	2002	
234	235	60	NaN	7851	6	5	2002	
237	238	60	NaN	9453	7	7	1993	
241	242	30	40.0	3880	5	9	1945	
244	245	60	NaN	8880	7	5	1994	
249	250	50	NaN	159000	6	7	1958	
250	251	30	55.0	5350	3	2	1940	
269	270	20	NaN	7917	6	7	1976	
287	288	20	NaN	8125	4	4	1971	
288	289	20	NaN	9819	5	5	1967	
291	292	190	55.0	5687	5	6	1912	
293	294	60	NaN	16659	7	7	1977	
307	308	50	NaN	7920	6	7	1920	
308	309	30	NaN	12342	4	5	1940	
310	311	60	NaN	7685	6	5	1993	
319	320	80	NaN	14115	7	5	1980	
328	329	75	NaN	11888	6	6	1916	

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
330	331	90	NaN	10624	5	4	1964	
335	336	190	NaN	164660	5	6	1965	
342	343	90	NaN	8544	3	4	1949	
346	347	20	NaN	12772	6	8	1960	
347	348	20	NaN	17600	6	5	1960	
351	352	120	NaN	5271	7	5	1986	
356	357	20	NaN	9248	6	6	1992	
360	361	85	NaN	7540	6	6	1978	
361	362	50	NaN	9144	5	5	1940	
364	365	60	NaN	18800	6	5	1976	
366	367	20	NaN	9500	6	5	1963	
369	370	20	NaN	9830	5	7	1959	
370	371	60	NaN	8121	6	5	2000	
375	376	30	NaN	10020	1	1	1922	
384	385	60	NaN	53107	6	5	1992	
386	387	50	58.0	8410	5	3	1910	
392	393	20	NaN	8339	5	7	1959	
393	394	30	NaN	7446	4	5	1941	
404	405	60	NaN	10364	6	5	1995	
405	406	20	NaN	9991	4	4	1976	
412	413	20	NaN	4403	7	5	2009	
421	422	20	NaN	16635	6	7	1977	
426	427	80	NaN	12800	7	5	1989	
431	432	50	60.0	5586	6	7	1920	
434	435	180	21.0	1890	4	7	1972	
441	442	90	92.0	12108	4	4	1955	
447	448	60	NaN	11214	7	5	1998	
452	453	60	NaN	9303	6	5	1996	
457	458	20	NaN	53227	4	6	1954	
458	459	70	NaN	5100	8	7	1925	
459	460	50	NaN	7015	5	4	1950	
464	465	20	60.0	8430	5	5	1978	
465	466	120	NaN	3072	7	5	2004	
470	471	120	NaN	6820	8	5	1985	
484	485	20	NaN	7758	5	7	1962	
490	491	160	NaN	2665	5	6	1976	
495	496	30	60.0	7879	4	5	1920	
496	497	20	NaN	12692	8	5	1992	

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
516	517	80	NaN	10448	6	6	1972	
518	519	60	NaN	9531	6	5	1998	
520	521	190	60.0	10800	4	7	1900	
528	529	30	58.0	9098	4	7	1920	
529	530	20	NaN	32668	6	3	1957	
533	534	20	50.0	5000	1	3	1946	
535	536	190	70.0	7000	5	7	1910	
537	538	20	NaN	12735	4	5	1972	
538	539	20	NaN	11553	5	5	1968	
539	540	20	NaN	11423	8	5	2001	
541	542	60	NaN	11000	8	5	2000	
545	546	50	NaN	13837	7	5	1988	
559	560	120	NaN	3196	7	5	2003	
560	561	20	NaN	11341	5	6	1957	
562	563	30	63.0	13907	5	6	1940	
564	565	60	NaN	13346	7	5	1992	
569	570	90	NaN	7032	5	5	1979	
580	581	20	NaN	14585	6	6	1960	
582	583	90	81.0	11841	6	5	1990	
593	594	120	NaN	4435	6	5	2003	
610	611	60	NaN	11050	9	5	2000	
611	612	80	NaN	10395	6	6	1978	
612	613	60	NaN	11885	8	5	2001	
613	614	20	70.0	8402	5	5	2007	
614	615	180	21.0	1491	4	6	1972	
616	617	60	NaN	7861	6	5	2002	
620	621	30	45.0	8248	3	3	1914	
623	624	160	NaN	2117	6	5	2000	
626	627	20	NaN	12342	5	5	1960	
635	636	190	60.0	10896	6	7	1914	
636	637	30	51.0	6120	2	3	1936	
638	639	30	67.0	8777	5	7	1910	
641	642	60	NaN	7050	7	5	2001	
645	646	20	NaN	10530	6	5	1971	
649	650	180	21.0	1936	4	6	1970	
650	651	60	65.0	8125	7	6	2007	
660	661	60	NaN	12384	7	7	1976	
666	667	60	NaN	18450	6	5	1965	

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
668	669	20	NaN	14175	5	6	1956	
672	673	20	NaN	11250	6	6	1977	
679	680	20	NaN	9945	5	5	1961	
682	683	120	NaN	2887	6	5	1996	
685	686	160	NaN	5062	7	5	1984	
687	688	160	NaN	5105	7	5	2004	
690	691	120	NaN	4426	6	5	2004	
705	706	190	70.0	5600	4	5	1930	
706	707	20	NaN	115149	7	5	1971	
709	710	20	NaN	7162	5	7	1966	
710	711	30	56.0	4130	3	6	1935	
714	715	60	NaN	13517	6	8	1976	
720	721	120	NaN	6563	8	5	1985	
721	722	120	NaN	4426	6	5	2004	
726	727	20	NaN	21695	6	9	1988	
734	735	20	NaN	8978	5	5	1968	
738	739	90	60.0	10800	5	5	1987	
745	746	60	NaN	8963	8	9	1976	
746	747	60	NaN	8795	7	5	2000	
750	751	50	55.0	8800	4	7	1910	
751	752	60	NaN	7750	7	5	2003	
757	758	60	NaN	11616	6	5	1978	
770	771	85	NaN	7252	5	5	1982	
783	784	85	NaN	9101	5	6	1978	
784	785	75	35.0	6300	6	6	1914	
785	786	20	NaN	9790	6	5	1967	
789	790	60	NaN	12205	6	8	1966	
791	792	80	NaN	11333	6	5	1976	
794	795	60	NaN	10832	7	5	1994	
811	812	120	NaN	4438	6	5	2004	
816	817	20	NaN	11425	5	6	1954	
817	818	20	NaN	13265	8	5	2002	
822	823	60	NaN	12394	7	5	2003	
826	827	45	50.0	6130	5	6	1924	
828	829	60	NaN	28698	5	5	1967	
840	841	70	NaN	12155	6	8	1925	
843	844	90	80.0	8000	5	4	1961	
845	846	85	NaN	16647	5	5	1975	

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
851	852	120	NaN	3196	8	5	2003	
853	854	80	NaN	12095	6	6	1964	
855	856	20	NaN	6897	5	8	1962	
856	857	80	NaN	10970	6	6	1978	
859	860	60	NaN	11029	6	7	1968	
865	866	20	NaN	8750	5	6	1970	
868	869	60	NaN	14762	5	6	1948	
879	880	20	NaN	7000	5	8	1978	
882	883	60	NaN	9636	6	5	1992	
893	894	20	NaN	13284	5	5	1954	
900	901	20	NaN	7340	4	6	1971	
904	905	20	NaN	6173	5	6	1967	
908	909	20	NaN	8885	5	5	1983	
911	912	20	NaN	9286	5	7	1977	
917	918	20	NaN	17140	4	6	1956	
921	922	90	67.0	8777	5	7	1900	
925	926	20	NaN	15611	5	6	1977	
927	928	60	NaN	9900	7	5	1968	
928	929	20	NaN	11838	8	5	2001	
929	930	60	NaN	13006	7	5	1997	
936	937	20	67.0	10083	7	5	2003	
939	940	70	NaN	24090	7	7	1940	
941	942	60	NaN	8755	7	5	1999	
942	943	90	42.0	7711	4	3	1977	
944	945	20	NaN	14375	6	6	1958	
953	954	60	NaN	11075	5	4	1969	
954	955	90	35.0	9400	6	5	1975	
960	961	20	50.0	7207	5	7	1958	
961	962	60	NaN	12227	6	7	1977	
967	968	20	NaN	7390	5	7	1955	
968	969	50	50.0	5925	3	6	1910	
970	971	50	60.0	10800	4	4	1949	
973	974	20	95.0	11639	7	5	2007	
975	976	160	NaN	2651	7	5	2000	
976	977	30	51.0	5900	4	7	1923	
977	978	120	35.0	4274	7	5	2006	
980	981	85	NaN	12122	7	9	1961	
983	984	60	NaN	11250	8	5	2002	

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
988	989	60	NaN	12046	6	6	1976	
996	997	20	NaN	10659	5	6	1961	
997	998	20	NaN	11717	6	6	1970	
1003	1004	90	NaN	11500	5	6	1976	
1006	1007	20	NaN	12155	6	3	1970	
1009	1010	50	60.0	6000	5	5	1926	
1011	1012	90	75.0	9825	5	5	1965	
1017	1018	120	NaN	5814	8	5	1984	
1018	1019	80	NaN	10784	7	5	1991	
1024	1025	20	NaN	15498	8	6	1976	
1030	1031	190	NaN	7082	5	8	1916	
1032	1033	60	NaN	14541	8	7	1993	
1033	1034	20	NaN	8125	7	5	2002	
1035	1036	20	NaN	11500	4	3	1957	
1037	1038	60	NaN	9240	8	5	2001	
1038	1039	160	21.0	1533	4	6	1970	
1041	1042	60	NaN	9130	6	8	1966	
1045	1046	20	NaN	13680	3	5	1955	
1057	1058	60	NaN	29959	7	6	1994	
1059	1060	50	NaN	11275	6	7	1932	
1064	1065	20	NaN	11000	5	6	1966	
1077	1078	20	NaN	15870	5	5	1969	
1084	1085	60	NaN	13031	6	5	1995	
1086	1087	160	NaN	1974	4	5	1973	
1096	1097	70	60.0	6882	6	7	1914	
1097	1098	120	NaN	3696	8	5	1986	
1108	1109	60	NaN	8063	6	5	2000	
1110	1111	60	NaN	8000	6	5	1995	
1116	1117	80	NaN	7750	8	5	2002	
1122	1123	20	NaN	8926	4	3	1956	
1123	1124	20	50.0	9405	5	9	1947	
1124	1125	80	NaN	9125	7	5	1992	
1131	1132	20	63.0	10712	5	5	1991	
1137	1138	50	54.0	6342	5	8	1875	
1138	1139	20	NaN	9819	6	5	1977	
1141	1142	60	NaN	10304	5	7	1976	
1143	1144	20	NaN	9000	5	3	1959	
1146	1147	20	NaN	11200	6	5	1985	

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
1148	1149	50	NaN	5700	7	7	1926	
1153	1154	30	NaN	5890	6	8	1930	
1154	1155	60	NaN	13700	7	6	1965	
1161	1162	20	NaN	14778	6	7	1954	
1164	1165	80	NaN	16157	5	7	1978	
1173	1174	50	138.0	18030	5	6	1946	
1177	1178	50	NaN	3950	6	8	1926	
1179	1180	20	77.0	8335	5	5	1954	
1180	1181	60	NaN	11170	7	5	1990	
1190	1191	190	NaN	32463	4	4	1961	
1193	1194	120	NaN	4500	6	5	1999	
1206	1207	20	NaN	8900	4	4	1966	
1213	1214	80	NaN	10246	4	9	1965	
1218	1219	50	52.0	6240	4	5	1947	
1219	1220	160	21.0	1680	6	5	1971	
1230	1231	90	NaN	18890	5	5	1977	
1233	1234	20	NaN	12160	5	5	1959	
1234	1235	70	55.0	8525	5	6	1911	
1243	1244	20	107.0	13891	10	5	2006	
1244	1245	70	NaN	11435	8	7	1929	
1247	1248	80	NaN	12328	6	5	1976	
1251	1252	120	NaN	3136	7	5	2003	
1253	1254	60	NaN	17542	7	7	1974	
1257	1258	30	56.0	4060	5	8	1922	
1260	1261	60	NaN	24682	6	5	1999	
1262	1263	50	NaN	11250	4	5	1957	
1268	1269	50	NaN	14100	8	9	1935	
1270	1271	40	NaN	23595	7	6	1979	
1271	1272	20	NaN	9156	6	7	1968	
1272	1273	20	NaN	13526	5	6	1965	
1276	1277	60	NaN	12936	6	6	1972	
1277	1278	80	NaN	17871	6	5	1967	
1278	1279	60	75.0	9473	8	5	2002	
1283	1284	90	94.0	9400	6	5	1971	
1286	1287	20	NaN	9790	6	5	1963	
1287	1288	20	NaN	36500	5	5	1964	
1290	1291	80	NaN	14112	5	7	1964	
1300	1301	60	NaN	10762	7	5	1999	

	Id	MSSubClass	LotFrontage	LotArea	OverallQual	OverallCond	YearBuilt	YearF
1301	1302	70	NaN	7500	6	7	1942	
1309	1310	20	NaN	7153	6	5	1991	
1312	1313	60	NaN	9572	8	5	1990	
1318	1319	20	NaN	14781	8	5	2001	
1321	1322	20	NaN	6627	3	6	1949	
1323	1324	30	50.0	5330	4	7	1940	
1325	1326	30	40.0	3636	4	4	1922	
1326	1327	30	70.0	4270	3	6	1931	
1337	1338	30	153.0	4118	4	4	1941	
1342	1343	60	NaN	9375	8	5	2002	
1346	1347	20	NaN	20781	7	7	1968	
1348	1349	20	NaN	16196	7	5	1998	
1349	1350	70	50.0	5250	8	5	1872	
1354	1355	60	NaN	10316	7	5	2000	
1356	1357	20	NaN	9477	5	5	1966	
1357	1358	20	NaN	12537	5	6	1971	
1358	1359	160	NaN	2117	6	5	2000	
1362	1363	50	NaN	12513	4	4	1920	
1365	1366	60	NaN	7500	7	5	2000	
1368	1369	120	NaN	4435	6	5	2003	
1373	1374	20	NaN	11400	10	5	2001	
1381	1382	20	NaN	12925	6	7	1970	
1383	1384	30	NaN	25339	5	7	1918	
1396	1397	20	NaN	57200	5	5	1948	

In [18]:
```python
sns.histplot(x=no_data['LotFrontage'],kde=True)
```

Out[18]: <matplotlib.axes._subplots.AxesSubplot at 0x7fabdd2fa290>
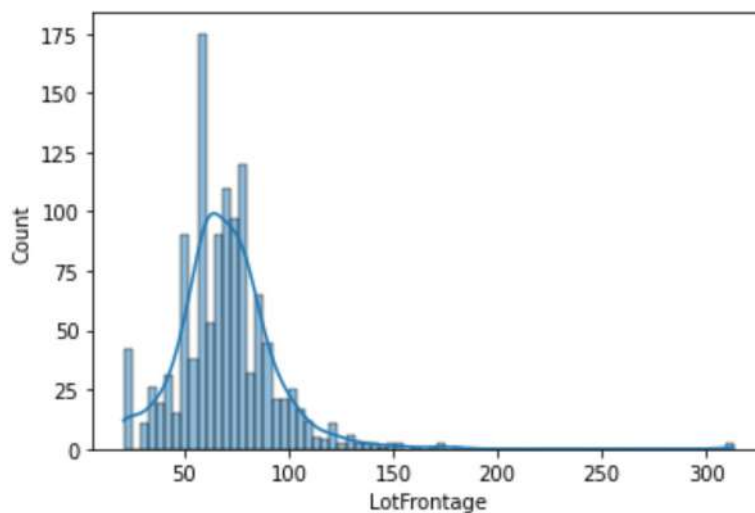
In [19]:
```python
sns.histplot(x=no_data['MasVnrArea'],kde=True)
```

Out[19]: <matplotlib.axes._subplots.AxesSubplot at 0x7fabdca6bad0>
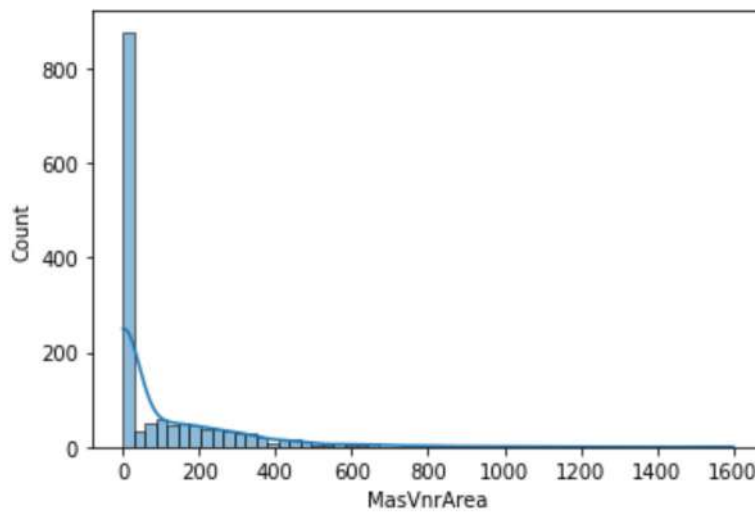
In [20]:
```python
fig,axes=plt.subplots(1,3,figsize=(10,5))
sns.histplot(ax = axes[0],x=no_data['YearBuilt'],kde=True,)
sns.histplot(ax = axes[1],x=no_data['GarageYrBlt'],kde=True,)
```

Out[20]: <matplotlib.axes._subplots.AxesSubplot at 0x7fabdab36f50>
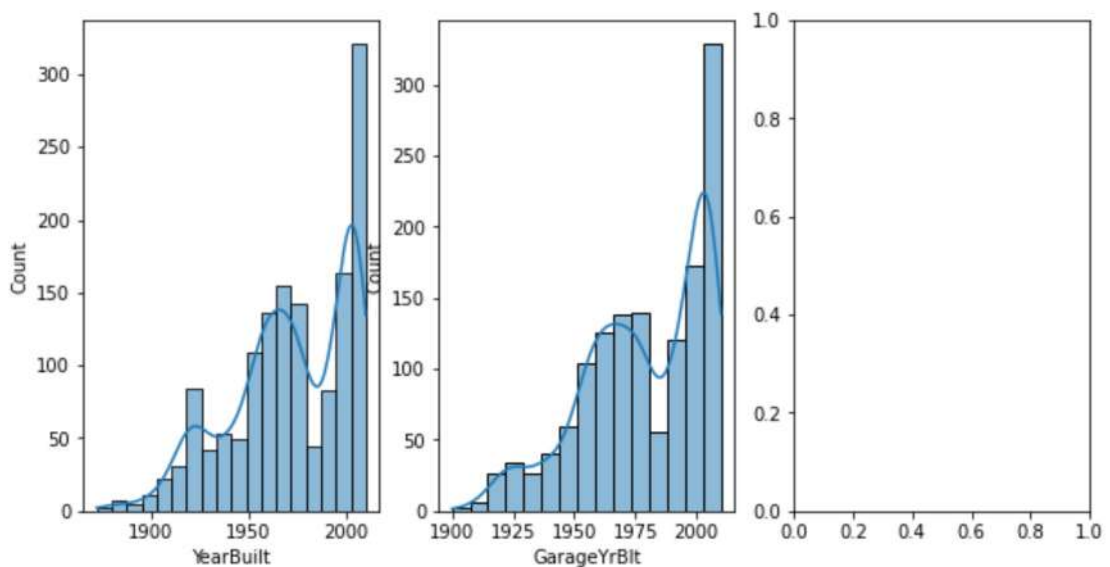
In [13]:
```python
no_data = no_data.drop(['Id','MasVnrArea','YearBuilt','GarageYrBlt'],axis
=1)#drop the null value contain column
```

In [14]:
```python
no_data = no_data.drop('LotFrontage',axis=1)
```

In [15]: `no_data.describe().T`

Out[15]:

	count	mean	std	min	25%	50%	7
MSSubClass	1460.0	56.897260	42.300571	20.0	20.00	50.0	70
LotArea	1460.0	10516.828082	9981.264932	1300.0	7553.50	9478.5	11601
OverallQual	1460.0	6.099315	1.382997	1.0	5.00	6.0	7
OverallCond	1460.0	5.575342	1.112799	1.0	5.00	5.0	6
YearRemodAdd	1460.0	1984.865753	20.645407	1950.0	1967.00	1994.0	2004
BsmtFinSF1	1460.0	443.639726	456.098091	0.0	0.00	383.5	712
BsmtFinSF2	1460.0	46.549315	161.319273	0.0	0.00	0.0	0
BsmtUnfSF	1460.0	567.240411	441.866955	0.0	223.00	477.5	808
TotalBsmtSF	1460.0	1057.429452	438.705324	0.0	795.75	991.5	1298
1stFlrSF	1460.0	1162.626712	386.587738	334.0	882.00	1087.0	1391
2ndFlrSF	1460.0	346.992466	436.528436	0.0	0.00	0.0	728
LowQualFinSF	1460.0	5.844521	48.623081	0.0	0.00	0.0	0
GrLivArea	1460.0	1515.463699	525.480383	334.0	1129.50	1464.0	1776
BsmtFullBath	1460.0	0.425342	0.518911	0.0	0.00	0.0	1
BsmtHalfBath	1460.0	0.057534	0.238753	0.0	0.00	0.0	0
FullBath	1460.0	1.565068	0.550916	0.0	1.00	2.0	2
HalfBath	1460.0	0.382877	0.502885	0.0	0.00	0.0	1
BedroomAbvGr	1460.0	2.866438	0.815778	0.0	2.00	3.0	3
KitchebvGr	1460.0	1.046575	0.220338	0.0	1.00	1.0	1
TotRmsAbvGrd	1460.0	6.517808	1.625393	2.0	5.00	6.0	7
Fireplaces	1460.0	0.613014	0.644666	0.0	0.00	1.0	1
GarageCars	1460.0	1.767123	0.747315	0.0	1.00	2.0	2
GarageArea	1460.0	472.980137	213.804841	0.0	334.50	480.0	576
WoodDeckSF	1460.0	94.244521	125.338794	0.0	0.00	0.0	168
OpenPorchSF	1460.0	46.660274	66.256028	0.0	0.00	25.0	68
EnclosedPorch	1460.0	21.954110	61.119149	0.0	0.00	0.0	0
3SsnPorch	1460.0	3.409589	29.317331	0.0	0.00	0.0	0
ScreenPorch	1460.0	15.060959	55.757415	0.0	0.00	0.0	0
PoolArea	1460.0	2.758904	40.177307	0.0	0.00	0.0	0
MiscVal	1460.0	43.489041	496.123024	0.0	0.00	0.0	0
MoSold	1460.0	6.321918	2.703626	1.0	5.00	6.0	8
YrSold	1460.0	2007.815753	1.328095	2006.0	2007.00	2008.0	2009
SalePrice	1460.0	180921.195890	79442.502883	34900.0	129975.00	163000.0	214000

In [16]: `no_data.skew().to_frame()` *#Skewness*

Out[16]:

	0
MSSubClass	1.407657
LotArea	12.207688
OverallQual	0.216944
OverallCond	0.693067
YearRemodAdd	-0.503562
BsmtFinSF1	1.685503
BsmtFinSF2	4.255261
BsmtUnfSF	0.920268
TotalBsmtSF	1.524255
1stFlrSF	1.376757
2ndFlrSF	0.813030
LowQualFinSF	9.011341
GrLivArea	1.366560
BsmtFullBath	0.596067
BsmtHalfBath	4.103403
FullBath	0.036562
HalfBath	0.675897
BedroomAbvGr	0.211790
KitchebvGr	4.488397
TotRmsAbvGrd	0.676341
Fireplaces	0.649565
GarageCars	-0.342549
GarageArea	0.179981
WoodDeckSF	1.541376
OpenPorchSF	2.364342
EnclosedPorch	3.089872
3SsnPorch	10.304342
ScreenPorch	4.122214
PoolArea	14.828374
MiscVal	24.476794
MoSold	0.212053
YrSold	0.096269
SalePrice	1.882876

Distribution

In [17]:
```python
from scipy.stats import norm
```

In [26]:
```python
for column in no_data.columns:
    plt.figure(figsize=(10,5))
    sns.histplot(data= no_data,x=column,kde=True)
    plt.tight_layout()
```
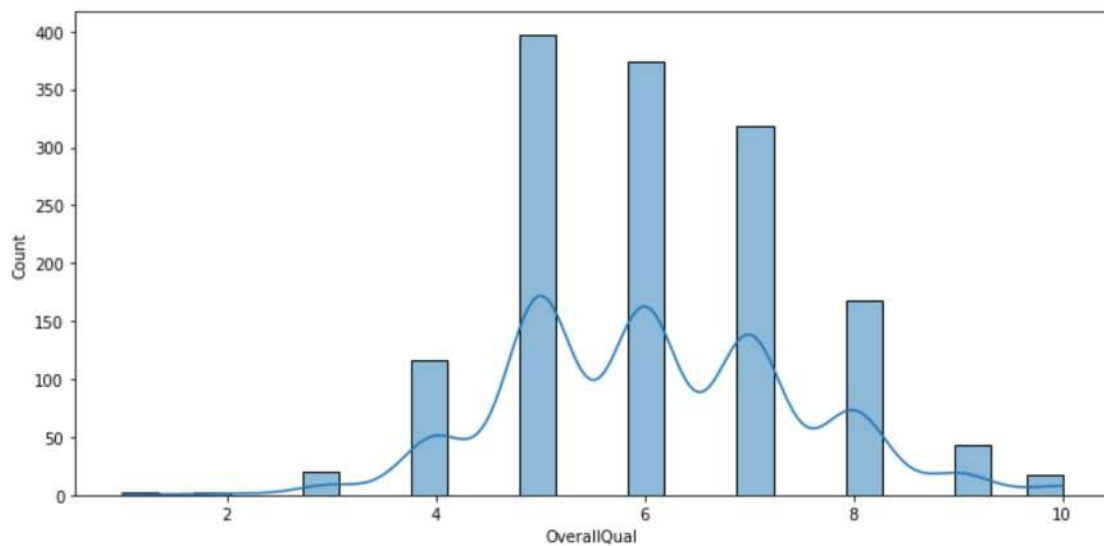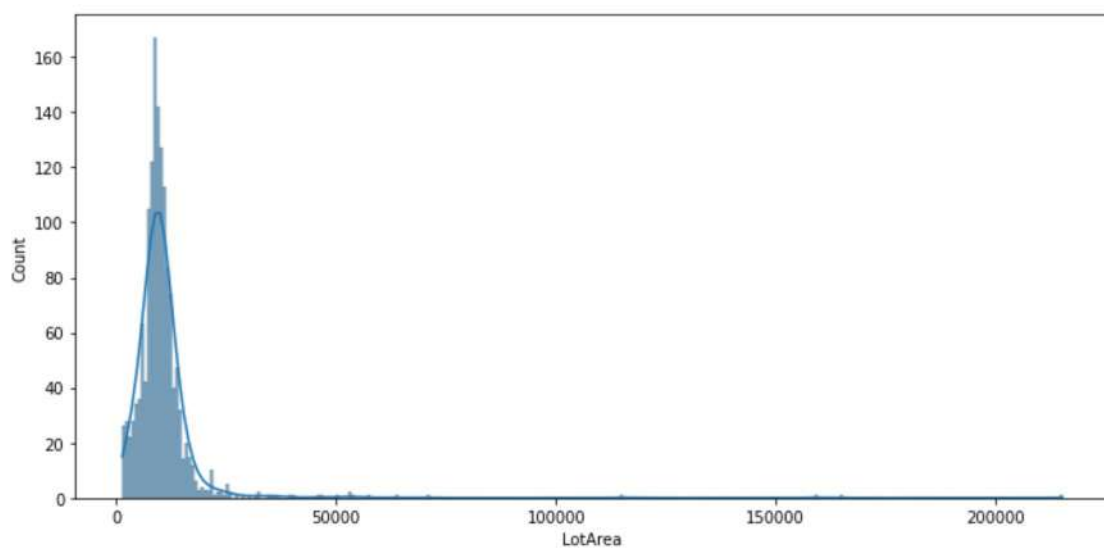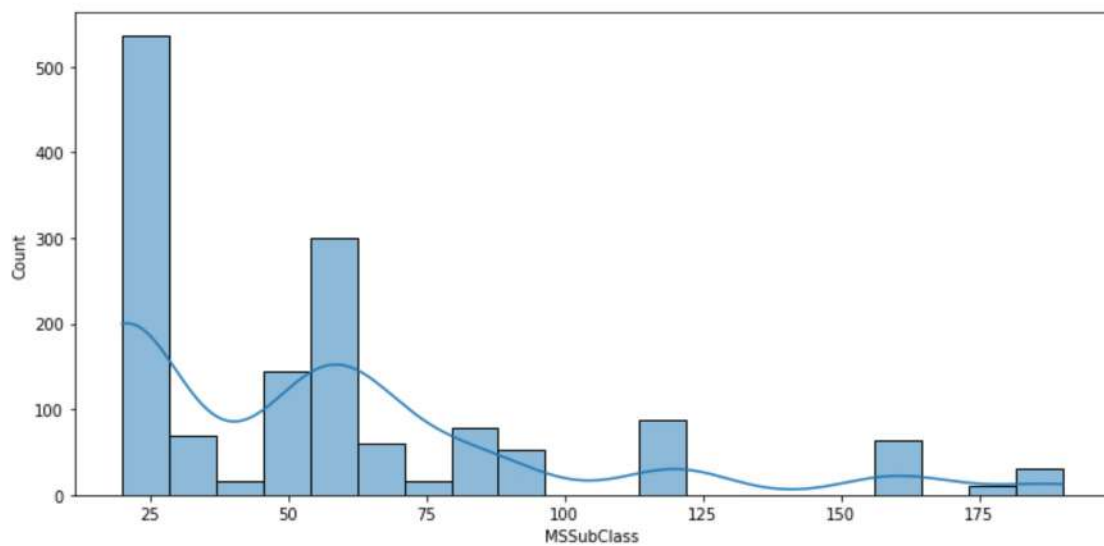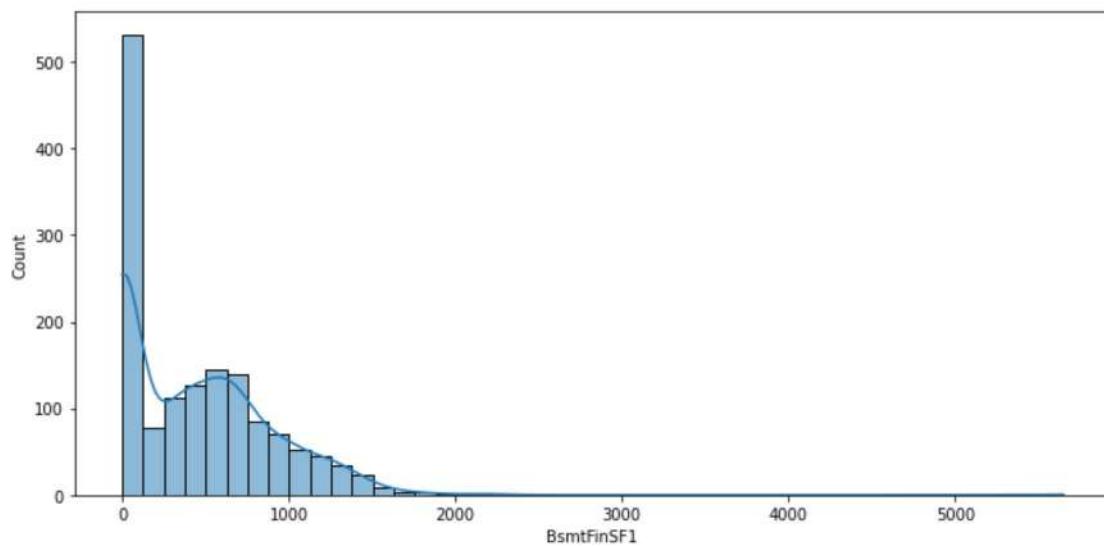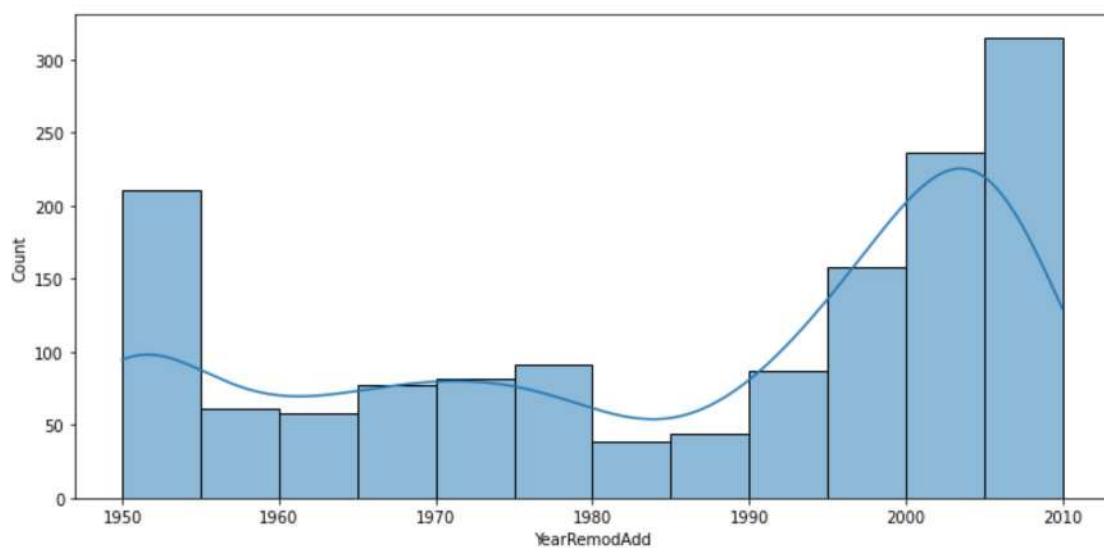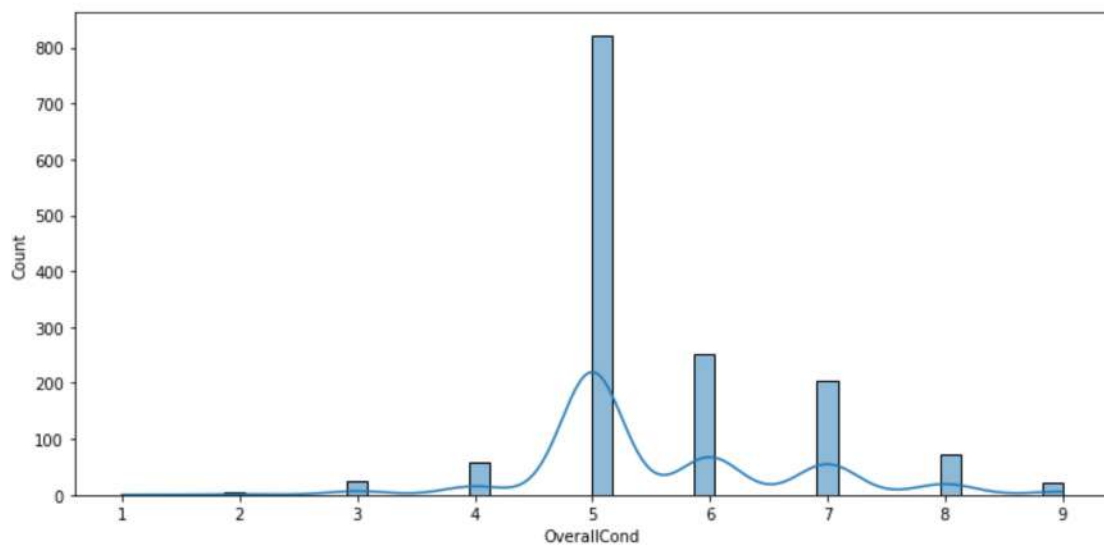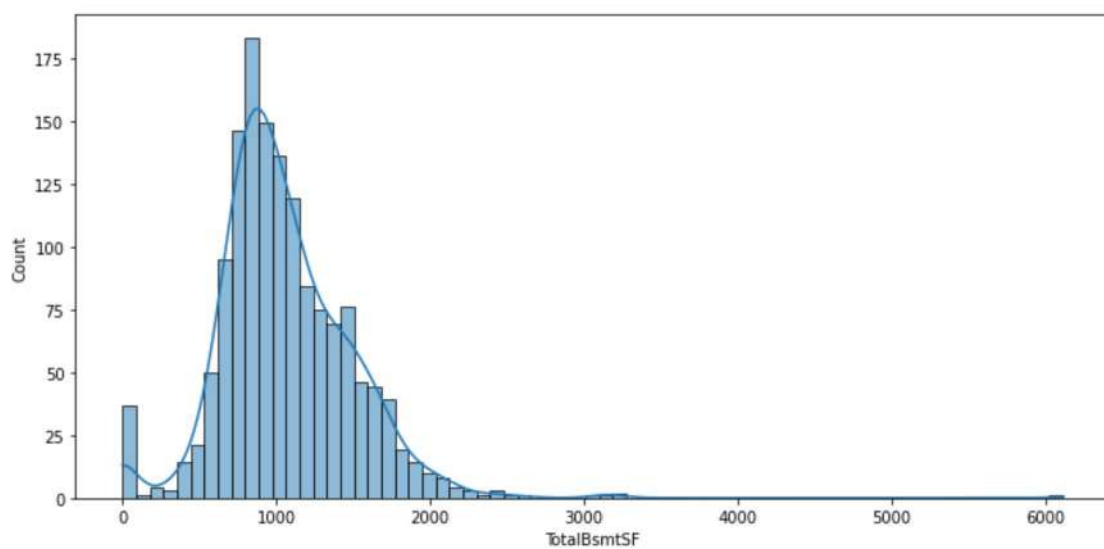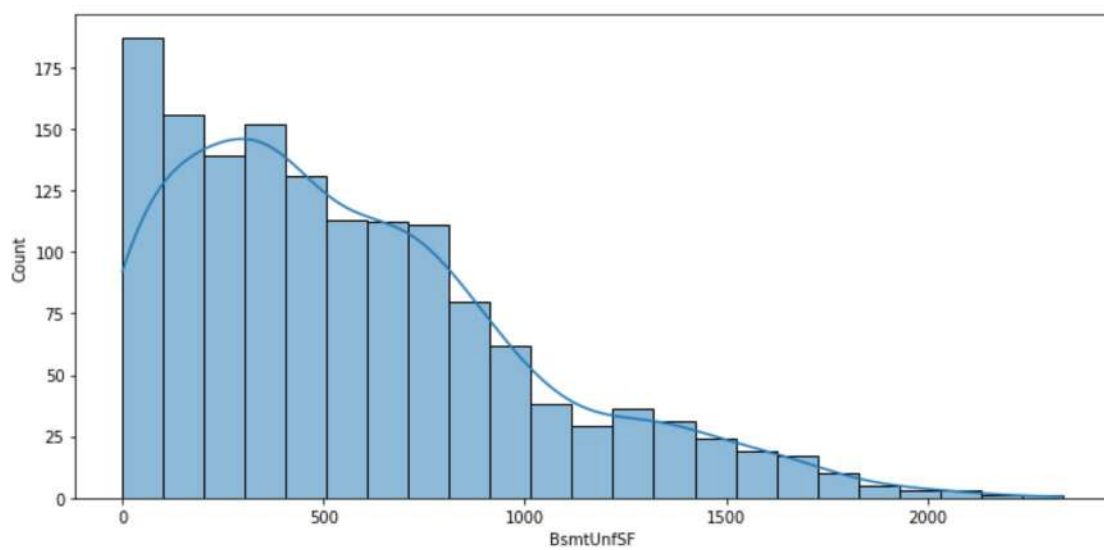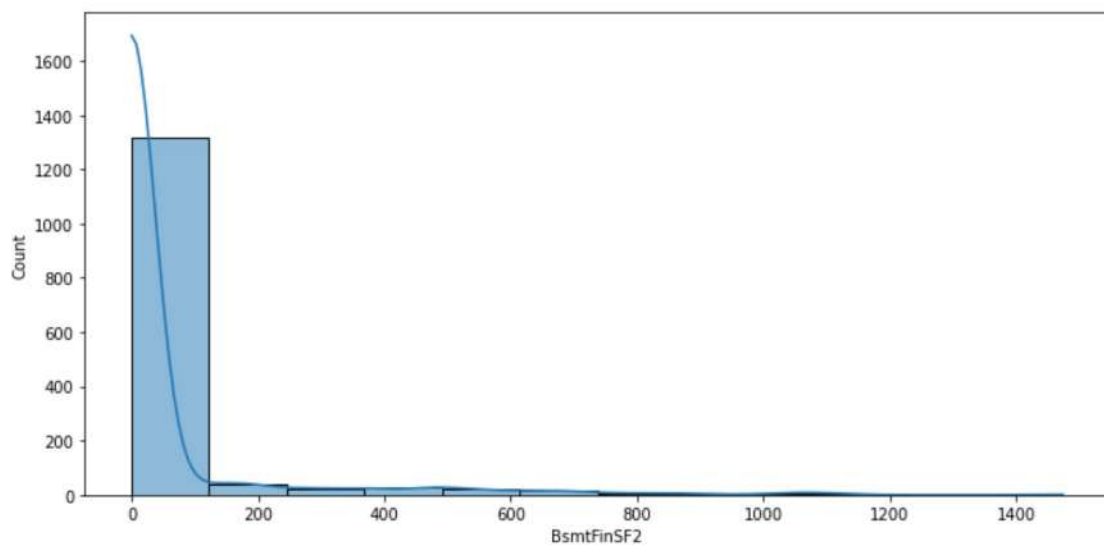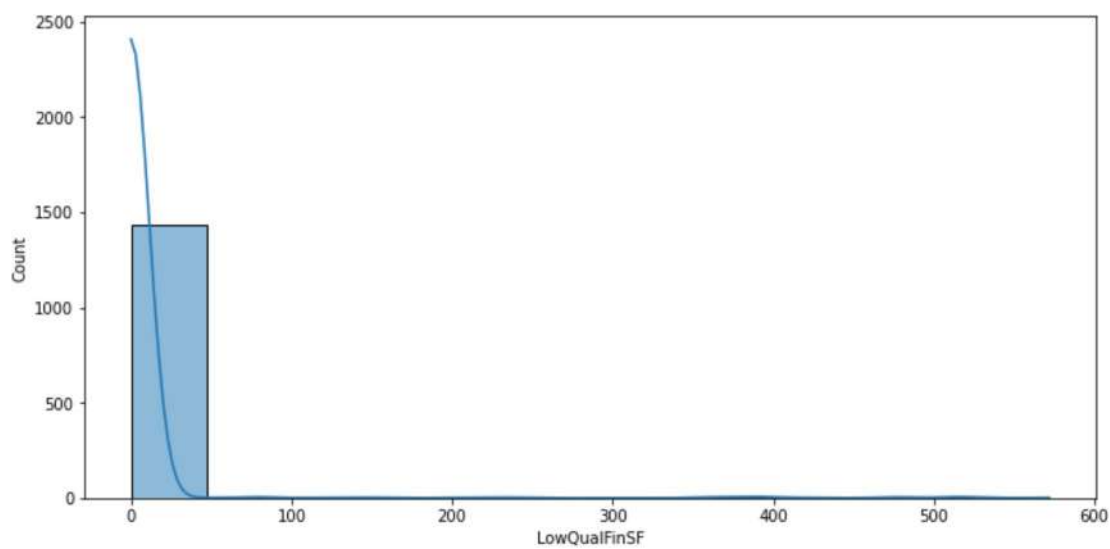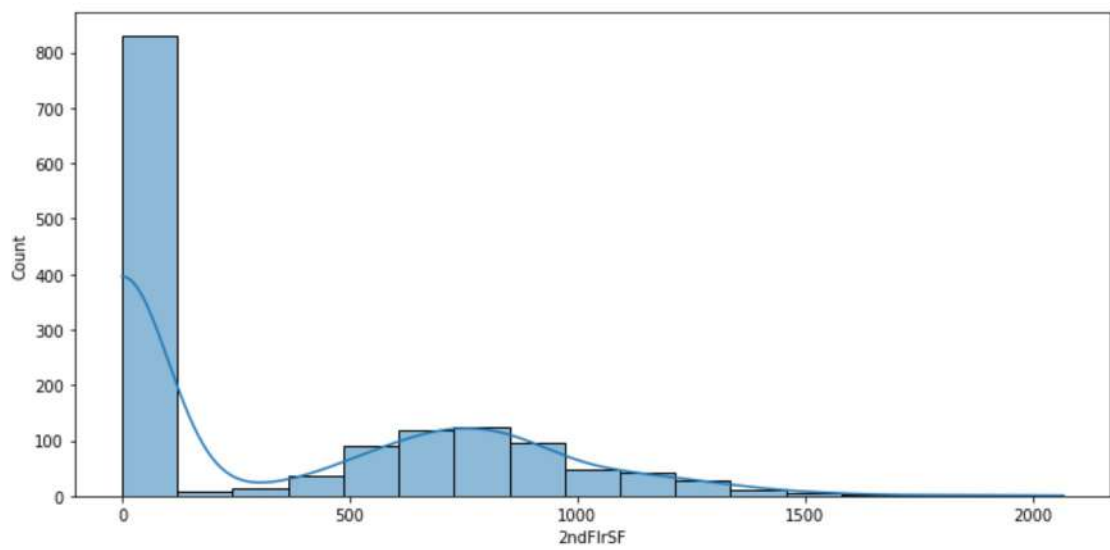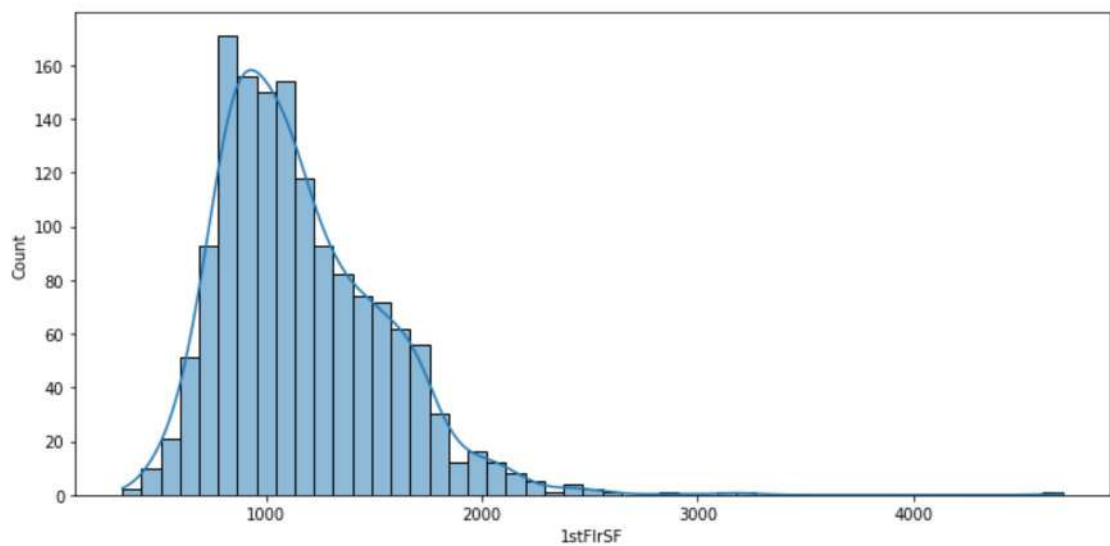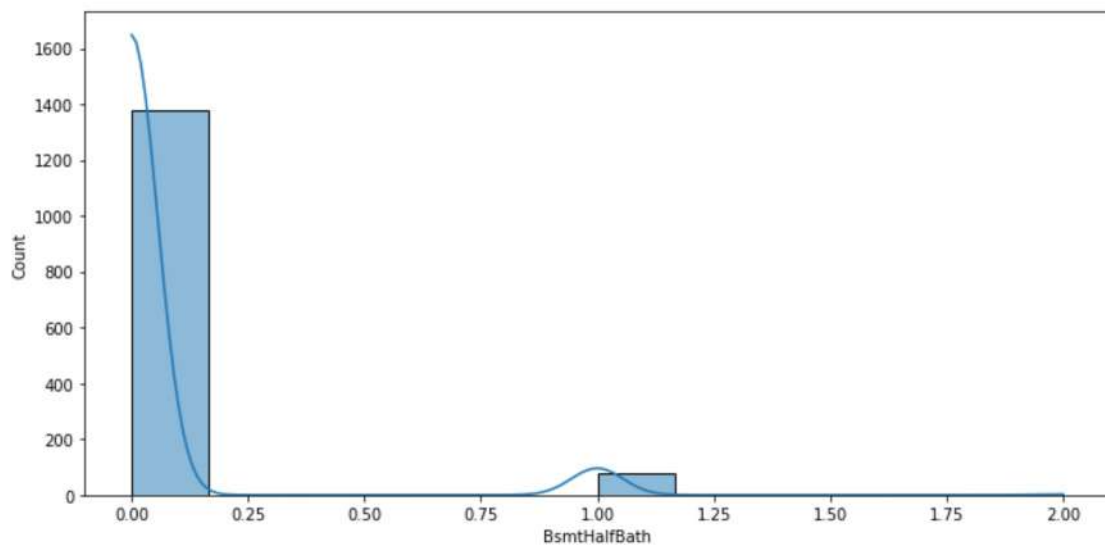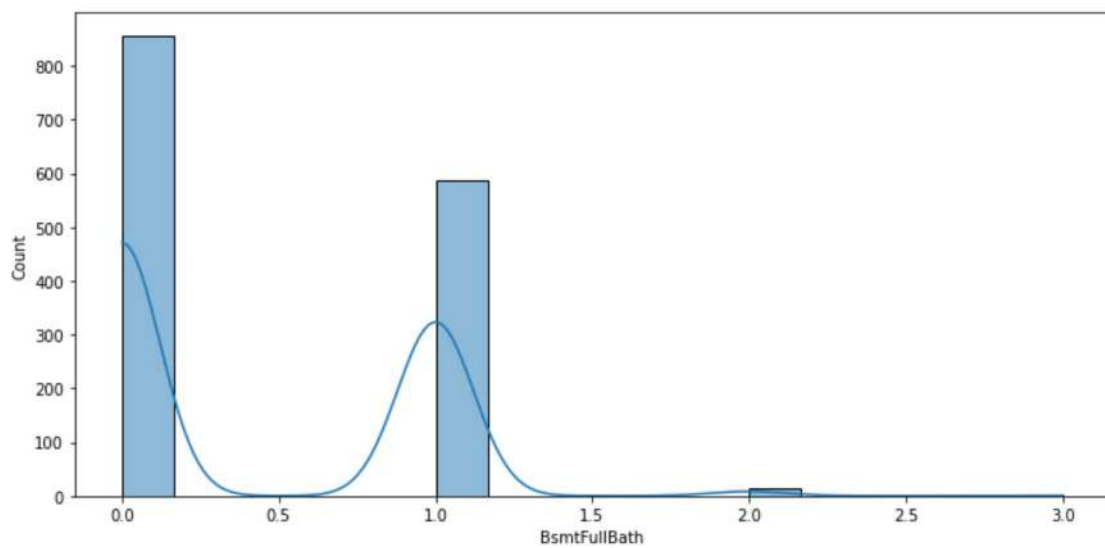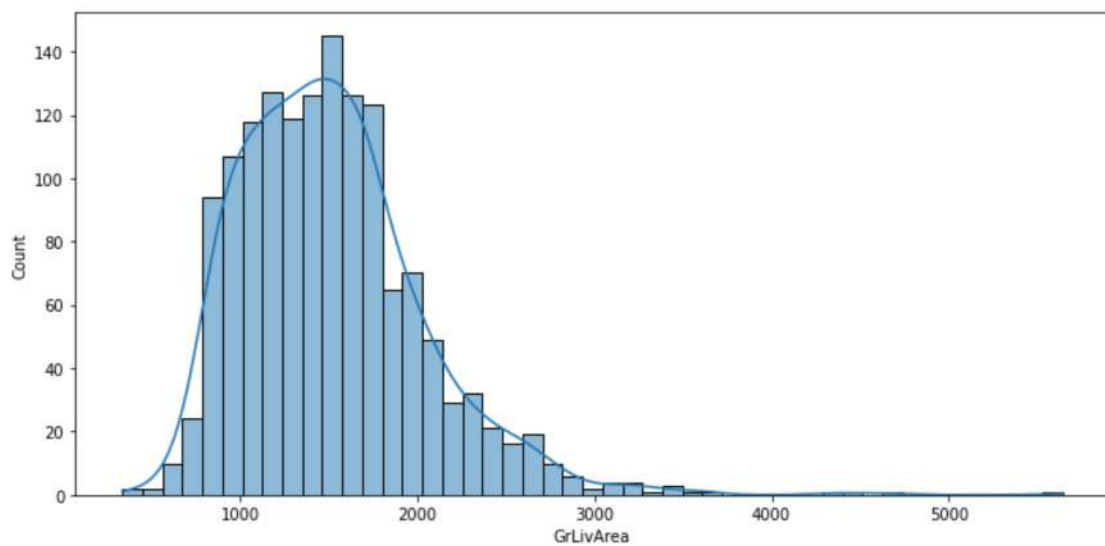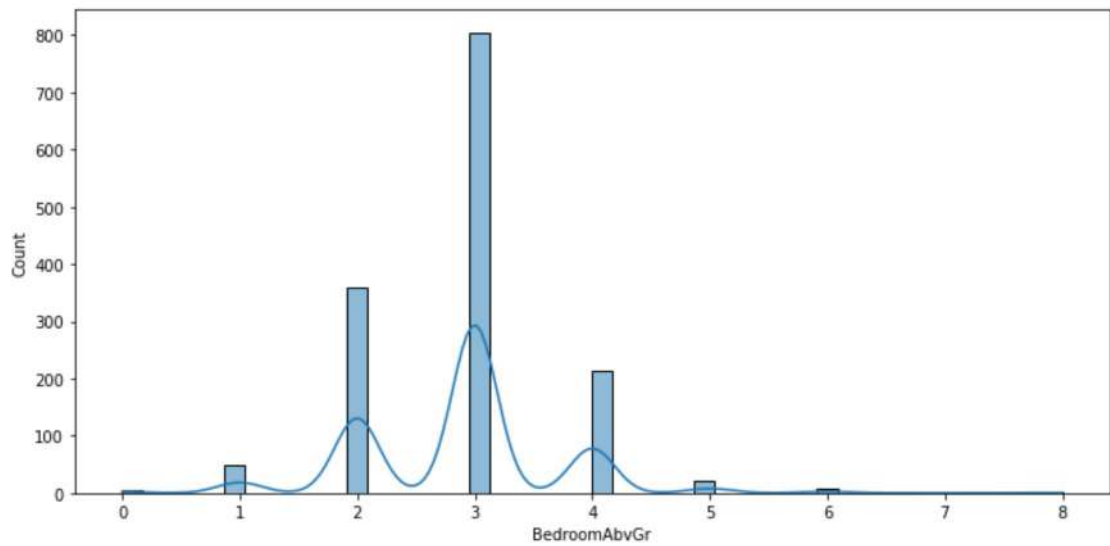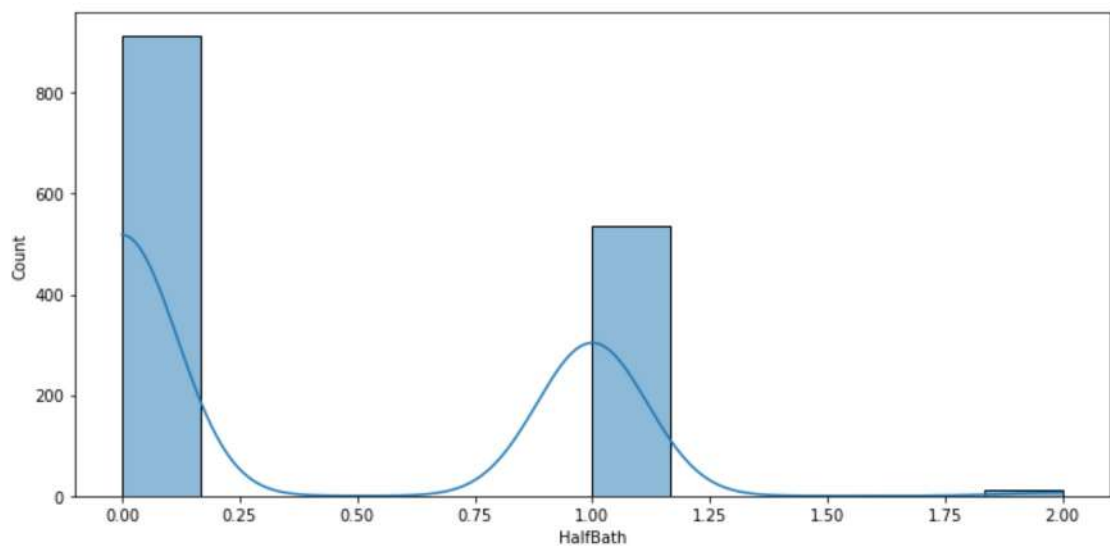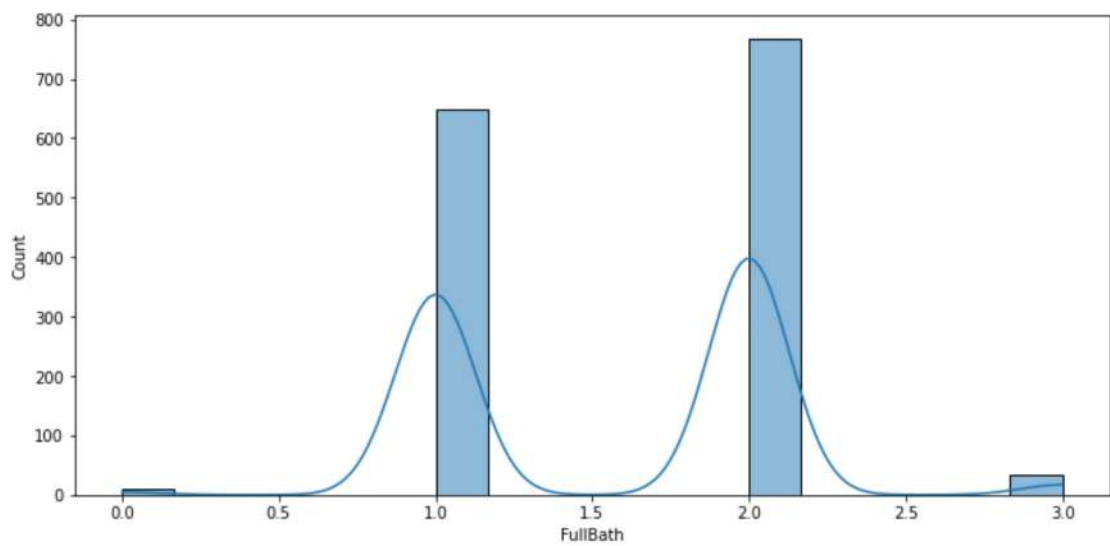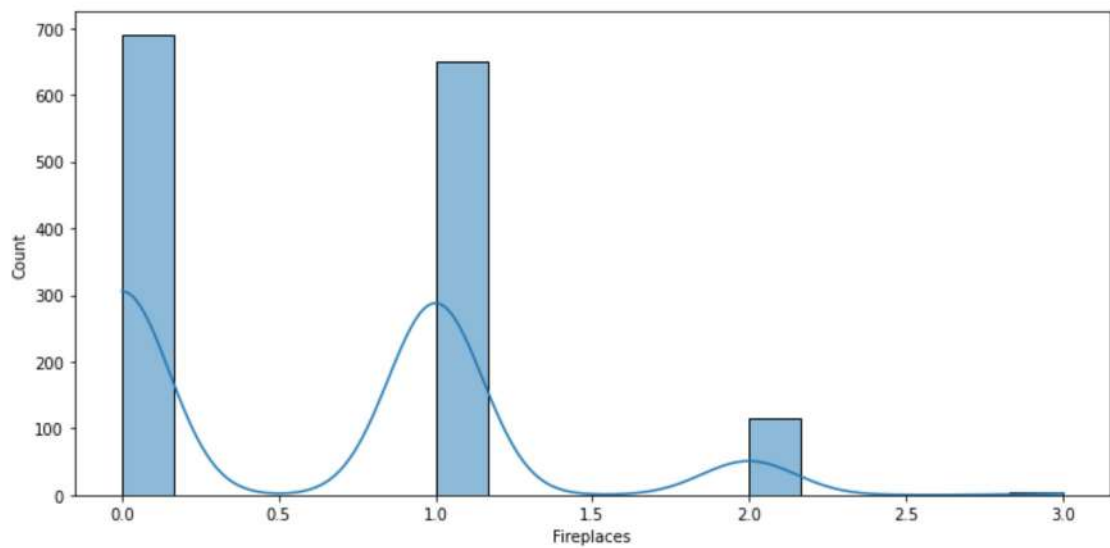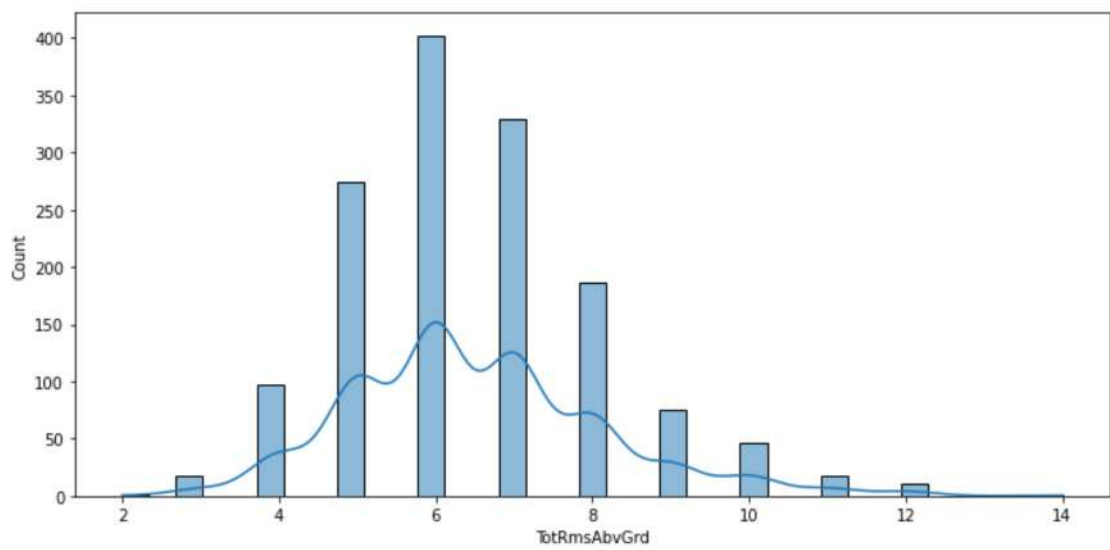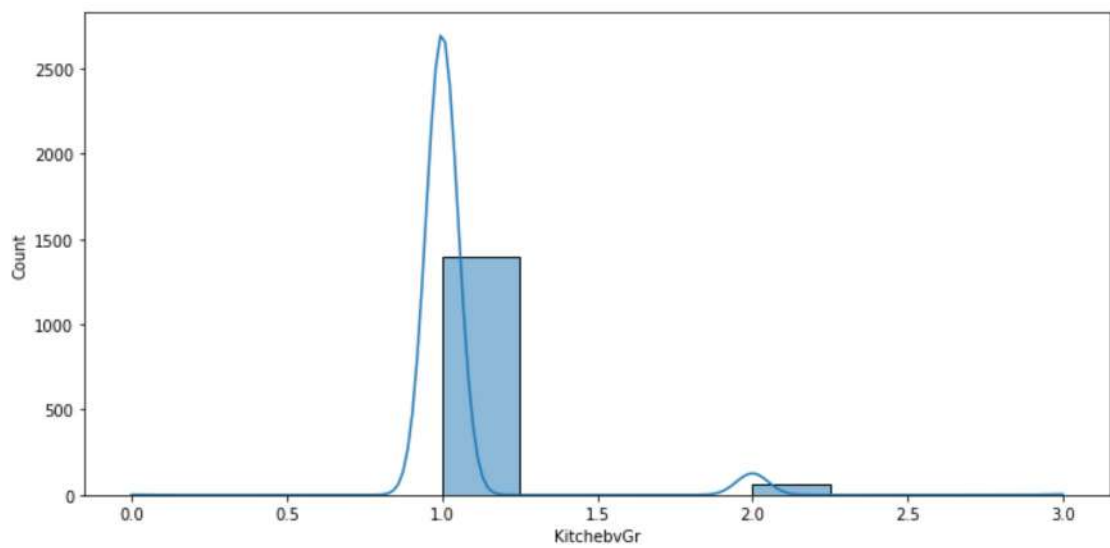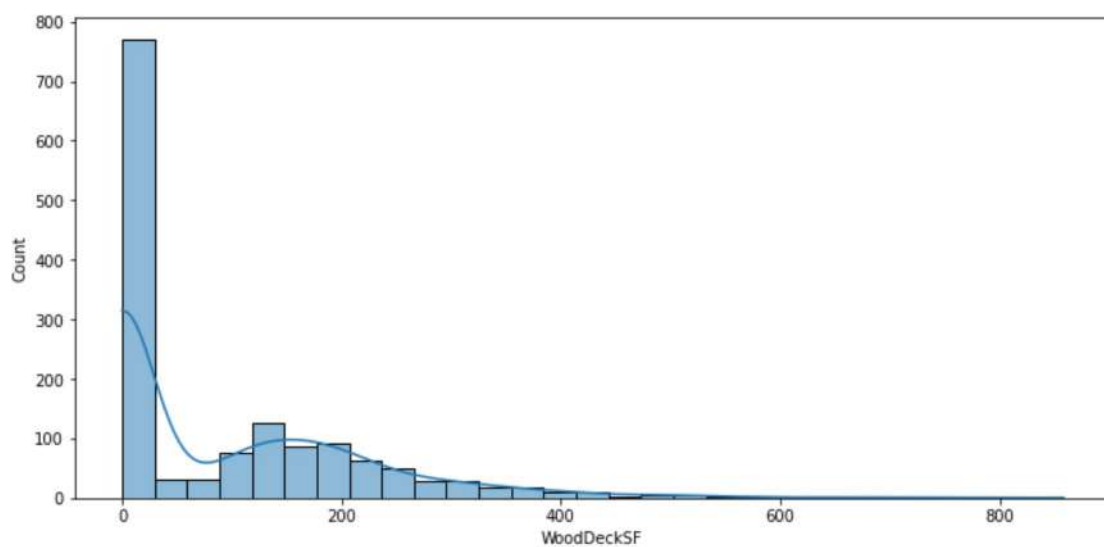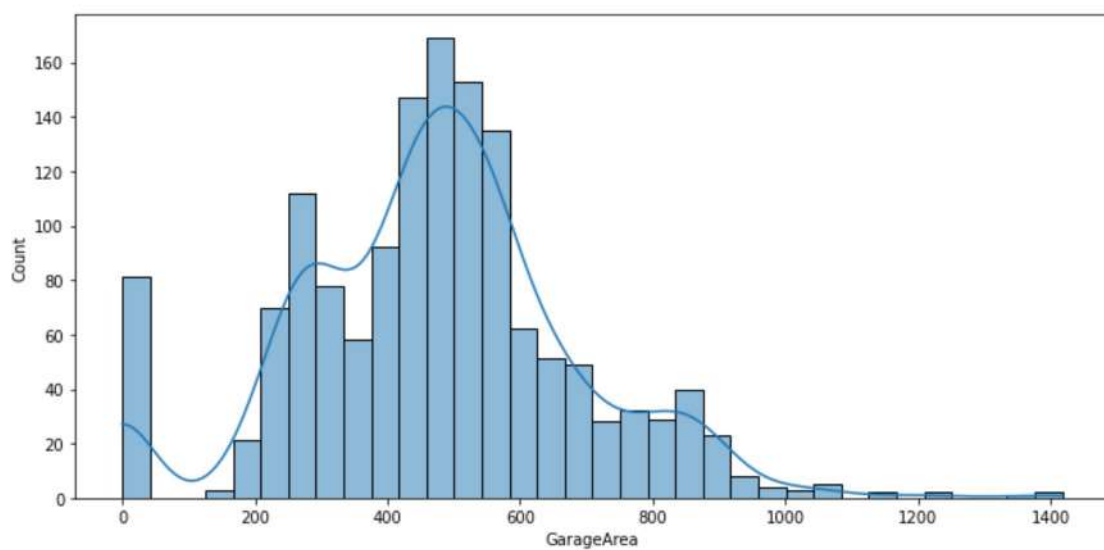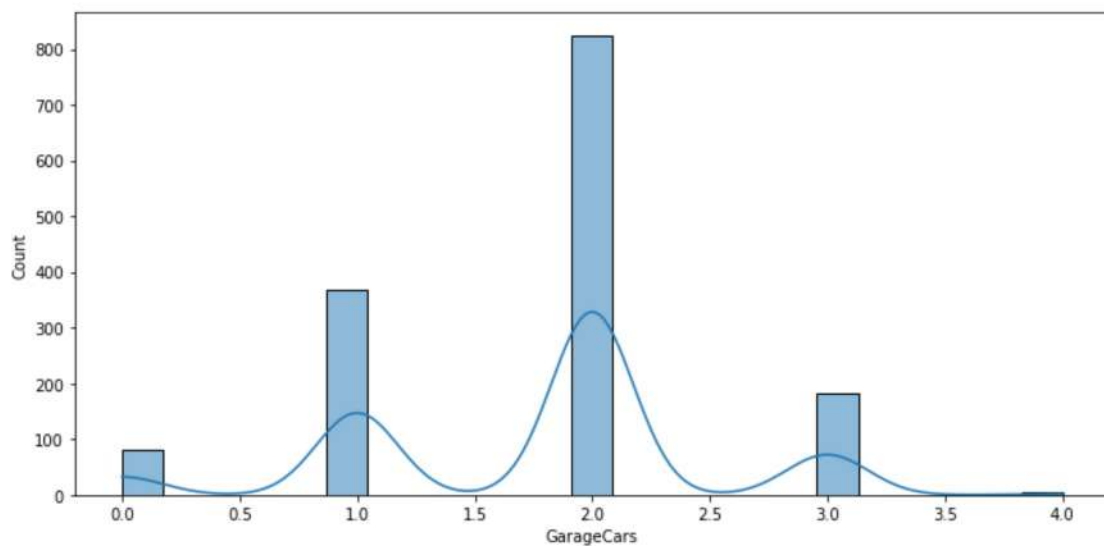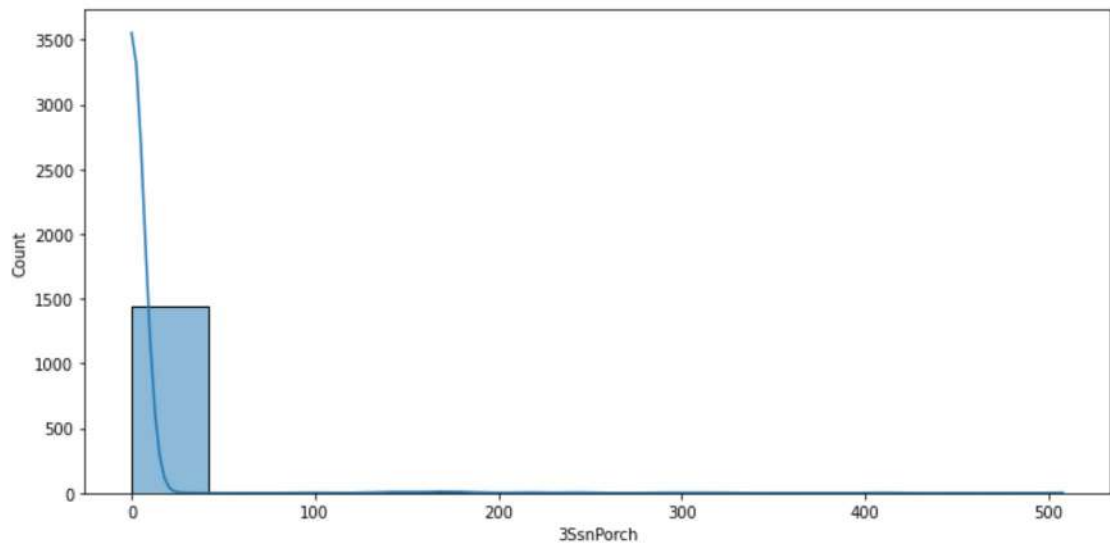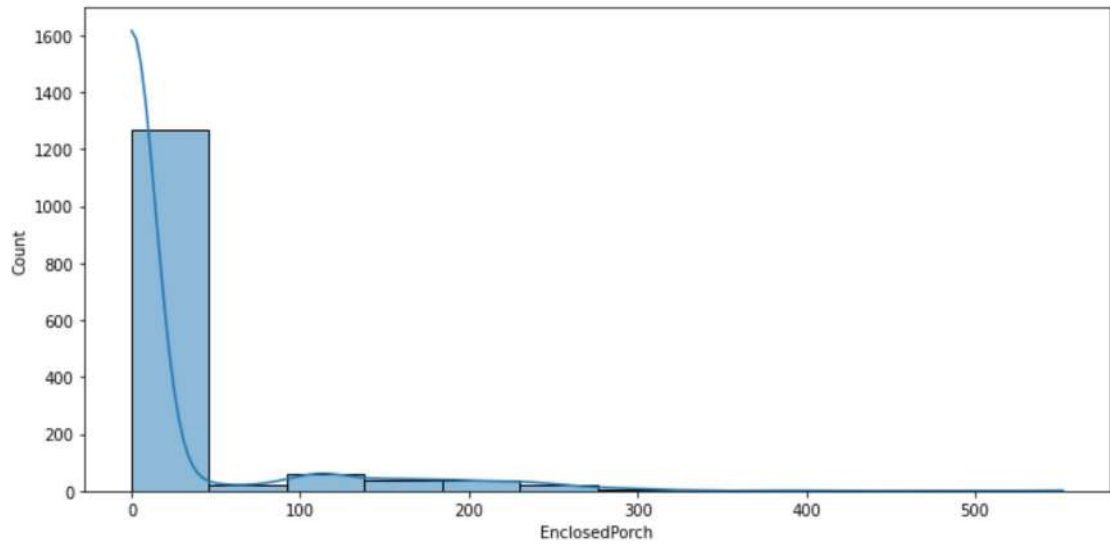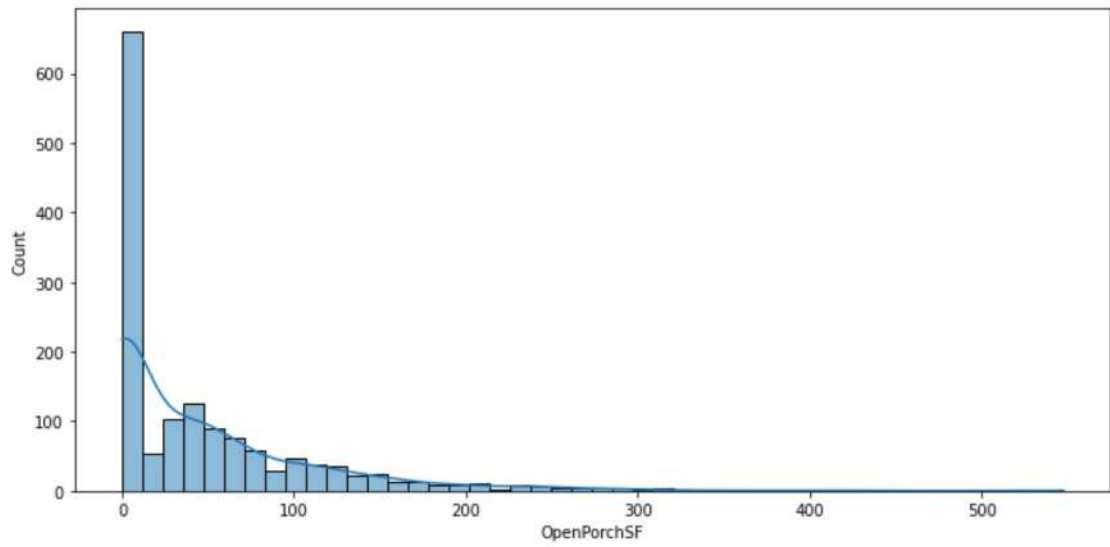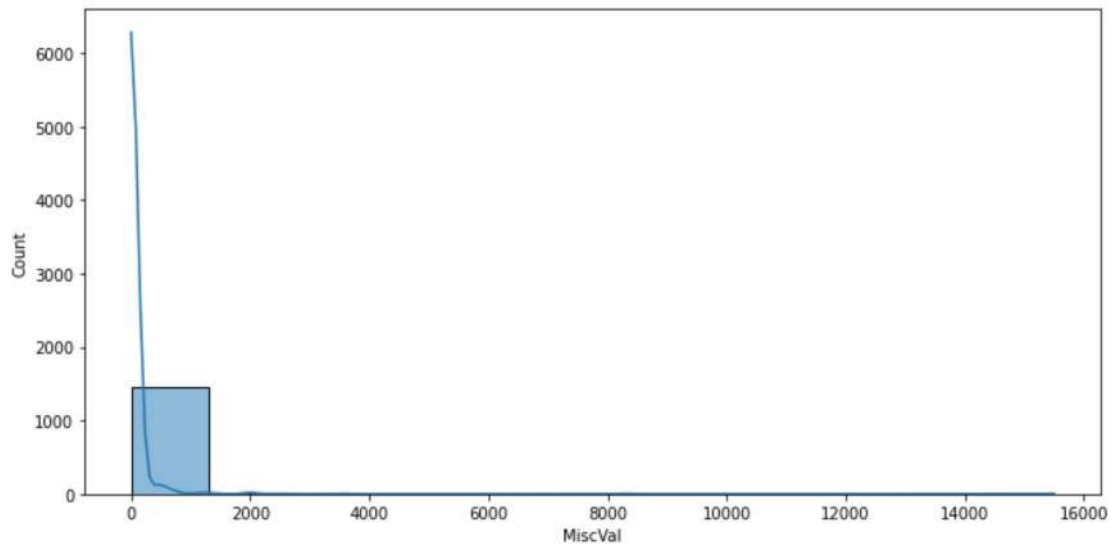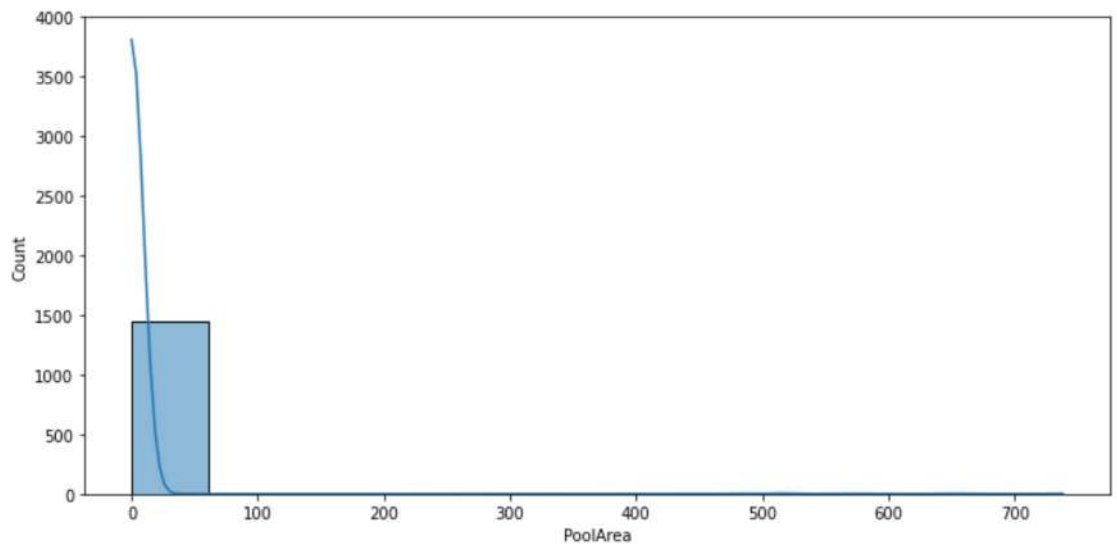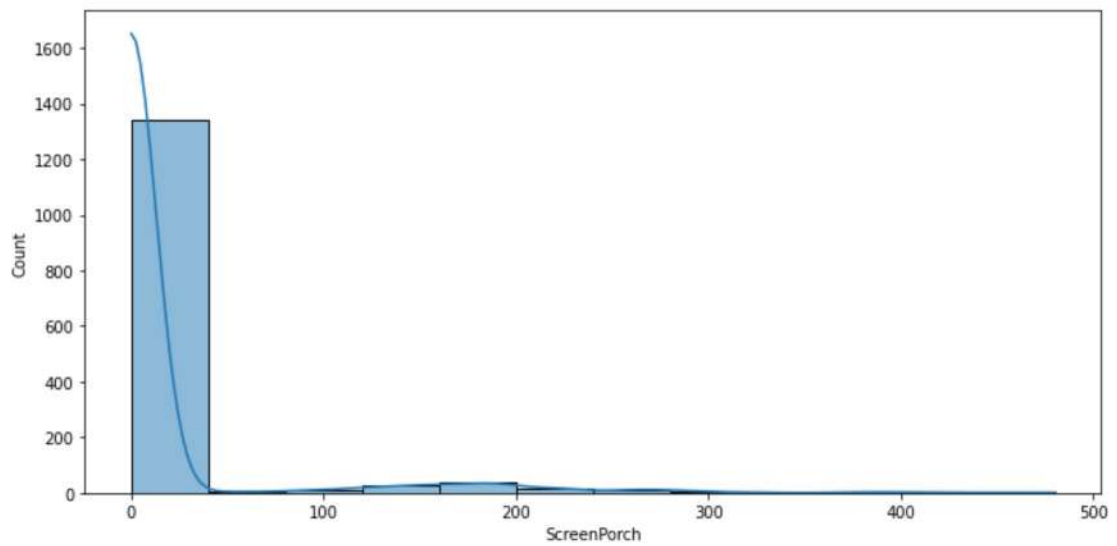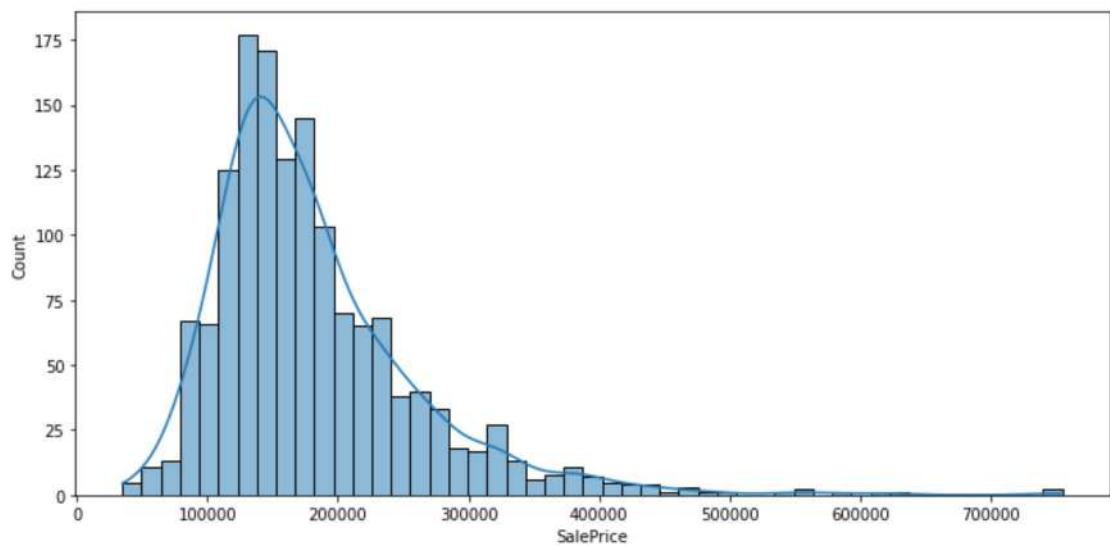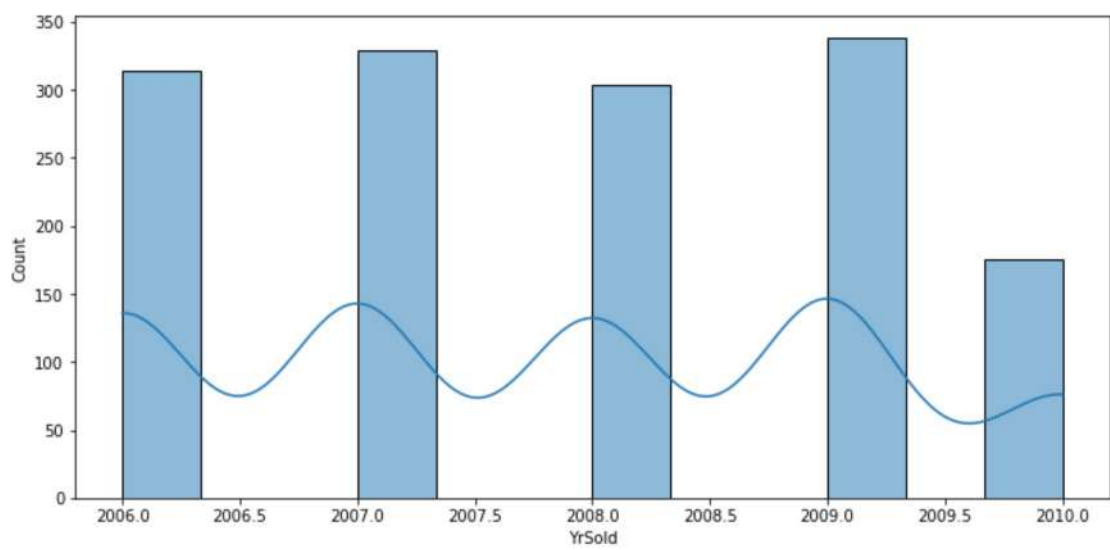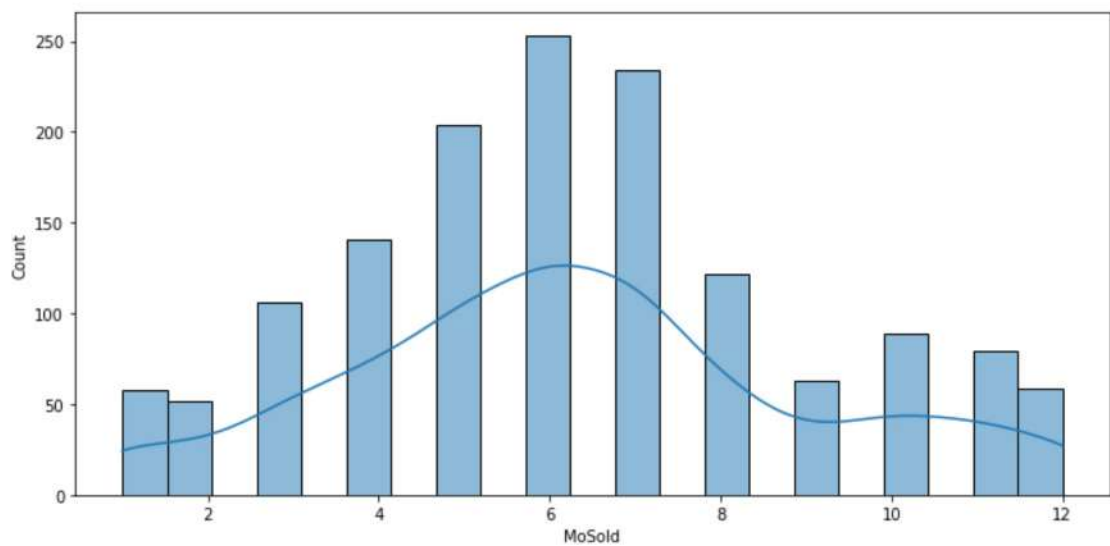
In [27]:
```python
for column in no_data.columns:
    plt.figure(figsize=(10,5))
    sns.distplot(no_data[column], fit=norm)
    plt.tight_layout()
```
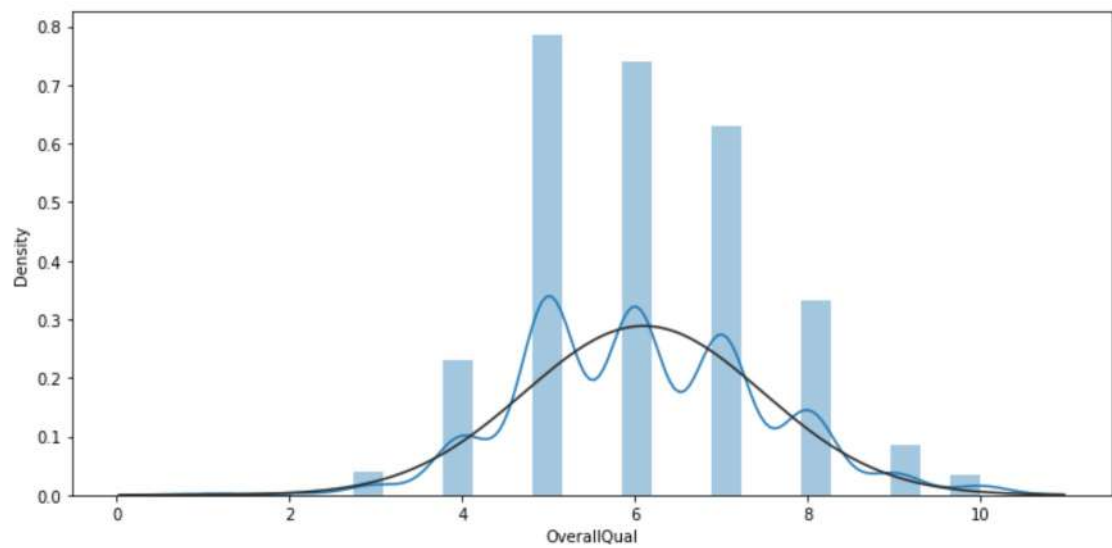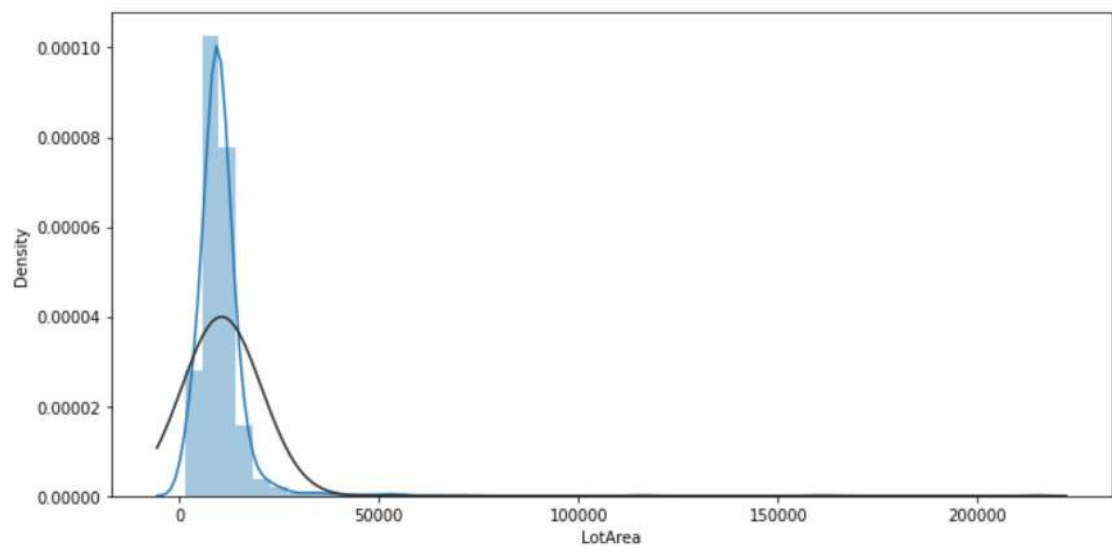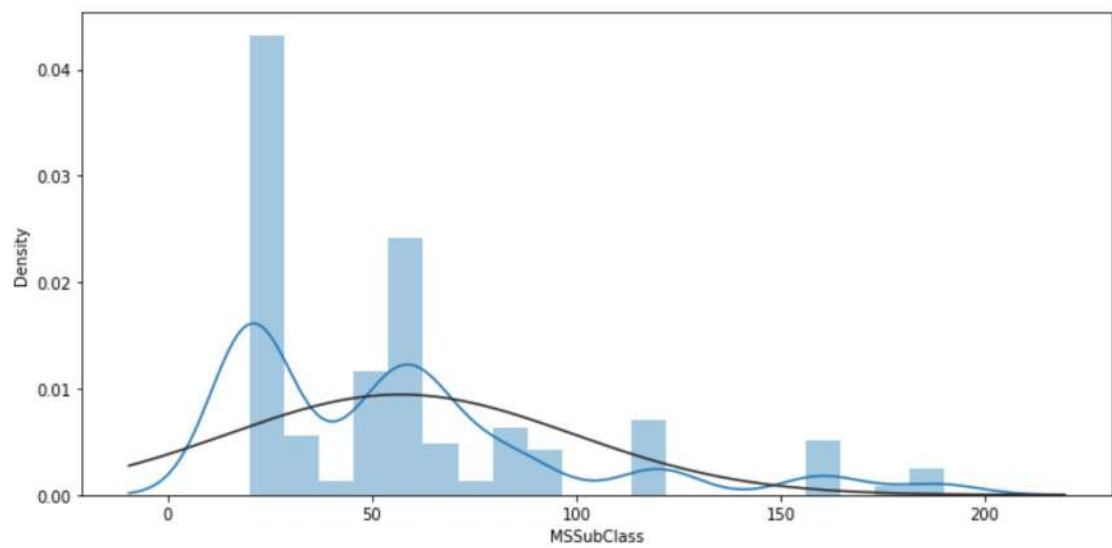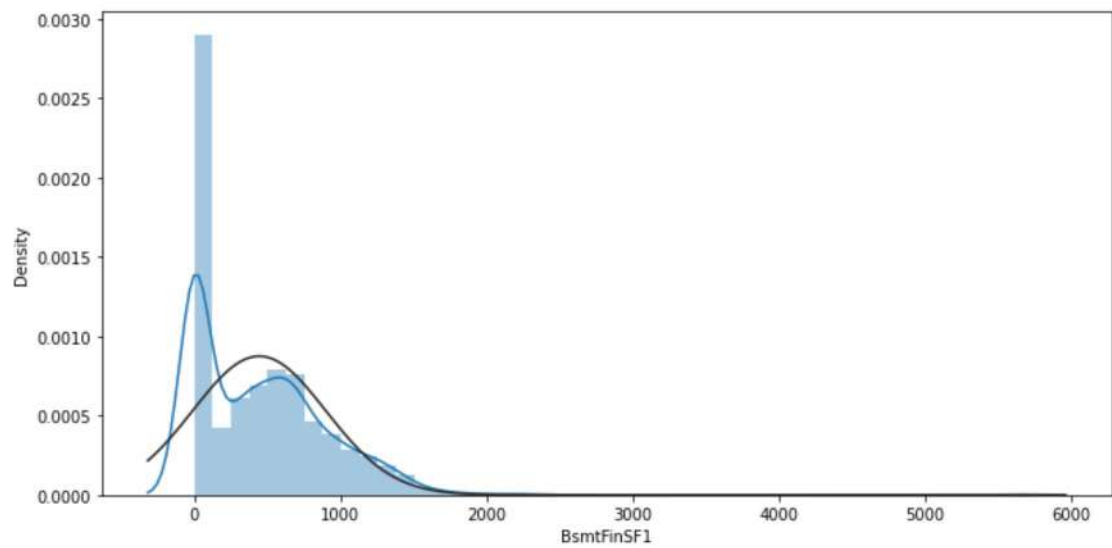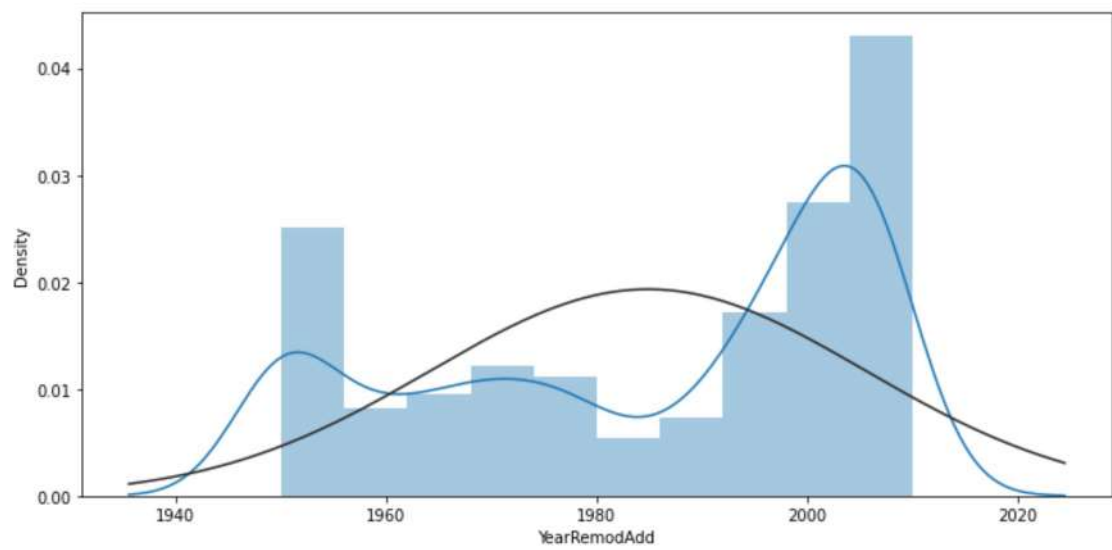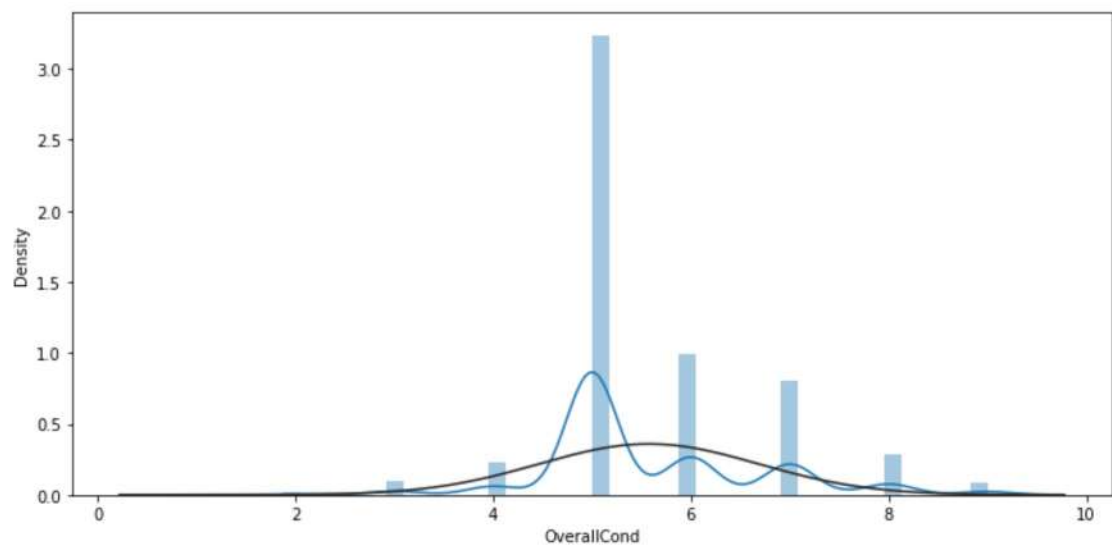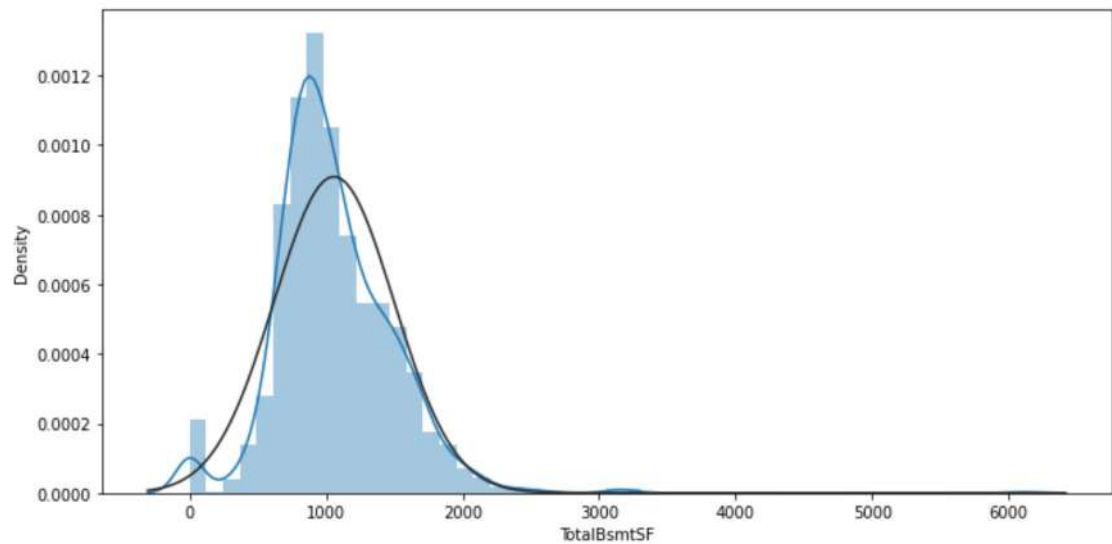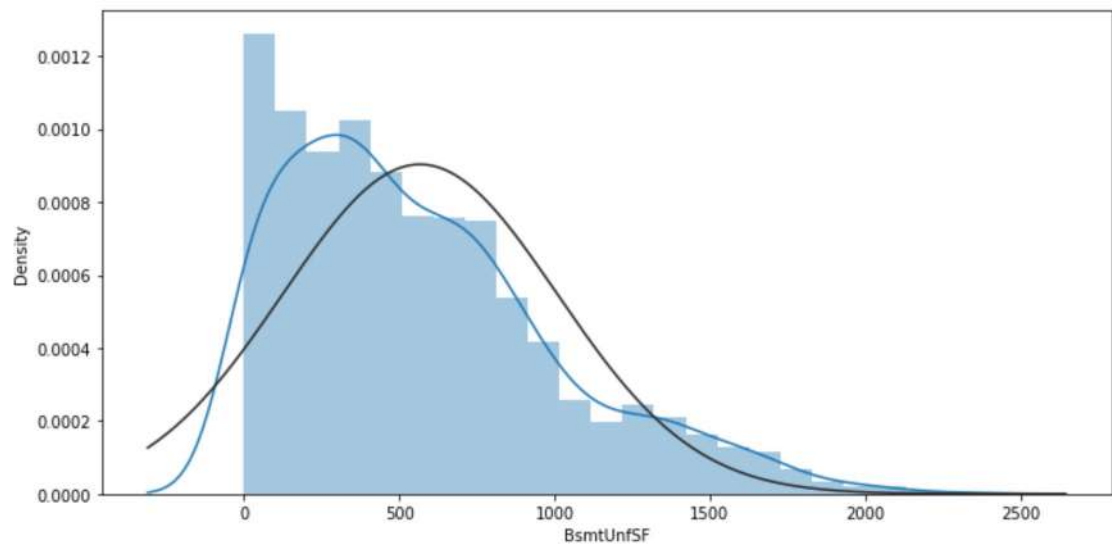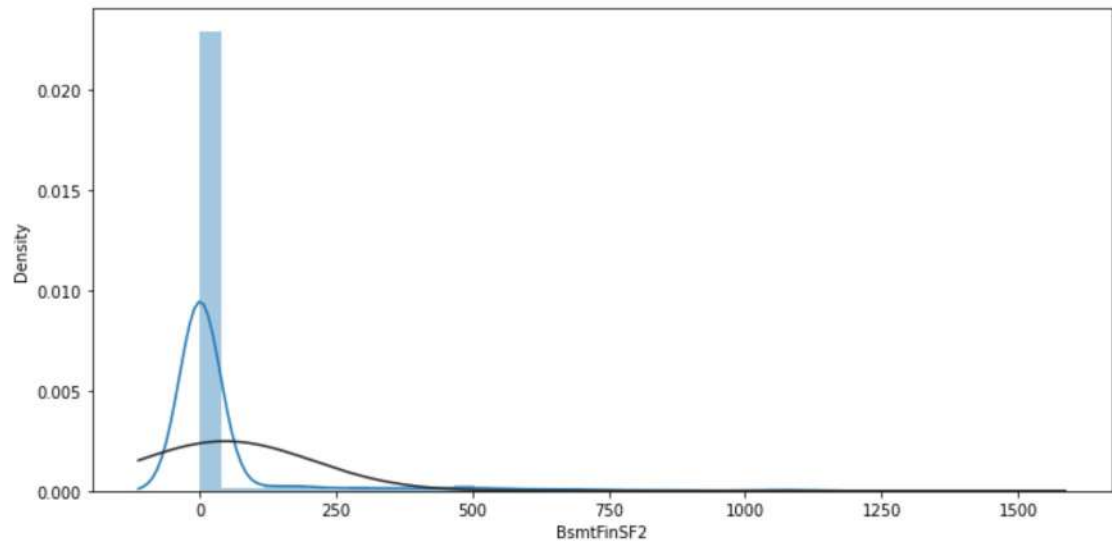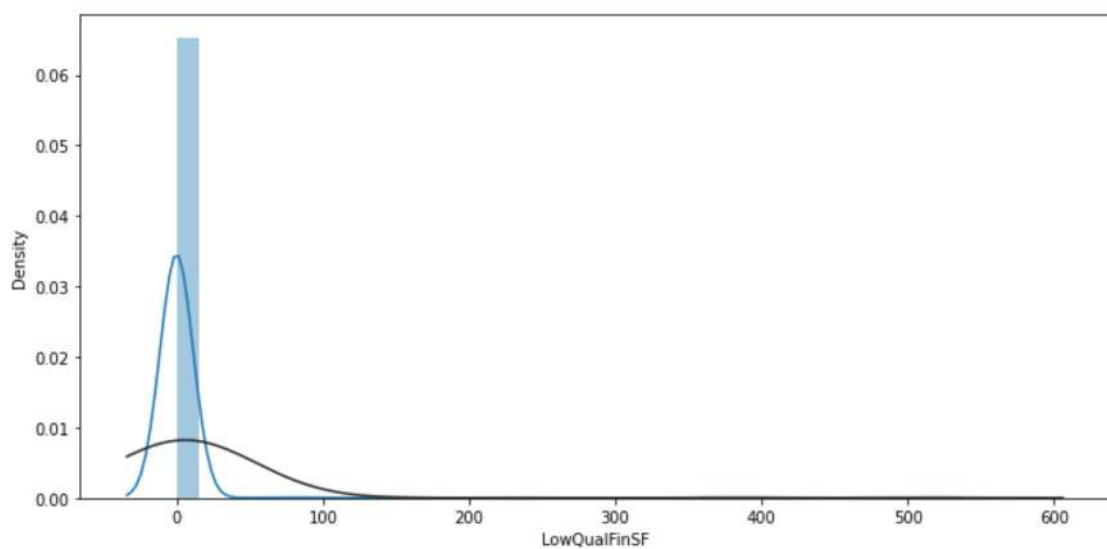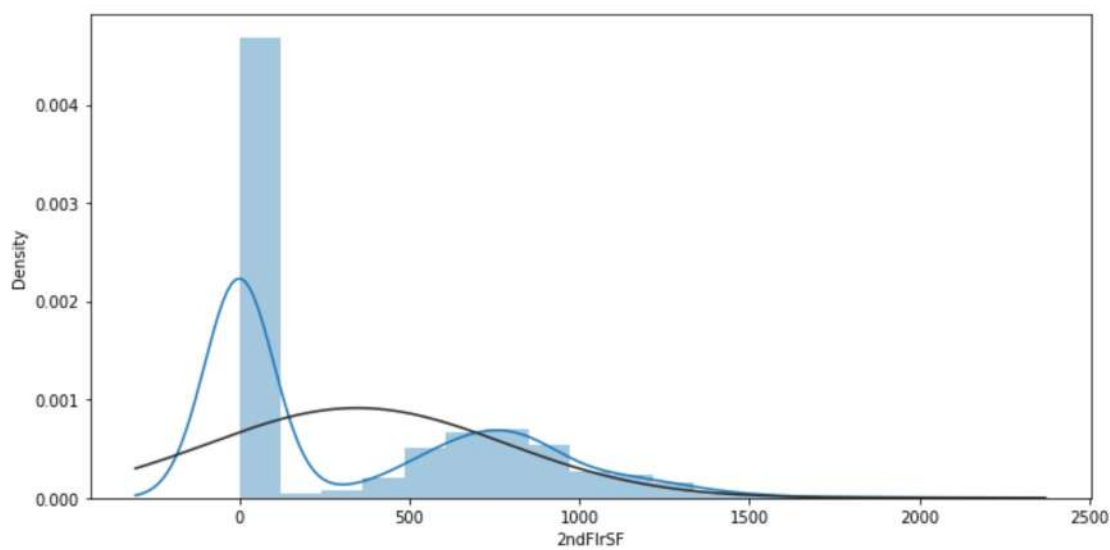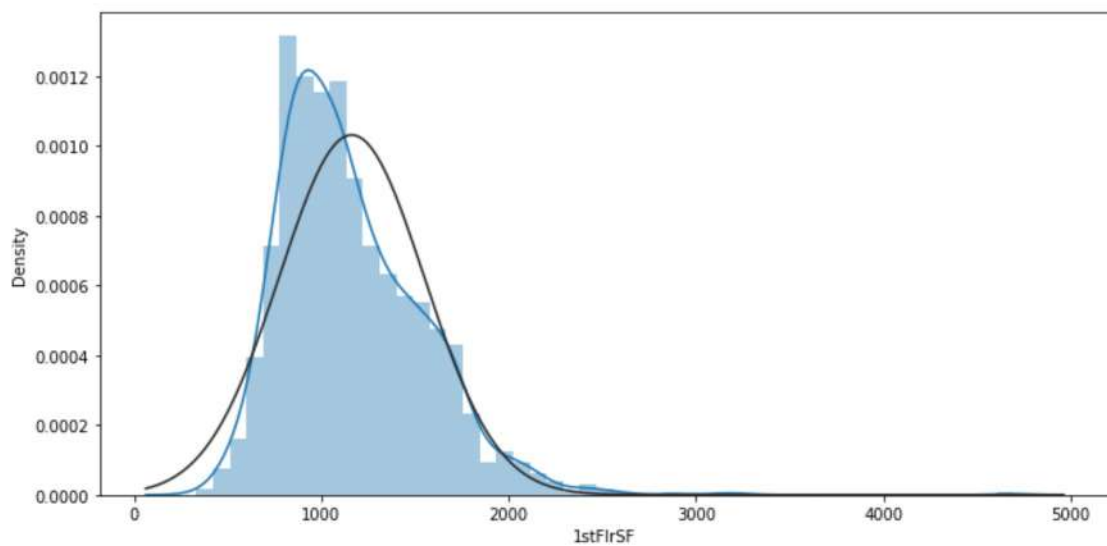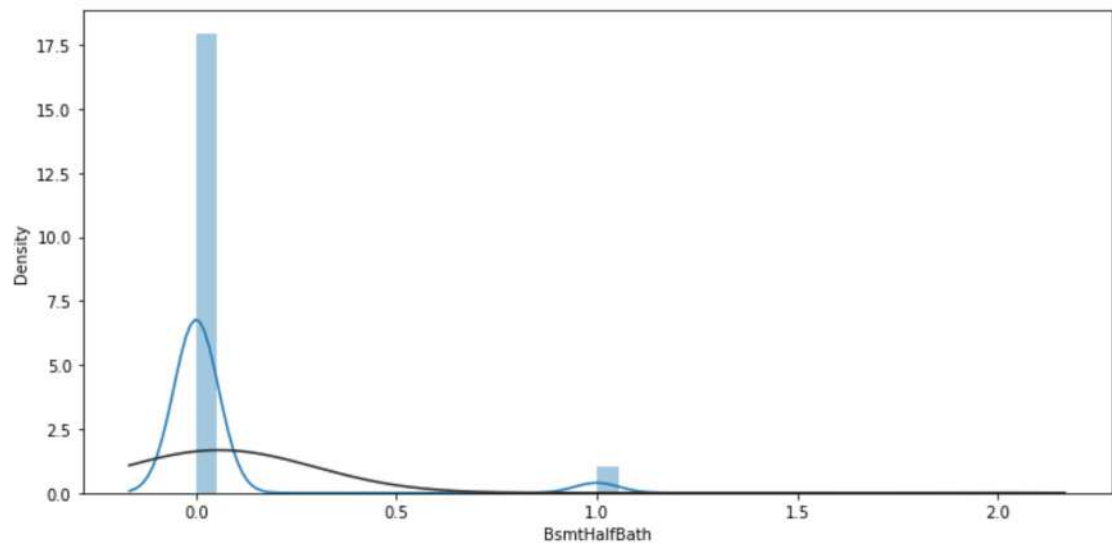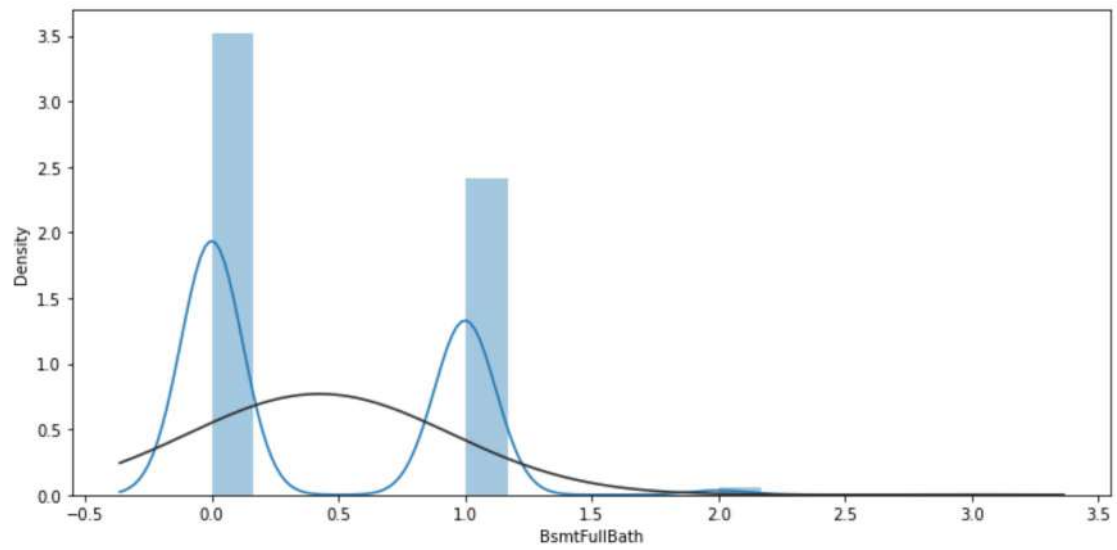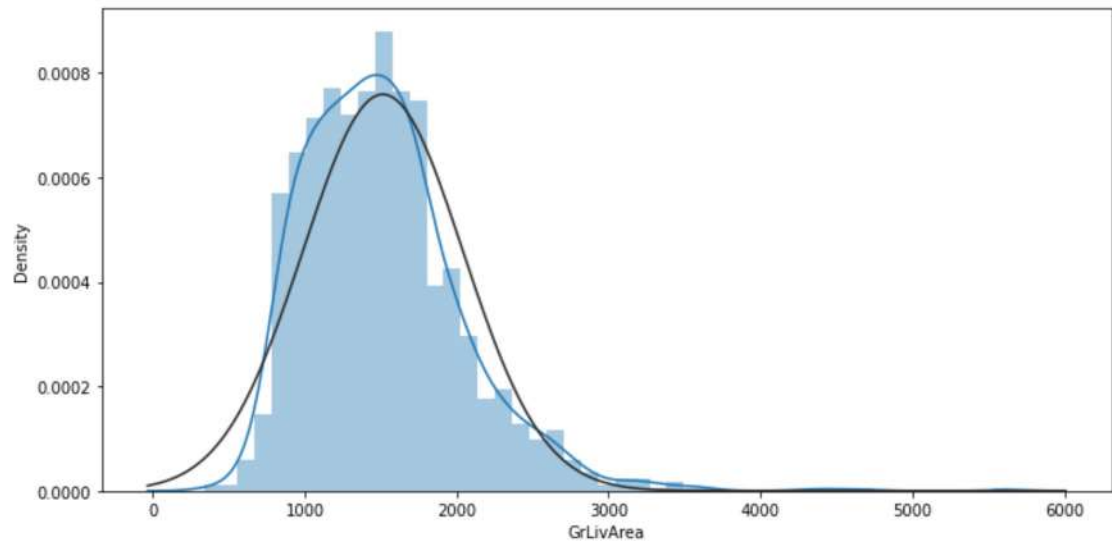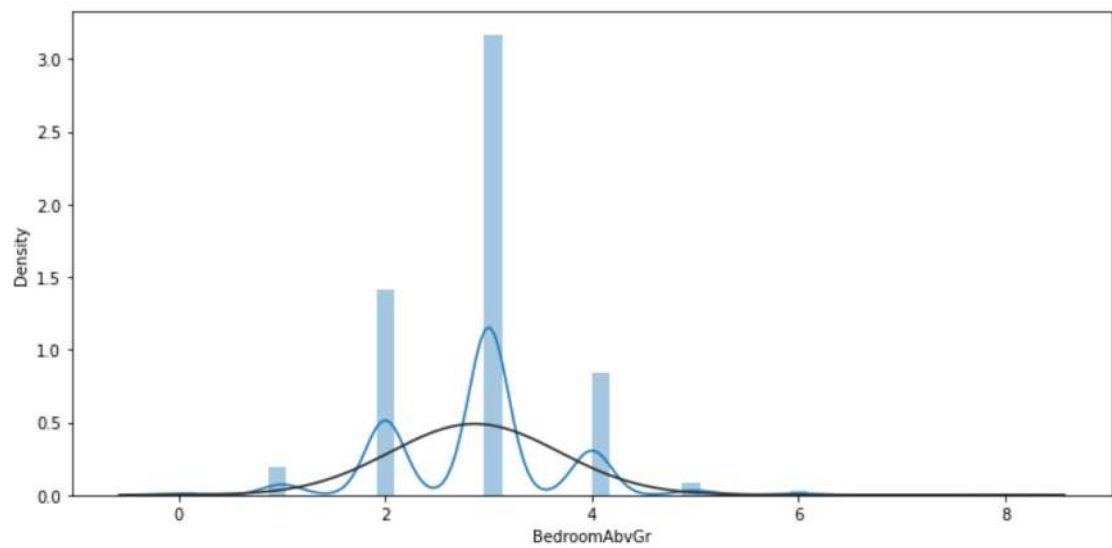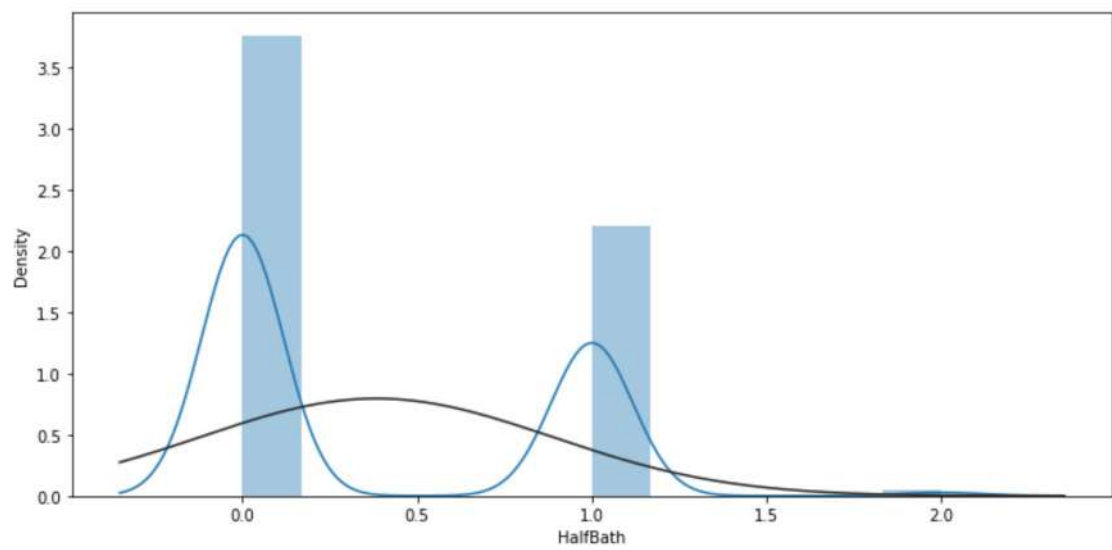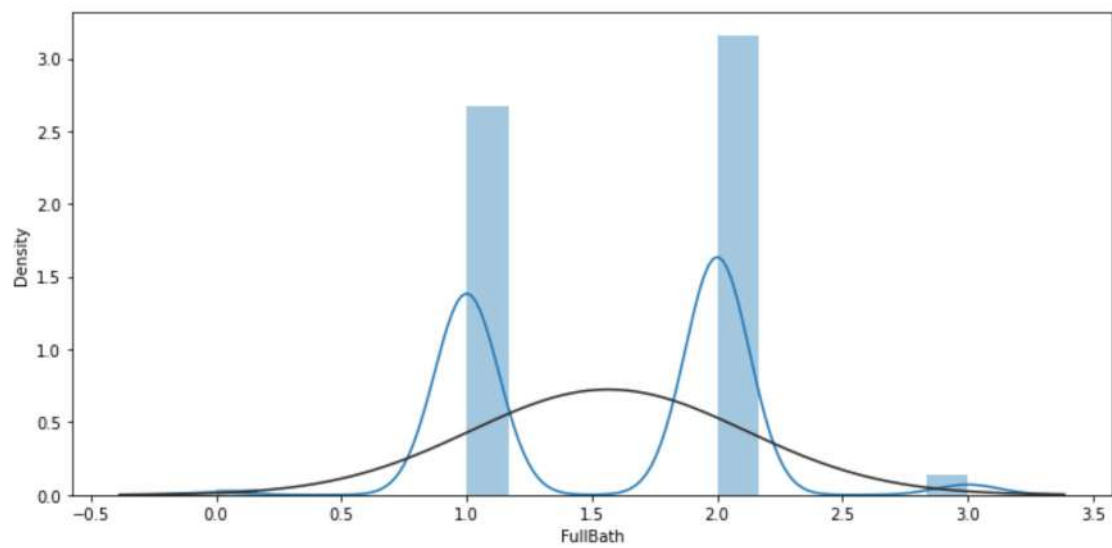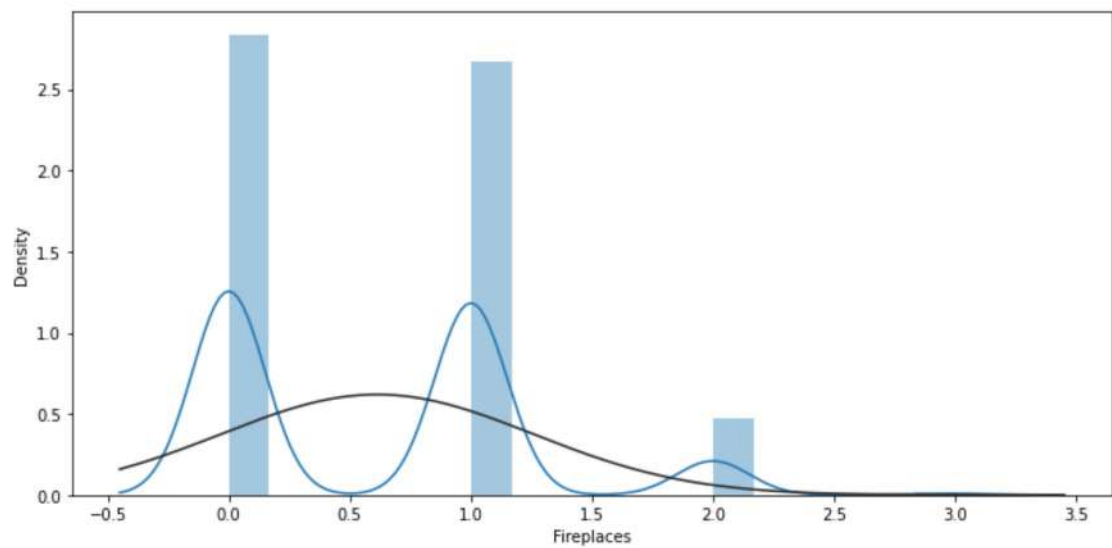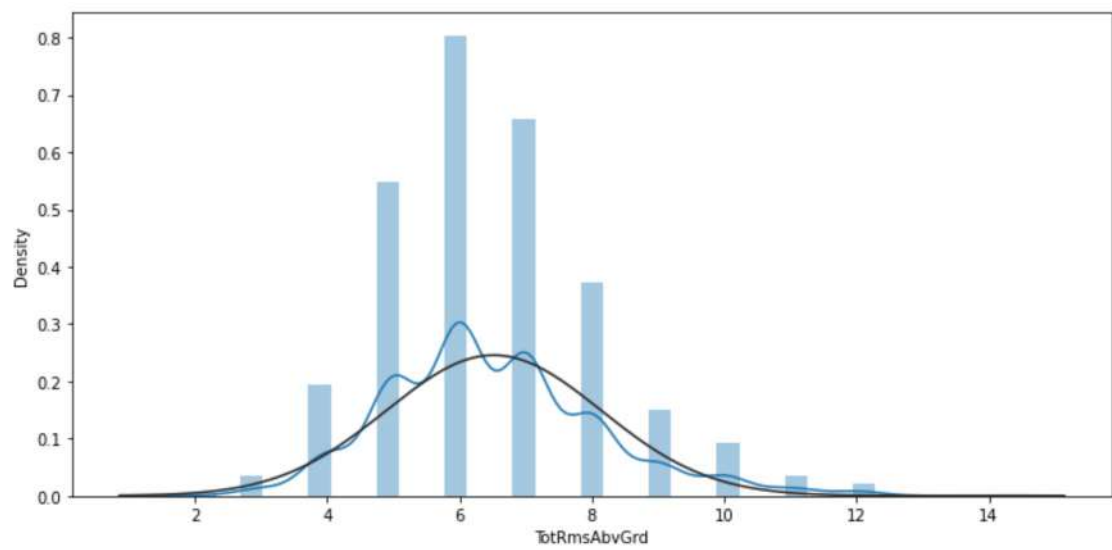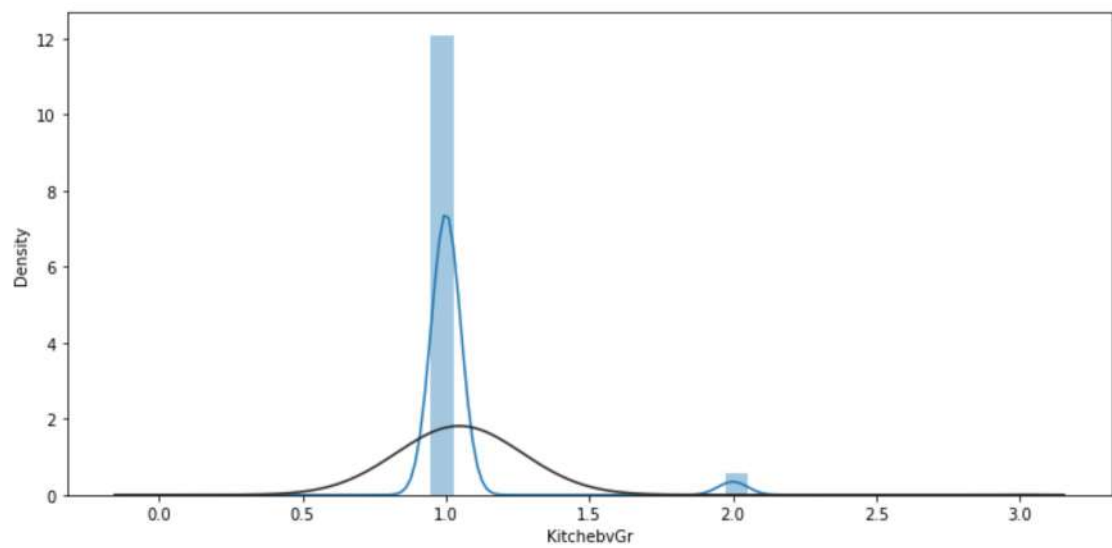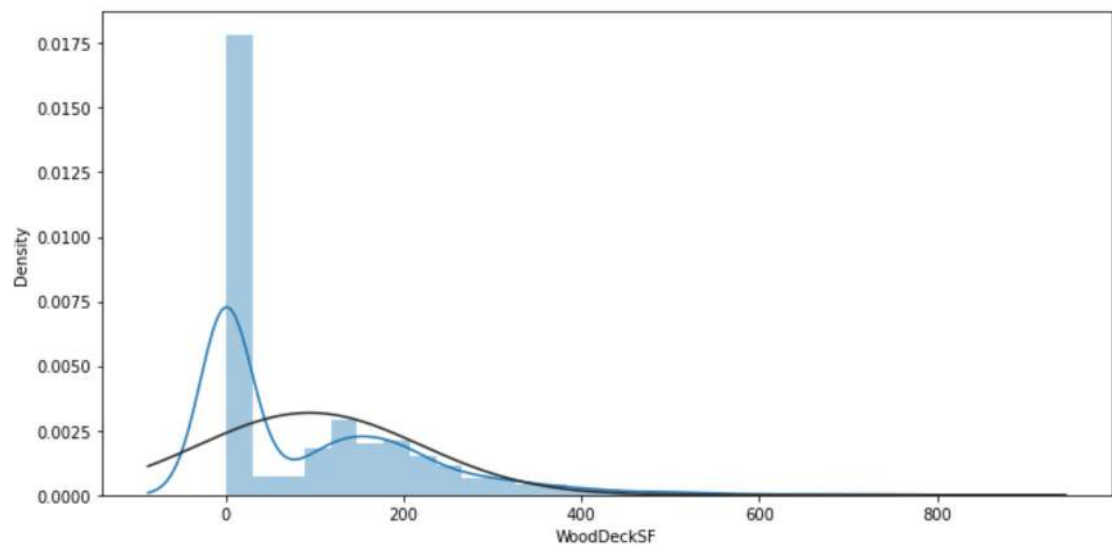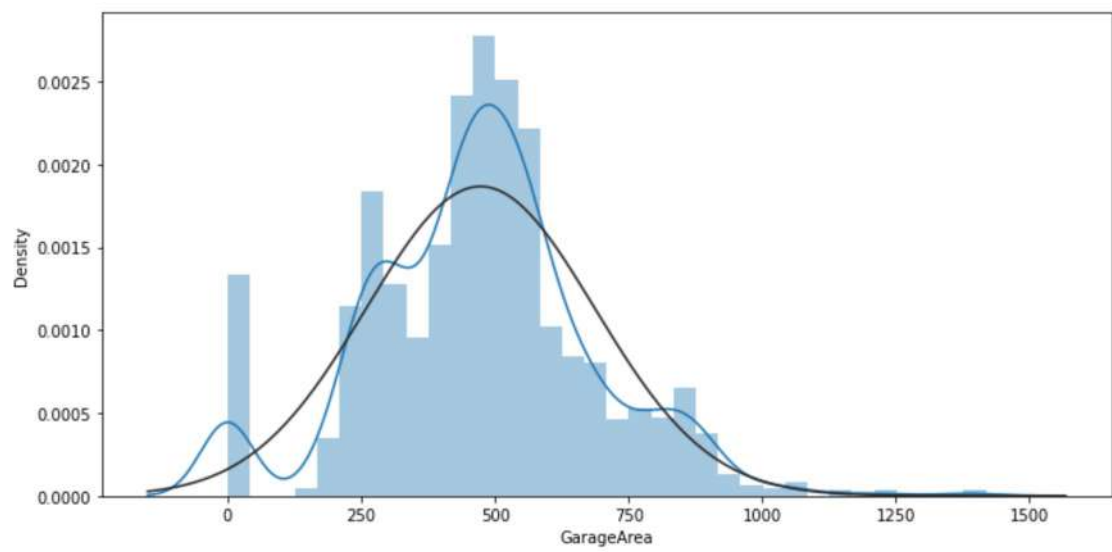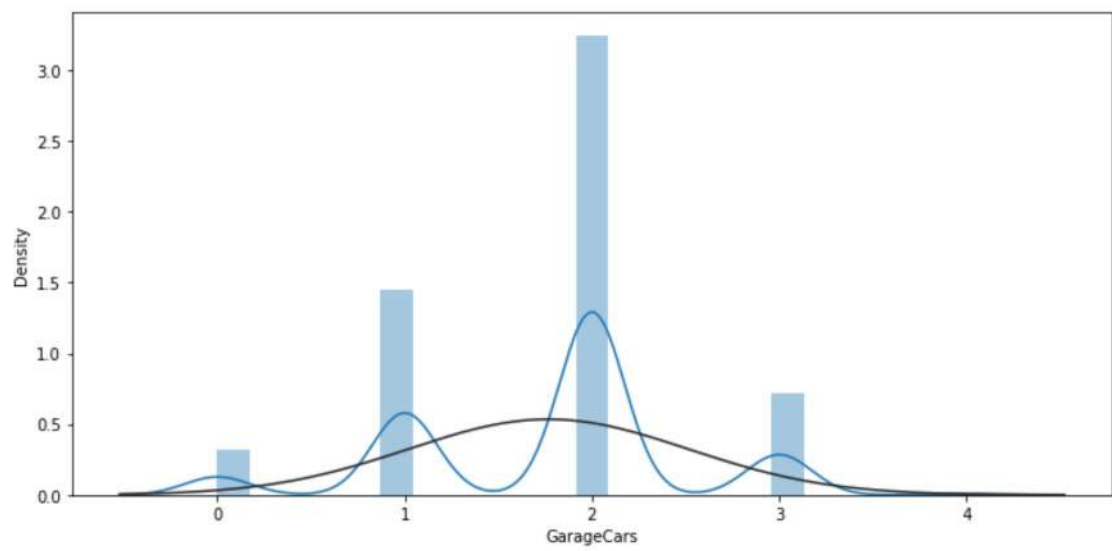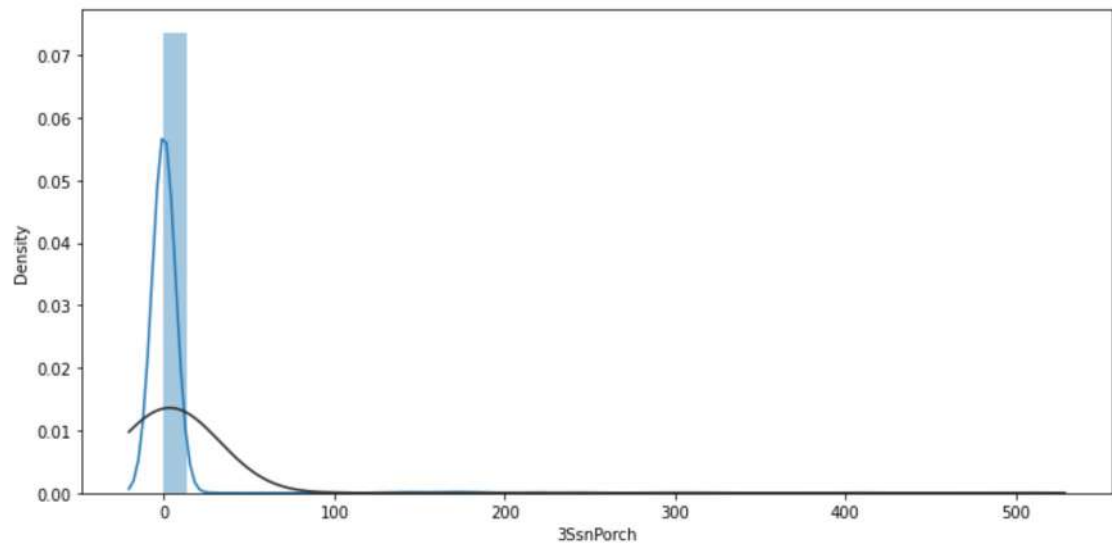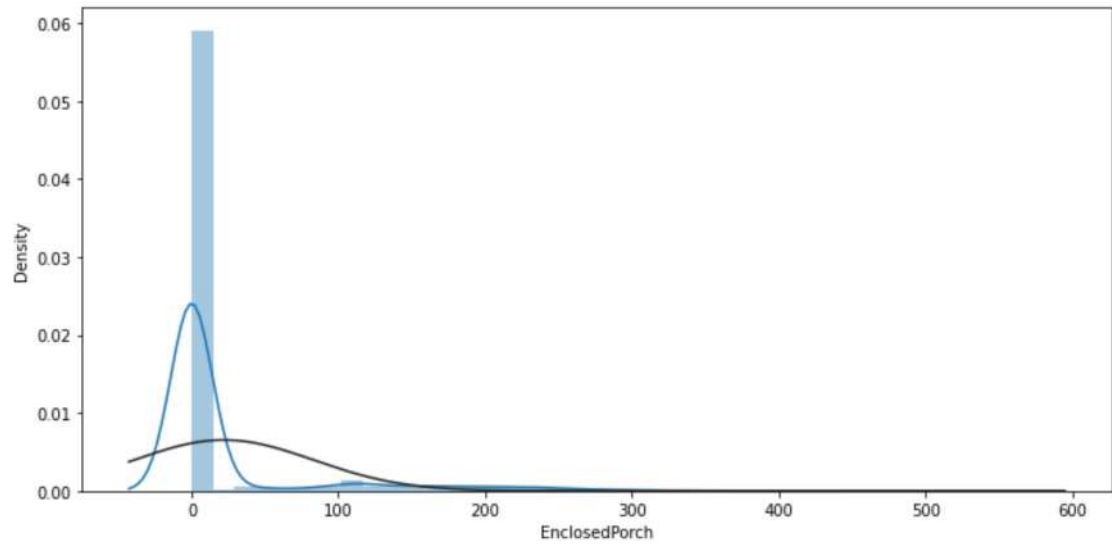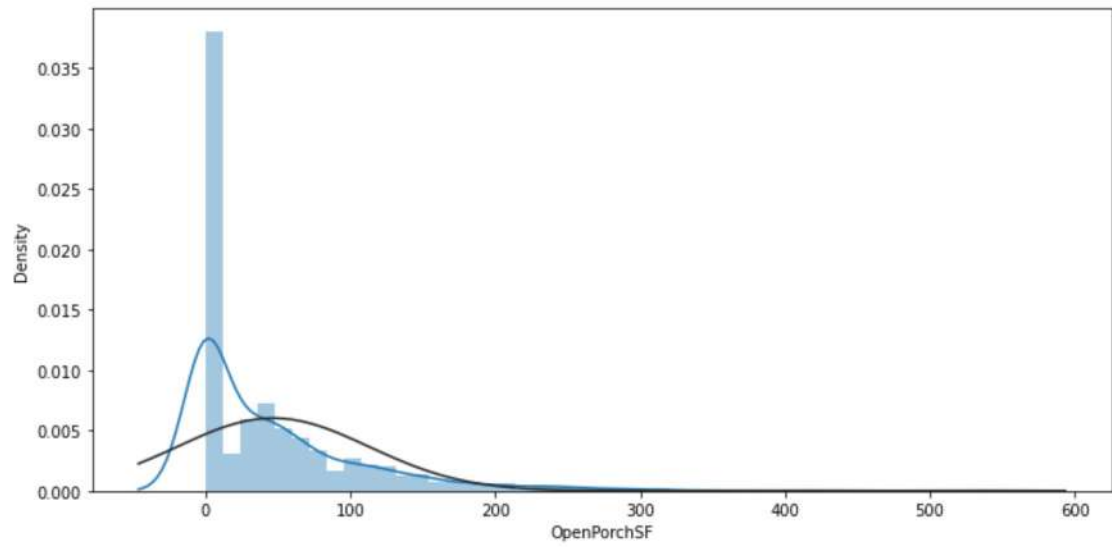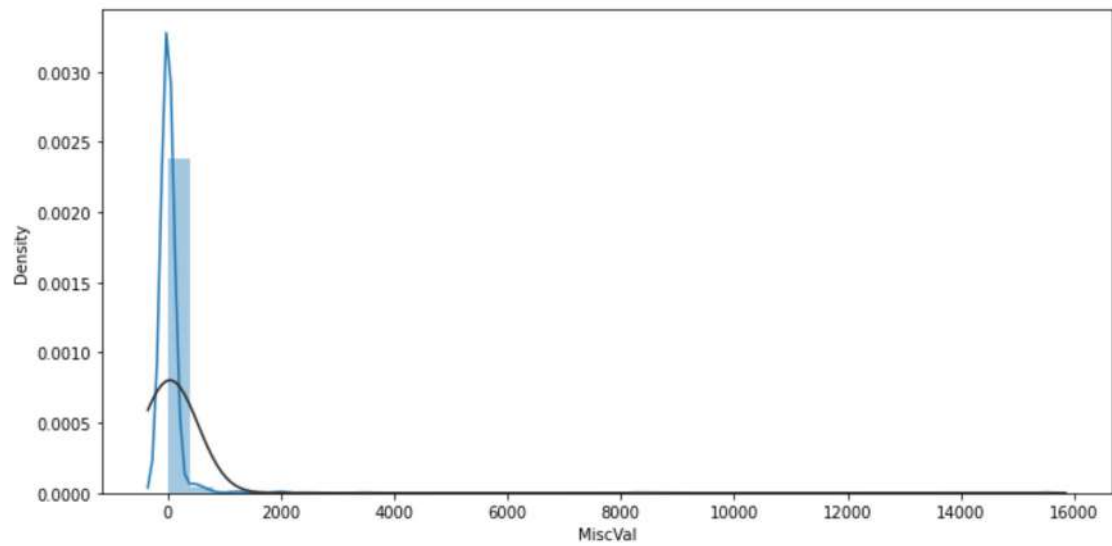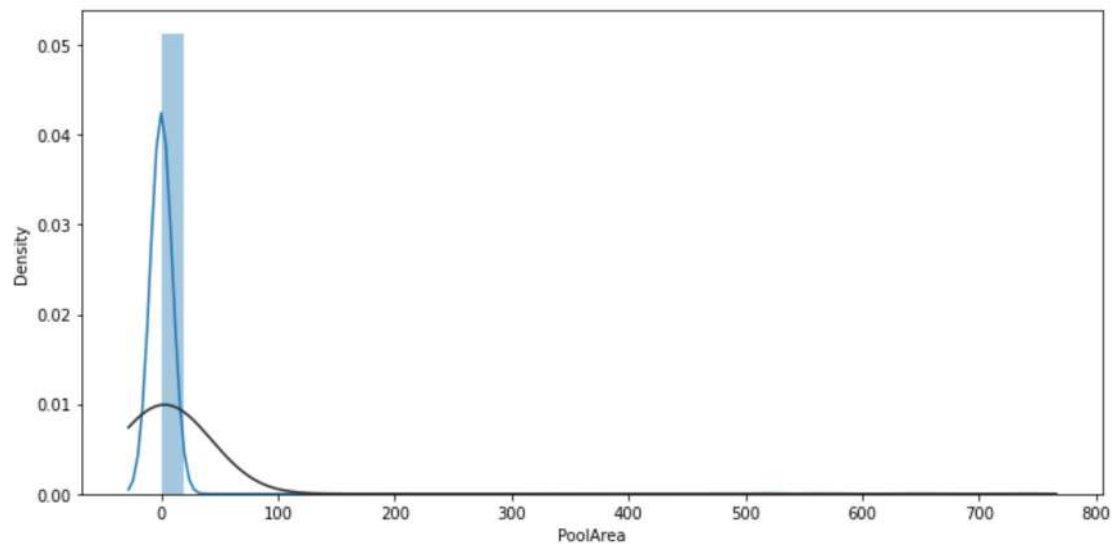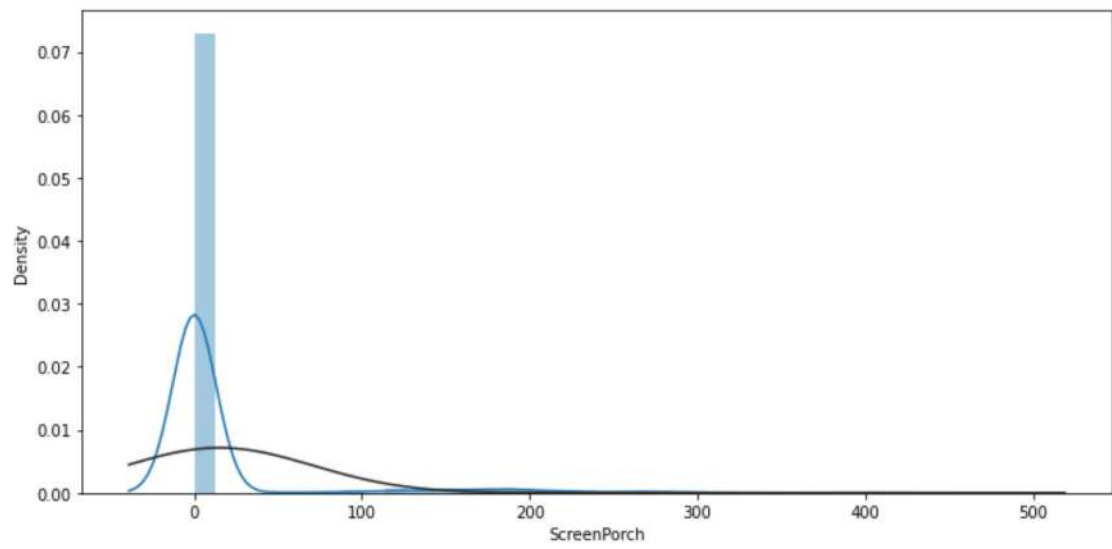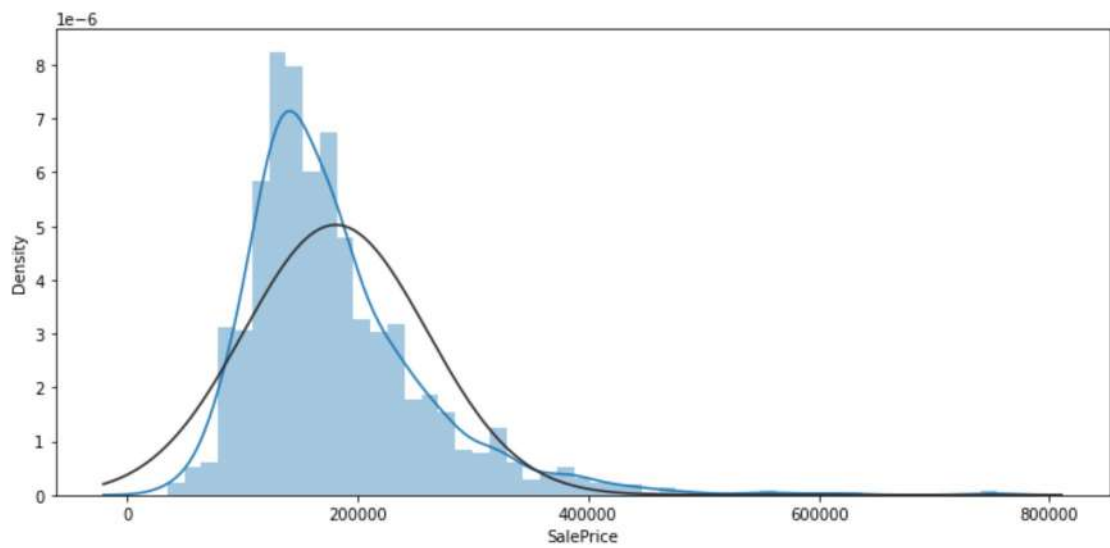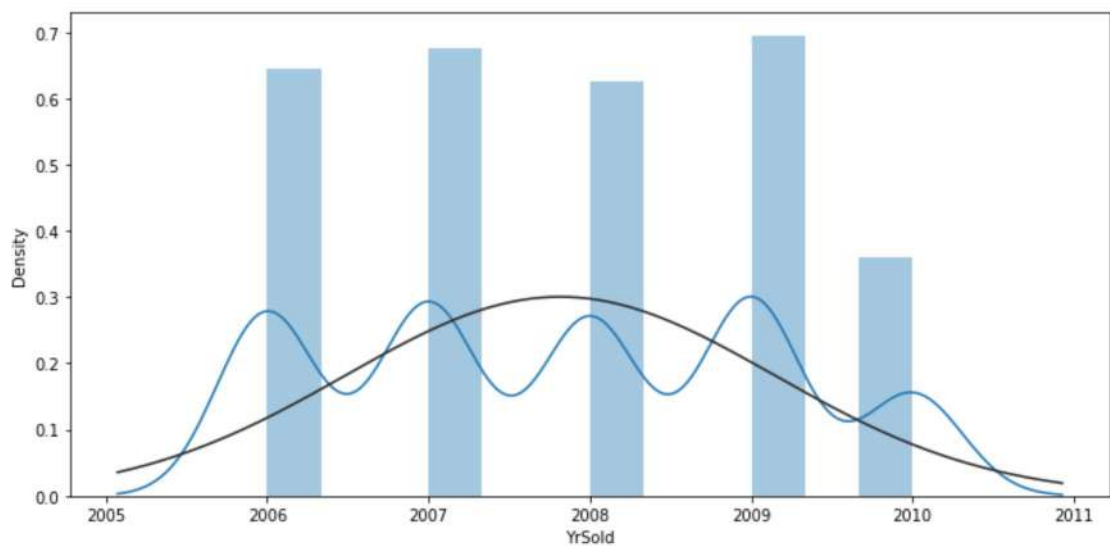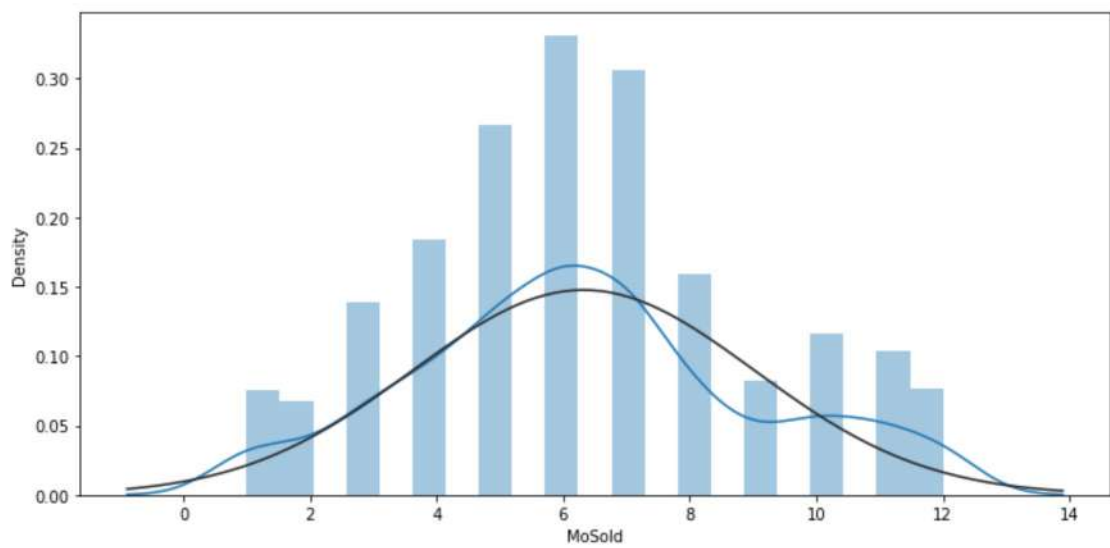
In [28]:
```python
plt.figure(figsize=(15,10))
sns.heatmap(no_data.corr())
```

Out[28]: <matplotlib.axes._subplots.AxesSubplot at 0x7fabd73ba9d0>

```
In [29]: sns.pairplot(no_data)
```

Out[29]: <seaborn.axisgrid.PairGrid at 0x7fabd8047a50>


```
In [30]: no_data.shape
```

Out[30]: (1460, 33)

```
In [31]: no_data.columns[19:34]
```
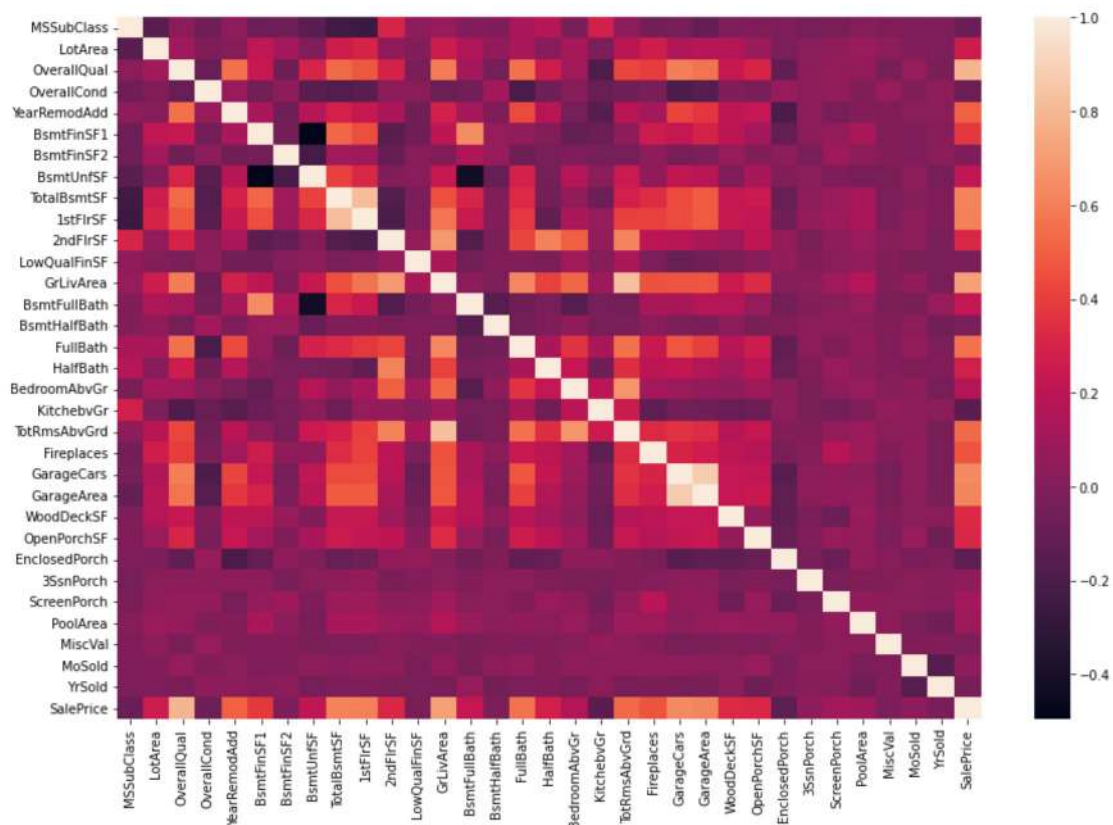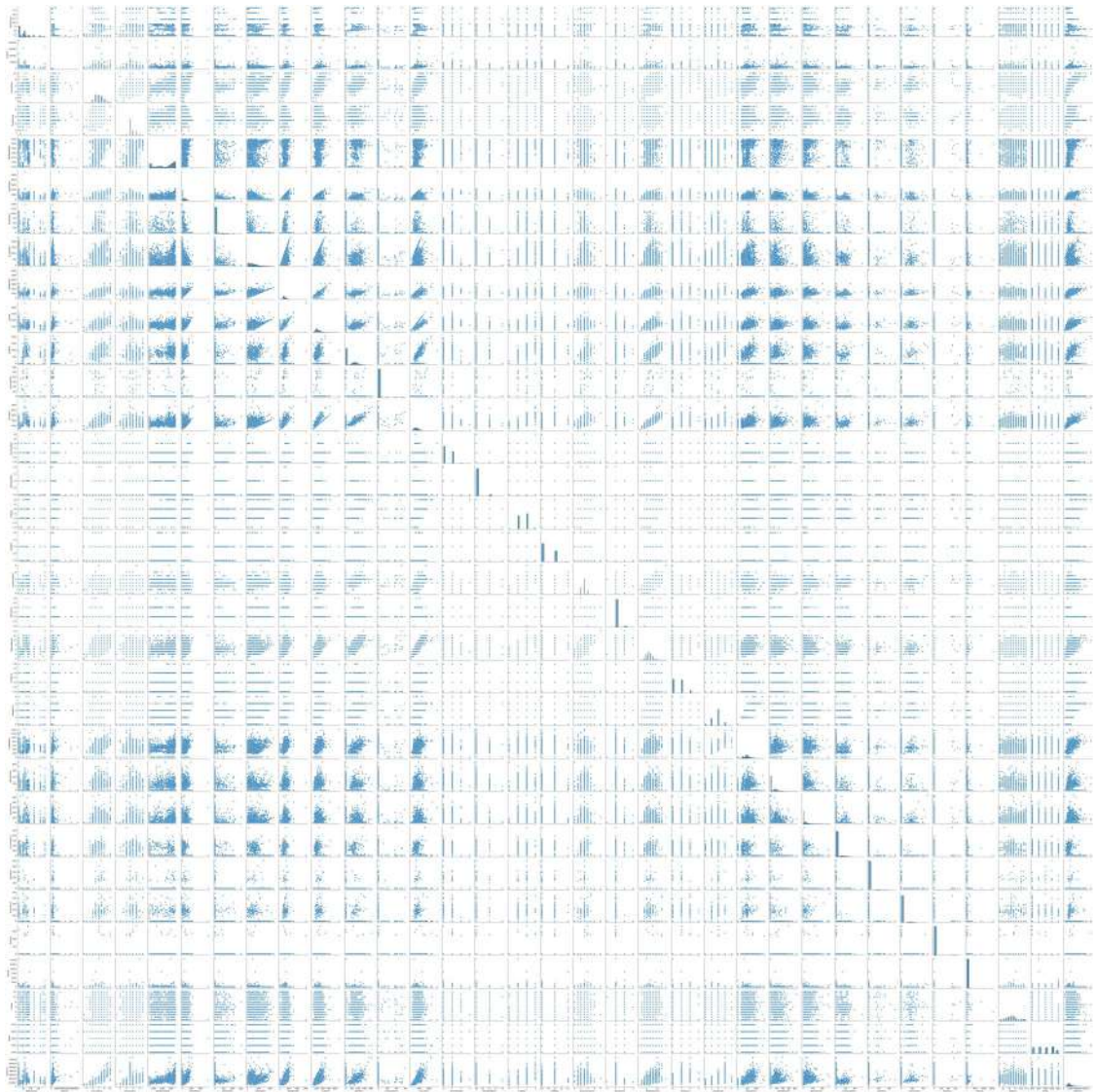
Out[31]: Index(['TotRmsAbvGrd', 'Fireplaces', 'GarageCars', 'GarageArea', 'WoodDe
ckSF',
        'OpenPorchSF', 'EnclosedPorch', '3SsnPorch', 'ScreenPorch', 'Pool
Area',
        'MiscVal', 'MoSold', 'YrSold', 'SalePrice'],
       dtype='object')

```
In [32]: no_data1_pair = no_data[['MSSubClass','LotArea', 'OverallQual', 'OverallC
ond']]
```

In [33]: `sns.pairplot(no_data1_pair,kind="kde")` *# 18 attributes*

Out[33]: `<seaborn.axisgrid.PairGrid at 0x7fabbf843d90>`
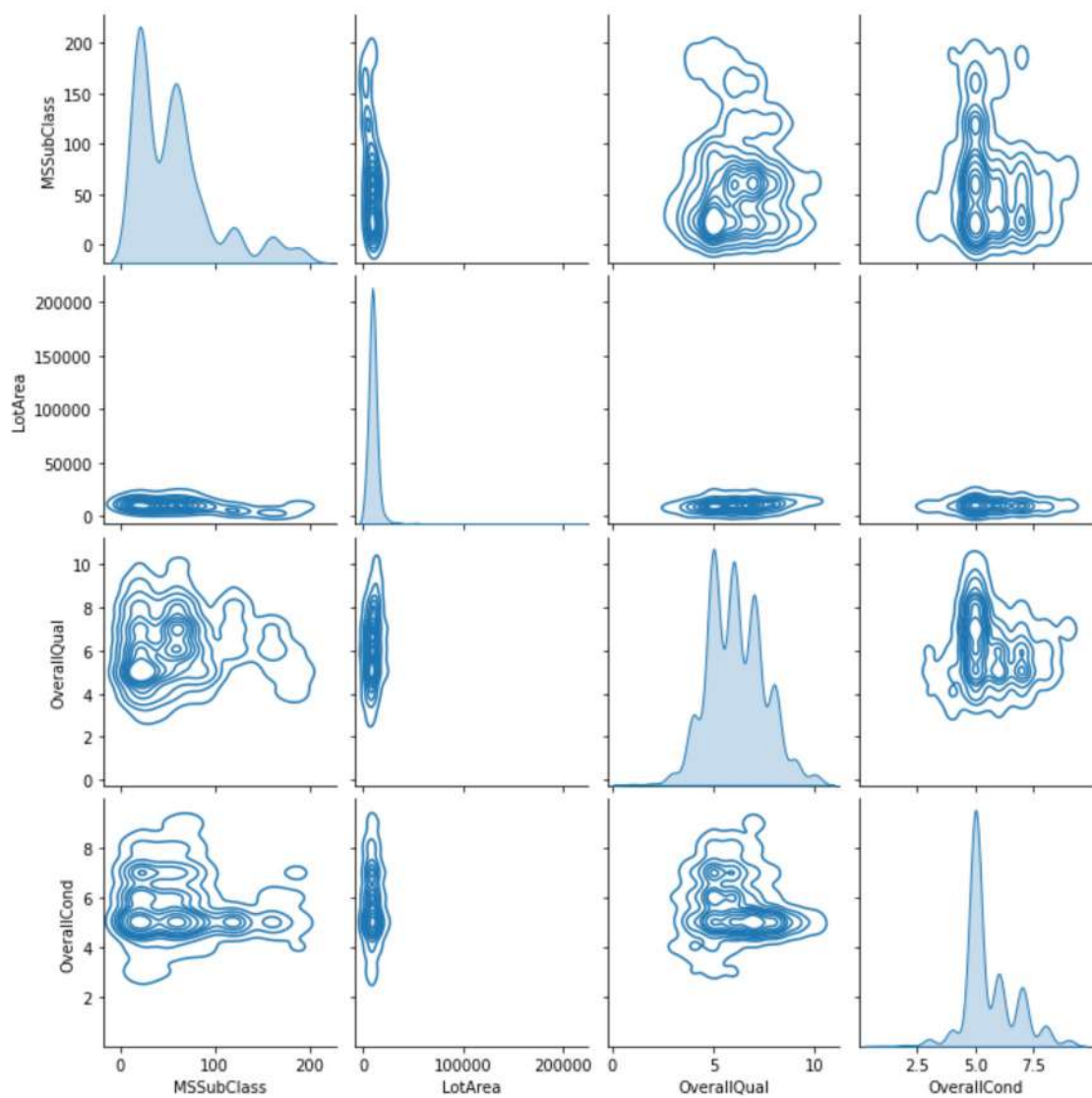
In [34]: `no_data2_pair = no_data[['YearRemodAdd', 'BsmtFinSF1', 'BsmtFinSF2', 'Bsm`
`tUnfSF']]`

In [35]:
```
sns.pairplot(no_data2_pair,kind="kde")
```

Out[35]: `<seaborn.axisgrid.PairGrid at 0x7fabbdc60150>`
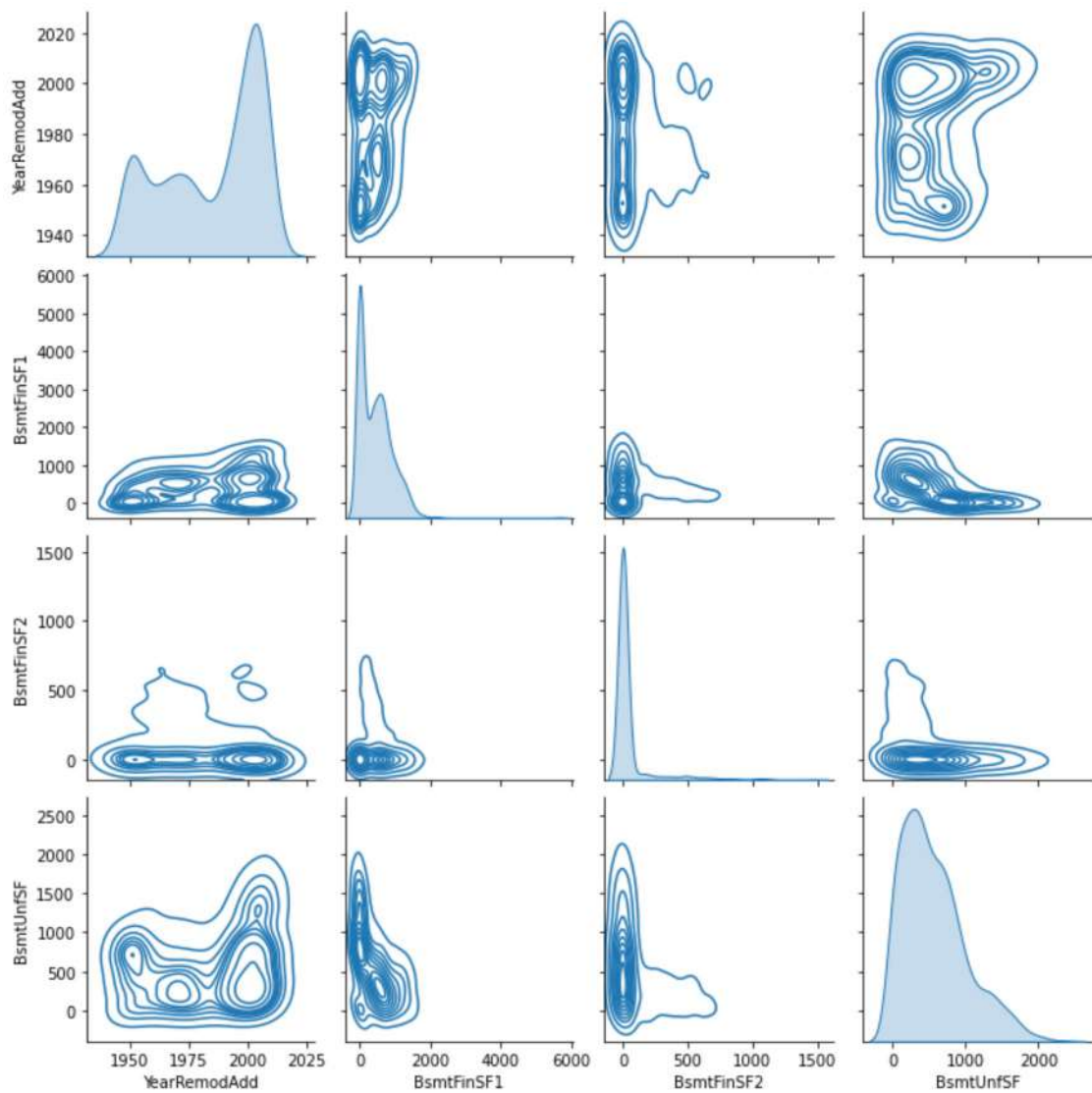
In [36]:
```
no_data3_pair = no_data[['TotalBsmtSF', '1stFlrSF', '2ndFlrSF', 'LowQualF
inSF', 'GrLivArea']]
```

In [37]: `sns.pairplot(no_data3_pair,kind="kde")`

Out[37]: `<seaborn.axisgrid.PairGrid at 0x7fabbd4b49d0>`
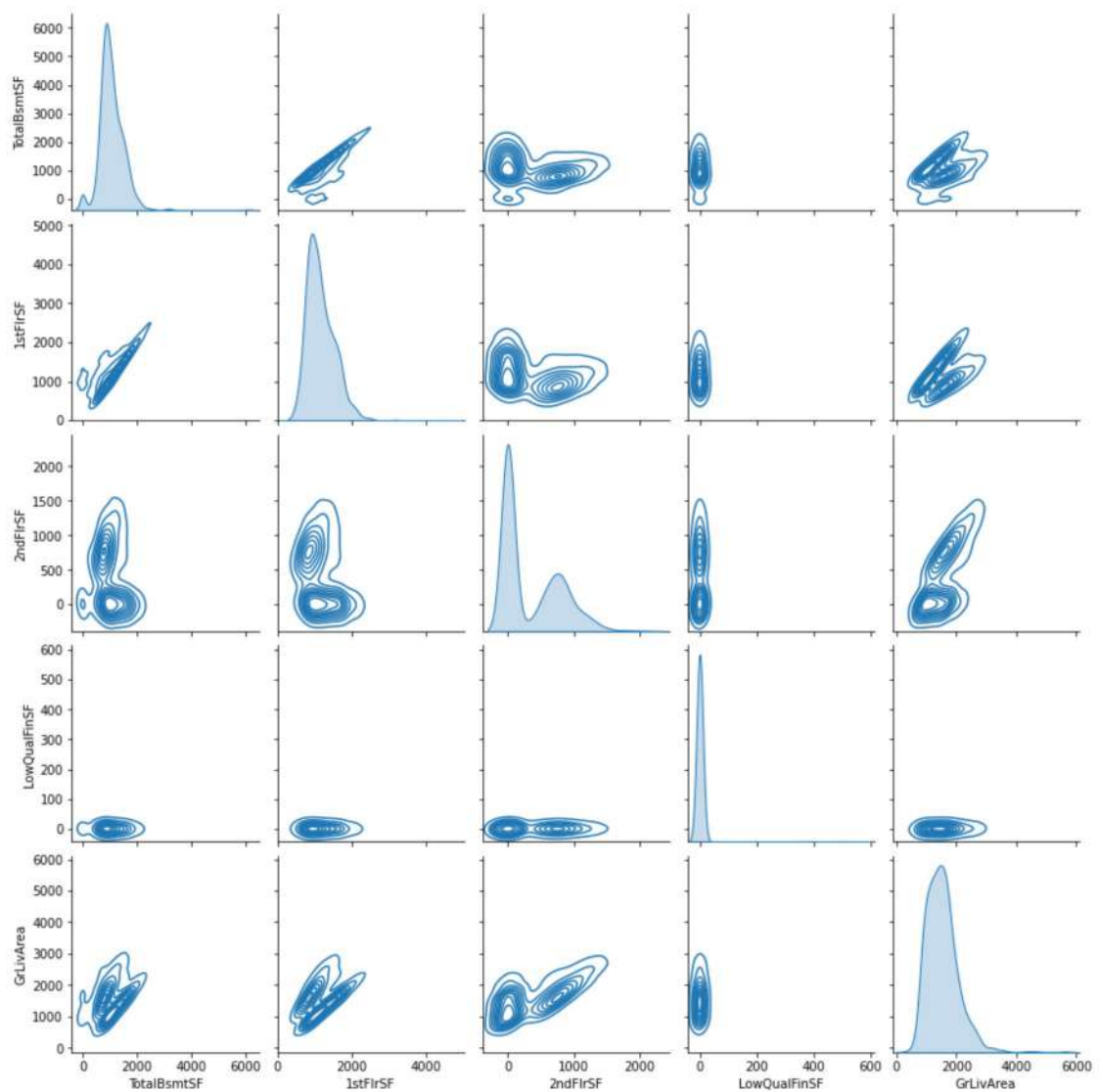
In [38]: `no_data4_pair = no_data[['BsmtFullBath', 'BsmtHalfBath', 'FullBath']]`

```
In [39]: sns.pairplot(no_data4_pair,kind="kde")
```

Out[39]: <seaborn.axisgrid.PairGrid at 0x7fabbc7d7790>
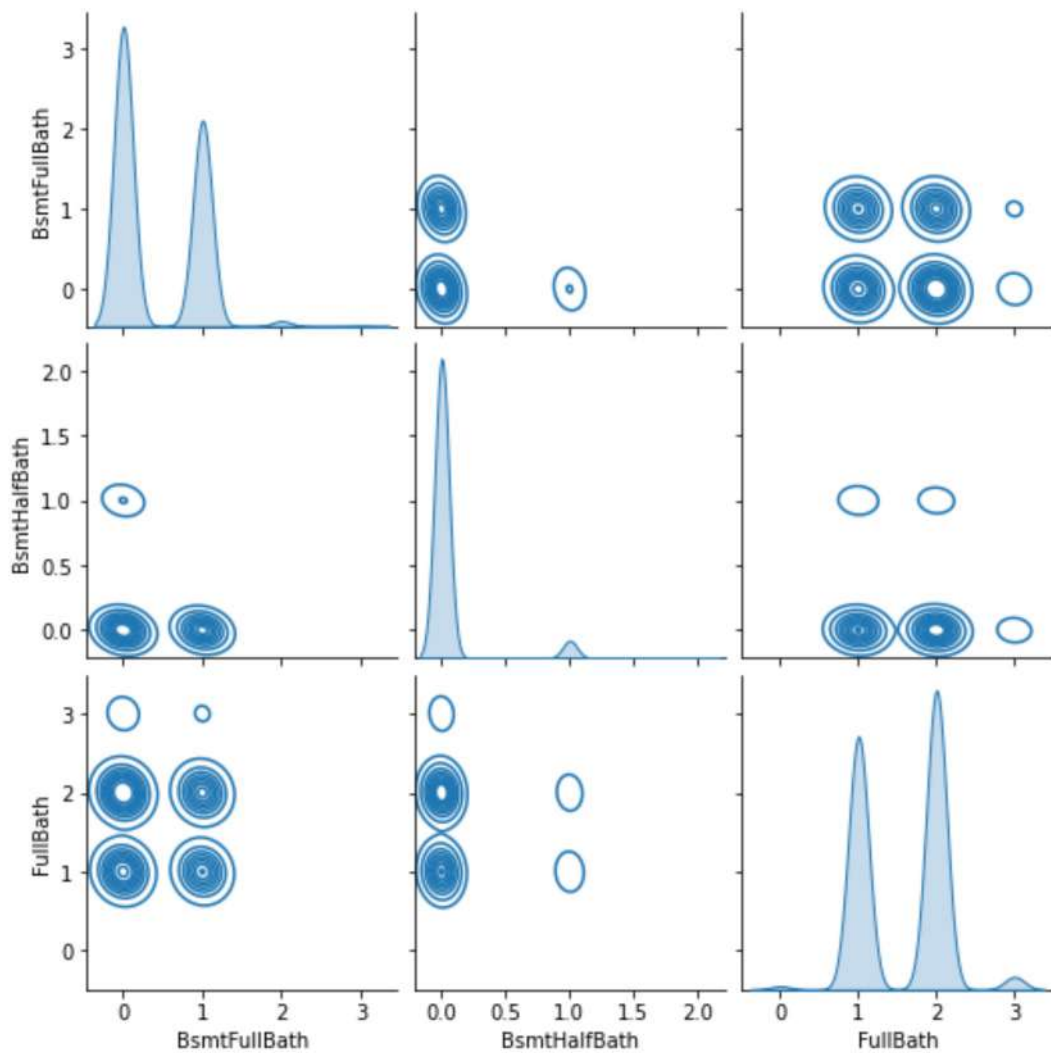
Index(['KitchebvGr', 'TotRmsAbvGrd', 'Fireplaces', 'GarageCars', 'GarageArea', 'WoodDeckSF',
'OpenPorchSF', 'EnclosedPorch', '3SsnPorch', 'ScreenPorch', 'PoolArea', 'MiscVal', 'MoSold', 'YrSold',
'SalePrice'],

```
In [40]: no_data5_pair = no_data[['KitchebvGr', 'TotRmsAbvGrd', 'Fireplaces', 'Gar
         ageCars', 'GarageArea']]
         no_data6_pair = no_data[['WoodDeckSF', 'OpenPorchSF', 'EnclosedPorch', '3
         SsnPorch','ScreenPorch']]
         no_data7_pair = no_data[['PoolArea', 'MiscVal', 'MoSold', 'YrSold', 'Sale
         Price']]
```

In [41]: `sns.pairplot(no_data5_pair,kind="kde")`

Out[41]: `<seaborn.axisgrid.PairGrid at 0x7fabbc301490>`
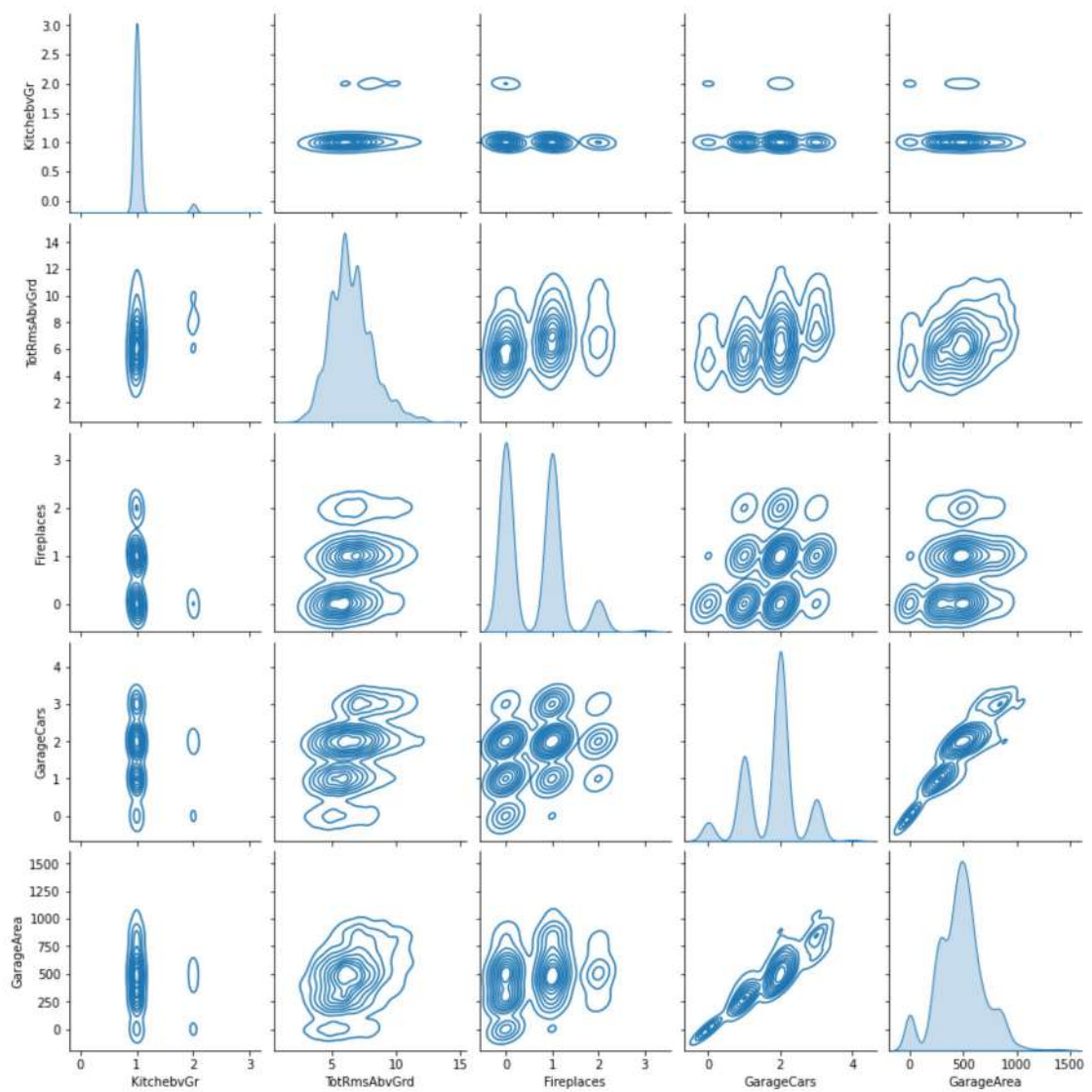
In [42]: sns.pairplot(no_data6_pair,kind="kde")

Out[42]: <seaborn.axisgrid.PairGrid at 0x7fabbb6e8e10>
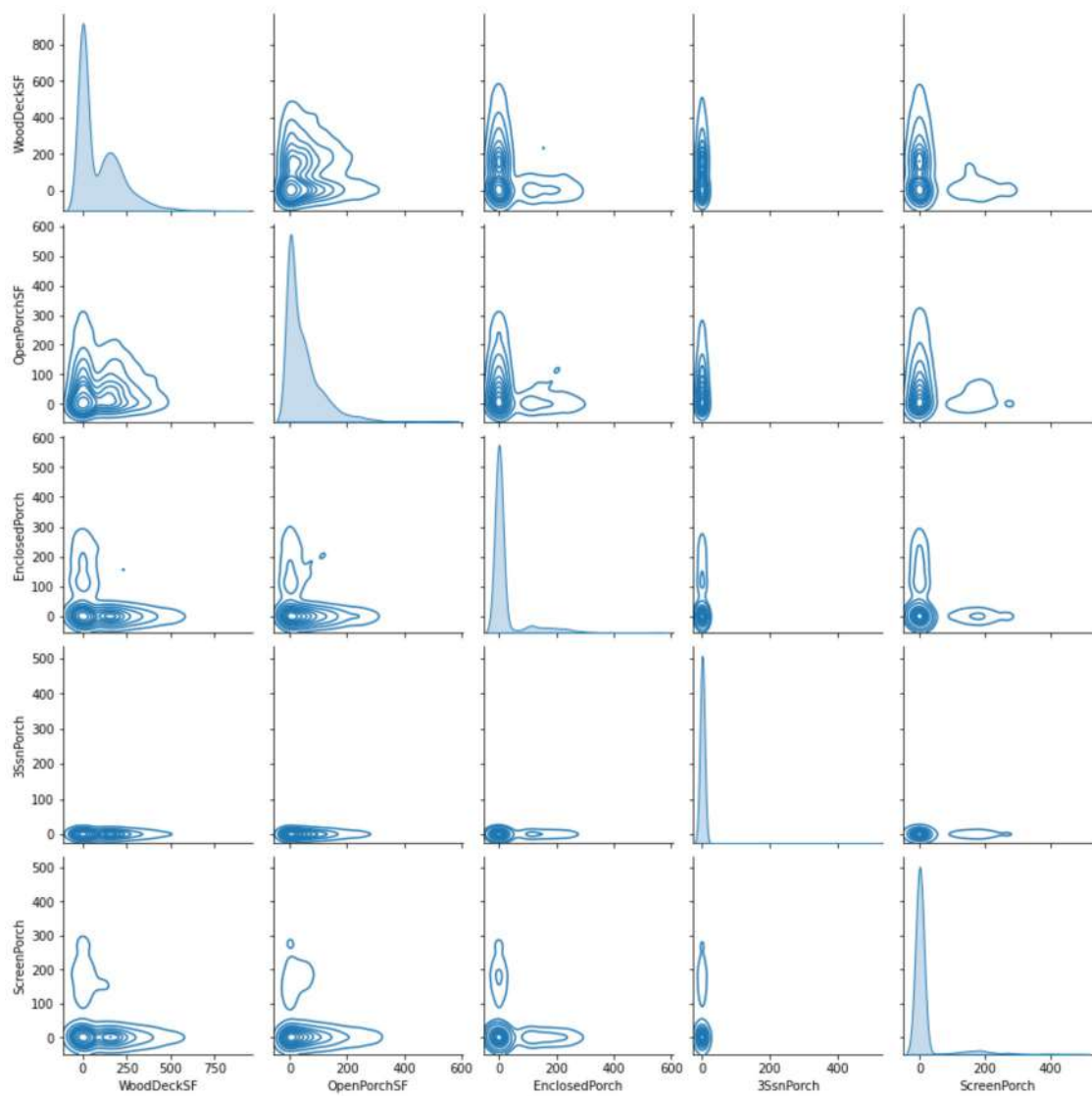
In [43]: sns.pairplot(no_data7_pair,kind="kde")

Out[43]: <seaborn.axisgrid.PairGrid at 0x7fabbab2b2d0>
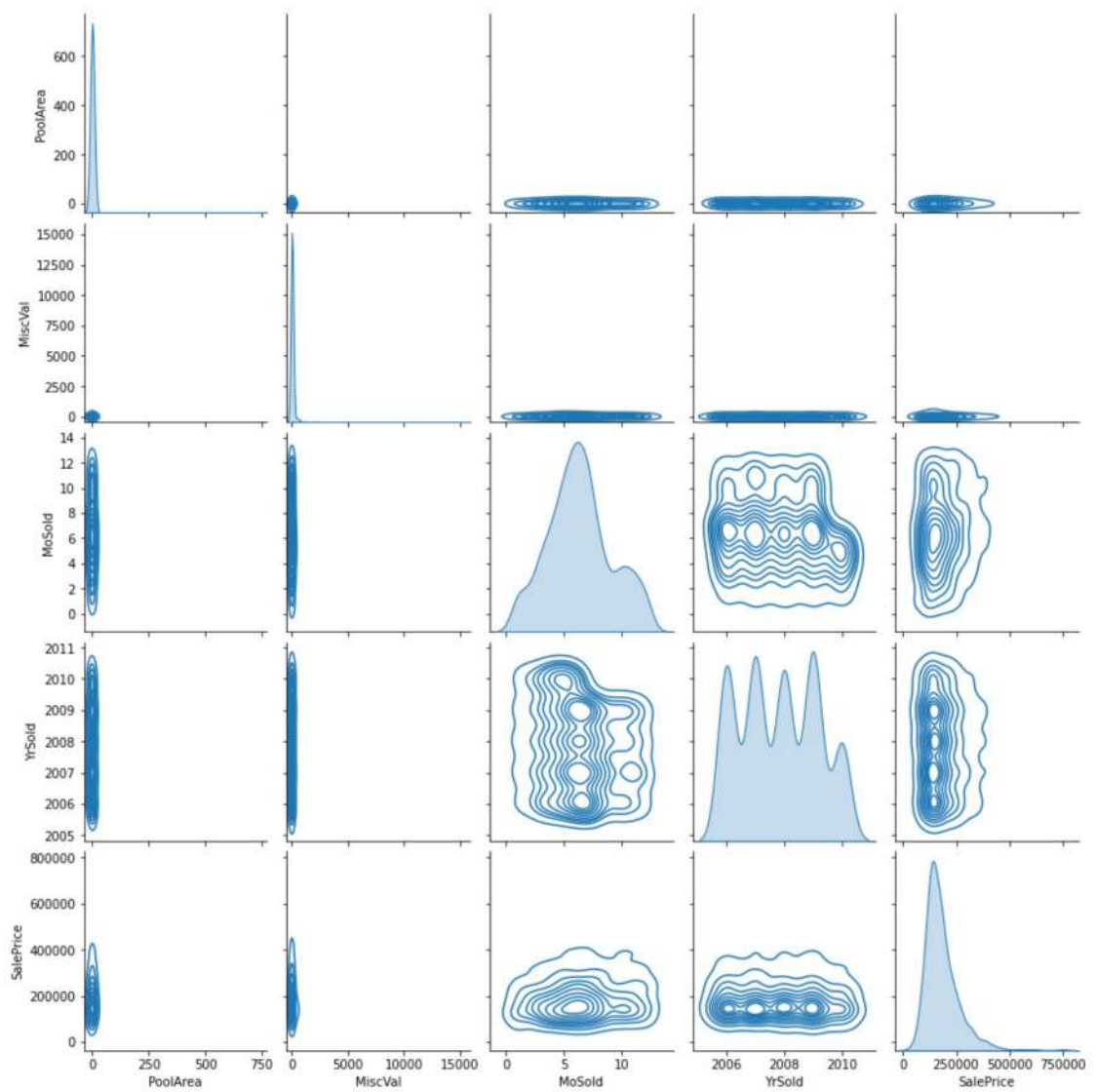
```
In [20]: for column in cat_data:
            print(f'{column} sum of null values: {cat_data[column].isnull().sum
         ()}')
            print(f'{column}: {data[column].unique()}')
            print(f'Total no.of unique value: {cat_data[column].nunique()}')
            print
         ('-----------------------------------------------------------------------
         ------------------------------------------------------------------')
```

```
MSZoning sum of null values: 0
MSZoning: ['RL' 'RM' 'C (all)' 'FV' 'RH']
Total no.of unique value: 5
-------------------------------------------------------------------------
------------------------------------------------------------------------
Street sum of null values: 0
Street: ['Pave' 'Grvl']
Total no.of unique value: 2
--------------------------------------------------------------------------
------------------------------------------------------------------------
Alley sum of null values: 1369
Alley: [nan 'Grvl' 'Pave']
Total no.of unique value: 2
---------------------------------------------------------------------------
------------------------------------------------------------------------
LotShape sum of null values: 0
LotShape: ['Reg' 'IR1' 'IR2' 'IR3']
Total no.of unique value: 4
---------------------------------------------------------------------------
------------------------------------------------------------------------
LandContour sum of null values: 0
LandContour: ['Lvl' 'Bnk' 'Low' 'HLS']
Total no.of unique value: 4
--------------------------------------------------------------------------
-----------------------------------------------------------------------
Utilities sum of null values: 0
Utilities: ['AllPub' 'NoSeWa']
Total no.of unique value: 2
--------------------------------------------------------------------------
-----------------------------------------------------------------------
LotConfig sum of null values: 0
LotConfig: ['Inside' 'FR2' 'Corner' 'CulDSac' 'FR3']
Total no.of unique value: 5
---------------------------------------------------------------------------
-----------------------------------------------------------------------
LandSlope sum of null values: 0
LandSlope: ['Gtl' 'Mod' 'Sev']
Total no.of unique value: 3
---------------------------------------------------------------------------
-----------------------------------------------------------------------
Neighborhood sum of null values: 0
Neighborhood: ['CollgCr' 'Veenker' 'Crawfor' 'NoRidge' 'Mitchel' 'Somers
t' 'NWAmes'
 'OldTown' 'BrkSide' 'Sawyer' 'NridgHt' 'mes' 'SawyerW' 'IDOTRR' 'Meadow
V'
 'Edwards' 'Timber' 'Gilbert' 'StoneBr' 'ClearCr' 'NPkVill' 'Blmngtn'
 'BrDale' 'SWISU' 'Blueste']
Total no.of unique value: 25
---------------------------------------------------------------------------
-----------------------------------------------------------------------
Condition1 sum of null values: 0
Condition1: ['Norm' 'Feedr' 'PosN' 'Artery' 'RRAe' 'RRNn' 'RRAn' 'PosA'
'RRNe']
Total no.of unique value: 9
---------------------------------------------------------------------------
----------------------------------------------------------------------
Condition2 sum of null values: 0
Condition2: ['Norm' 'Artery' 'RRNn' 'Feedr' 'PosN' 'PosA' 'RRAn' 'RRAe']
Total no.of unique value: 8
---------------------------------------------------------------------------
```

```
                 --------------------------------------------------------------------
                 BldgType sum of null values: 0
                 BldgType: ['1Fam' '2fmCon' 'Duplex' 'TwnhsE' 'Twnhs']
                 Total no.of unique value: 5
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 HouseStyle sum of null values: 0
                 HouseStyle: ['2Story' '1Story' '1.5Fin' '1.5Unf' 'SFoyer' 'SLvl' '2.5Unf
                 ' '2.5Fin']
                 Total no.of unique value: 8
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 RoofStyle sum of null values: 0
                 RoofStyle: ['Gable' 'Hip' 'Gambrel' 'Mansard' 'Flat' 'Shed']
                 Total no.of unique value: 6
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 RoofMatl sum of null values: 0
                 RoofMatl: ['CompShg' 'WdShngl' 'Metal' 'WdShake' 'Membran' 'Tar&Grv' 'Ro
                 ll'
                  'ClyTile']
                 Total no.of unique value: 8
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 Exterior1st sum of null values: 0
                 Exterior1st: ['VinylSd' 'MetalSd' 'Wd Sdng' 'HdBoard' 'BrkFace' 'WdShing
                 ' 'CemntBd'
                  'Plywood' 'AsbShng' 'Stucco' 'BrkComm' 'AsphShn' 'Stone' 'ImStucc'
                  'CBlock']
                 Total no.of unique value: 15
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 Exterior2nd sum of null values: 0
                 Exterior2nd: ['VinylSd' 'MetalSd' 'Wd Shng' 'HdBoard' 'Plywood' 'Wd Sdng
                 ' 'CmentBd'
                  'BrkFace' 'Stucco' 'AsbShng' 'Brk Cmn' 'ImStucc' 'AsphShn' 'Stone'
                  'Other' 'CBlock']
                 Total no.of unique value: 16
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 MasVnrType sum of null values: 8
                 MasVnrType: ['BrkFace' 'None' 'Stone' 'BrkCmn' nan]
                 Total no.of unique value: 4
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 ExterQual sum of null values: 0
                 ExterQual: ['Gd' 'TA' 'Ex' 'Fa']
                 Total no.of unique value: 4
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 ExterCond sum of null values: 0
                 ExterCond: ['TA' 'Gd' 'Fa' 'Po' 'Ex']
                 Total no.of unique value: 5
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
                 Foundation sum of null values: 0
                 Foundation: ['PConc' 'CBlock' 'BrkTil' 'Wood' 'Slab' 'Stone']
                 Total no.of unique value: 6
                 --------------------------------------------------------------------------
                 --------------------------------------------------------------------
```

```
            BsmtQual sum of null values: 37
            BsmtQual: ['Gd' 'TA' 'Ex' nan 'Fa']
            Total no.of unique value: 4
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            BsmtCond sum of null values: 37
            BsmtCond: ['TA' 'Gd' nan 'Fa' 'Po']
            Total no.of unique value: 4
            ------------------------------------------------------------------------------
            -----------------------------------------------------------------------
            BsmtExposure sum of null values: 38
            BsmtExposure: ['No' 'Gd' 'Mn' 'Av' nan]
            Total no.of unique value: 4
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            BsmtFinType1 sum of null values: 37
            BsmtFinType1: ['GLQ' 'ALQ' 'Unf' 'Rec' 'BLQ' nan 'LwQ']
            Total no.of unique value: 6
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            BsmtFinType2 sum of null values: 38
            BsmtFinType2: ['Unf' 'BLQ' nan 'ALQ' 'Rec' 'LwQ' 'GLQ']
            Total no.of unique value: 6
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            Heating sum of null values: 0
            Heating: ['GasA' 'GasW' 'Grav' 'Wall' 'OthW' 'Floor']
            Total no.of unique value: 6
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            HeatingQC sum of null values: 0
            HeatingQC: ['Ex' 'Gd' 'TA' 'Fa' 'Po']
            Total no.of unique value: 5
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            CentralAir sum of null values: 0
            CentralAir: ['Y' 'N']
            Total no.of unique value: 2
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            Electrical sum of null values: 1
            Electrical: ['SBrkr' 'FuseF' 'FuseA' 'FuseP' 'Mix' nan]
            Total no.of unique value: 5
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            KitchenQual sum of null values: 0
            KitchenQual: ['Gd' 'TA' 'Ex' 'Fa']
            Total no.of unique value: 4
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            Functiol sum of null values: 0
            Functiol: ['Typ' 'Min1' 'Maj1' 'Min2' 'Mod' 'Maj2' 'Sev']
            Total no.of unique value: 7
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
            FireplaceQu sum of null values: 690
            FireplaceQu: [nan 'TA' 'Gd' 'Fa' 'Ex' 'Po']
            Total no.of unique value: 5
            -----------------------------------------------------------------------------
            -----------------------------------------------------------------------
```

```
GarageType sum of null values: 81
GarageType: ['Attchd' 'Detchd' 'BuiltIn' 'CarPort' nan 'Basment' '2Types
']
Total no.of unique value: 6
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
GarageFinish sum of null values: 81
GarageFinish: ['RFn' 'Unf' 'Fin' nan]
Total no.of unique value: 3
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
GarageQual sum of null values: 81
GarageQual: ['TA' 'Fa' 'Gd' nan 'Ex' 'Po']
Total no.of unique value: 5
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
GarageCond sum of null values: 81
GarageCond: ['TA' 'Fa' nan 'Gd' 'Po' 'Ex']
Total no.of unique value: 5
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
PavedDrive sum of null values: 0
PavedDrive: ['Y' 'N' 'P']
Total no.of unique value: 3
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
PoolQC sum of null values: 1453
PoolQC: [nan 'Ex' 'Fa' 'Gd']
Total no.of unique value: 3
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
Fence sum of null values: 1179
Fence: [nan 'MnPrv' 'GdWo' 'GdPrv' 'MnWw']
Total no.of unique value: 4
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
MiscFeature sum of null values: 1406
MiscFeature: [nan 'Shed' 'Gar2' 'Othr' 'TenC']
Total no.of unique value: 4
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
SaleType sum of null values: 0
SaleType: ['WD' 'New' 'COD' 'ConLD' 'ConLI' 'CWD' 'ConLw' 'Con' 'Oth']
Total no.of unique value: 9
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
SaleCondition sum of null values: 0
SaleCondition: ['Normal' 'Abnorml' 'Partial' 'AdjLand' 'Alloca' 'Family
']
Total no.of unique value: 6
--------------------------------------------------------------------------------
--------------------------------------------------------------------------
```

In [21]:
```python
cat_data[cat_data.isna().any(axis=1)]
```

Out[21]:

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
0	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
2	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
3	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
4	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
5	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
6	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
7	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
8	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
9	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
10	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
11	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
12	RL	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
13	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
14	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
15	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
16	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
17	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
18	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
19	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
20	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
21	RM	Pave	Grvl	Reg	Bnk	AllPub	Inside	Gtl	
22	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
23	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
24	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
25	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
26	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
27	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
28	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
29	RM	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
30	C (all)	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
31	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
32	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
33	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
34	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
35	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
36	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
37	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
38	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
39	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
40	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
41	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
42	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
43	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
44	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
45	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
46	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
47	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
48	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
49	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
50	RL	Pave	NaN	IR2	Lvl	AllPub	Corner	Gtl	
51	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
52	RM	Grvl	NaN	IR2	Bnk	AllPub	Corner	Mod	
53	RL	Pave	NaN	IR1	Low	AllPub	Inside	Gtl	
54	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Mod	
55	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
56	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
57	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
58	RL	Pave	NaN	IR2	HLS	AllPub	CulDSac	Gtl	
59	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
60	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
61	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
62	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
63	RM	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
64	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
65	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
66	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
67	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
68	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
69	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
70	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
71	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
72	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
73	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
74	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
75	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
76	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
77	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
78	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
79	RM	Pave	Grvl	Reg	Lvl	AllPub	Corner	Gtl	
80	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
81	RM	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
82	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
83	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
84	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
85	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
86	RL	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
87	FV	Pave	Pave	Reg	Lvl	AllPub	Corner	Gtl	
88	C (all)	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
89	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
90	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
91	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
92	RL	Pave	Grvl	IR1	HLS	AllPub	Inside	Gtl	
93	C (all)	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
94	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
95	RL	Pave	NaN	IR2	Lvl	AllPub	Corner	Gtl	
96	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
97	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Gtl	
98	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
99	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
100	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
101	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
102	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
103	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
104	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
105	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
106	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
107	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
108	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
109	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
110	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
111	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
112	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
113	RL	Pave	NaN	Reg	Bnk	AllPub	Corner	Gtl	
114	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Mod	
115	FV	Pave	Pave	Reg	Lvl	AllPub	Corner	Gtl	
116	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
117	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
118	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
119	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
120	RL	Pave	NaN	IR1	Low	AllPub	CulDSac	Sev	
121	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
122	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
123	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
124	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
125	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
126	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
127	RM	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
128	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
129	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
130	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
131	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
132	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
133	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
134	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
135	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
136	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
137	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
138	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
139	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
140	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
141	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
142	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
143	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
144	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
145	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
146	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
147	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
148	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
149	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
150	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
151	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
152	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
153	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
154	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
155	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
156	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
157	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
158	FV	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
159	RL	Pave	NaN	IR1	HLS	AllPub	Corner	Gtl	
160	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
161	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
162	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
163	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
164	RM	Pave	Pave	Reg	Lvl	AllPub	Corner	Gtl	
165	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
166	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
167	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
168	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
169	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
170	RM	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
171	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
172	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
173	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
174	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
175	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
176	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
177	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
178	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
179	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
180	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
181	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
182	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
183	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
184	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
185	RM	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
186	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
187	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
188	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
189	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
190	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Mod	
191	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
192	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
193	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
194	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
195	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
196	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
197	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
198	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
199	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
200	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
201	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
202	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
203	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
204	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
205	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
206	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
207	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
208	RL	Pave	NaN	IR1	Low	AllPub	Inside	Mod	
209	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
210	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
211	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
212	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
213	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
214	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
215	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
216	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
217	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
218	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
219	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
220	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
221	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
222	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
223	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
224	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
225	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
226	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
227	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
228	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
229	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
230	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
231	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
232	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
233	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
234	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
235	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
236	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
237	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
238	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
239	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
240	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
241	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
242	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
243	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
244	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
245	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
246	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
247	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
248	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
249	RL	Pave	NaN	IR2	Low	AllPub	CulDSac	Sev	
250	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
251	RM	Pave	NaN	IR1	HLS	AllPub	Inside	Mod	
252	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
253	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
254	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
255	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
256	FV	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
257	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
258	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
259	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
260	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
261	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
262	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
263	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
264	RM	Pave	Grvl	IR3	Bnk	AllPub	Inside	Gtl	
265	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
266	RL	Pave	NaN	IR1	HLS	AllPub	FR2	Gtl	
267	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Mod	
268	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
269	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
270	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
271	RL	Pave	NaN	IR1	Low	AllPub	CulDSac	Sev	
272	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
273	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
274	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
275	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
276	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
277	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
278	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
279	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
280	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
281	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
282	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
283	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
284	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
285	FV	Pave	Pave	IR1	Lvl	AllPub	Inside	Gtl	
286	RL	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
287	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
288	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
289	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
290	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
291	RL	Pave	Grvl	Reg	Bnk	AllPub	Inside	Gtl	
292	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
293	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
294	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
295	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
296	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
297	FV	Pave	Pave	IR1	Lvl	AllPub	Inside	Gtl	
298	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
299	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
300	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
301	RL	Pave	NaN	IR3	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
302	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
303	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
304	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
305	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
306	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
307	RM	Pave	Grvl	IR1	Lvl	AllPub	Inside	Gtl	
308	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
309	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
310	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
311	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
312	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
313	RL	Pave	NaN	IR3	Low	AllPub	Inside	Sev	
314	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
315	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
316	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
317	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
318	RL	Pave	NaN	Reg	Low	AllPub	Inside	Mod	
319	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
320	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
321	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
322	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
323	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
324	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
325	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
326	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
327	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
328	RL	Pave	Pave	IR1	Bnk	AllPub	Inside	Gtl	
329	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
330	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
331	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
332	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
333	RM	Pave	NaN	Reg	Lvl	AllPub	FR3	Gtl	
334	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
335	RL	Grvl	NaN	IR1	HLS	AllPub	Corner	Sev	
336	RL	Pave	NaN	IR1	HLS	AllPub	Corner	Gtl	
337	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
338	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
339	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
340	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
341	RH	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
342	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
343	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
344	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
345	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
346	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
347	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
348	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
349	RL	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
350	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
351	RL	Pave	NaN	IR1	Low	AllPub	Inside	Mod	
352	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
353	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
354	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
355	RL	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
356	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
357	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
358	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
359	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
360	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
361	RL	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
362	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
363	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
364	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
365	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
366	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
367	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
368	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
369	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
370	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
371	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
372	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
373	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
374	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
375	RL	Pave	NaN	IR1	Low	AllPub	Inside	Sev	
376	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
377	FV	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
378	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
379	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
380	RL	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
381	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
382	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
383	RH	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
384	RL	Pave	NaN	IR2	Low	AllPub	Corner	Mod	
385	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
386	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
387	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
388	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
389	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
390	RL	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
391	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
392	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
393	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
394	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
395	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
396	RL	Pave	NaN	Reg	Low	AllPub	Inside	Gtl	
397	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
398	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
399	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
400	RL	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
401	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
402	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
403	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
404	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
405	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
406	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
407	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
408	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
409	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
410	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
411	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
412	FV	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
413	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
414	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
415	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
416	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
417	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
418	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
419	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
420	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
421	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
422	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Mod	
423	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
424	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
425	RM	Pave	Grvl	Reg	HLS	AllPub	Inside	Gtl	
426	RL	Pave	NaN	Reg	Low	AllPub	Inside	Mod	
427	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
428	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
429	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
430	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
431	RM	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
432	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
433	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
434	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
435	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
436	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
437	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
438	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
439	RL	Pave	Grvl	Reg	Lvl	AllPub	Corner	Gtl	
440	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
441	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
442	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
443	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
444	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
445	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
446	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
447	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
448	RM	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
449	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
450	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
451	RL	Pave	NaN	IR1	Low	AllPub	Inside	Mod	
452	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
453	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
454	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
455	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
456	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
457	RL	Pave	NaN	IR1	Low	AllPub	CulDSac	Mod	
458	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
459	RL	Pave	NaN	IR1	Bnk	AllPub	Corner	Gtl	
460	FV	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
461	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
462	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
463	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Mod	
464	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Mod	
465	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
466	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
467	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
468	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
469	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
470	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
471	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
472	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
473	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
474	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
475	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
476	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
477	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
478	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
479	RM	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
480	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
481	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
482	RM	Pave	Pave	Reg	Lvl	AllPub	Corner	Gtl	
483	RM	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
484	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
485	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
486	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
487	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
488	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
489	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
490	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
491	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
492	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
493	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
494	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
495	C (all)	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
496	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
497	RL	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
498	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
499	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
500	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
501	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
502	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
503	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
504	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
505	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
506	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
507	FV	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
508	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
509	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
510	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
511	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
512	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
513	RL	Pave	NaN	Reg	Bnk	AllPub	Corner	Gtl	
514	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
515	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
516	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
517	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
518	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
519	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
520	RL	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
521	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
522	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
523	RL	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
524	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
525	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
526	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
527	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
528	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
529	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
530	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
531	RM	Pave	NaN	IR1	Lvl	AllPub	FR3	Gtl	
532	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
533	RL	Pave	NaN	Reg	Low	AllPub	Inside	Mod	
534	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
535	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
536	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
537	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
538	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
539	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
540	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
541	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
542	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
543	RH	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
544	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
545	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
546	RL	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
547	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
548	RM	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
549	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
550	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
551	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
552	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
553	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
554	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
555	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
556	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
557	C (all)	Pave	NaN	Reg	Low	AllPub	Inside	Mod	
558	RL	Pave	NaN	IR2	HLS	AllPub	FR2	Gtl	
559	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
560	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
561	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
562	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
563	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
564	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
565	RL	Pave	NaN	Reg	Bnk	AllPub	Corner	Gtl	
566	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
567	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
568	RL	Pave	NaN	IR1	Low	AllPub	Inside	Mod	
569	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
570	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
571	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
572	RL	Pave	NaN	IR1	HLS	AllPub	Corner	Gtl	
573	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
574	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
575	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
576	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
577	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
578	FV	Pave	Pave	Reg	Lvl	AllPub	Corner	Gtl	
579	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
580	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
581	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
582	RL	Grvl	NaN	Reg	Lvl	AllPub	Inside	Gtl	
583	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
584	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
585	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
586	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
587	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
588	RL	Pave	NaN	IR1	Low	AllPub	Inside	Sev	
589	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
590	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
591	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
592	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
593	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
594	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
595	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
596	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
597	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
598	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
599	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
600	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
601	RM	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
602	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
603	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
604	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
605	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
606	RL	Pave	NaN	IR2	Low	AllPub	Corner	Mod	
607	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Mod	
608	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Mod	
609	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
610	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
611	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
612	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
613	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
614	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
615	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
616	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
617	RL	Pave	NaN	Reg	HLS	AllPub	Corner	Mod	
618	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
619	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
620	RL	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
621	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
622	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
623	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
624	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
625	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
626	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
627	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
628	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Sev	
629	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
630	RM	Pave	Grvl	Reg	Lvl	AllPub	Corner	Gtl	
631	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
632	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
633	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
634	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
635	RH	Pave	Pave	Reg	Bnk	AllPub	Inside	Gtl	
636	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
637	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
638	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
639	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
640	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
641	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
642	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
643	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
644	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
645	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
646	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
647	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
648	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
649	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
650	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
651	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
652	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
653	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
654	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
655	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
656	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
657	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Mod	
658	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
659	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
660	RL	Pave	NaN	Reg	Lvl	AllPub	CulDSac	Gtl	
661	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
662	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
663	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
664	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
665	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
666	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
667	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
668	RL	Pave	NaN	Reg	Bnk	AllPub	Corner	Mod	
669	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
670	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
671	RH	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
672	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
673	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
674	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
675	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
676	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
677	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
678	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
679	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
680	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
681	RH	Pave	Pave	IR2	Bnk	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
682	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Gtl	
683	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
684	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
685	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
686	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
687	FV	Pave	NaN	IR2	Lvl	AllPub	FR2	Gtl	
688	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Gtl	
689	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
690	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
691	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
692	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Mod	
693	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Sev	
694	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
695	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
696	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
697	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
698	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
699	FV	Pave	Pave	IR2	Lvl	AllPub	Inside	Gtl	
700	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
701	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
702	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
703	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
704	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
705	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
706	RL	Pave	NaN	IR2	Low	AllPub	CulDSac	Sev	
707	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
708	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
709	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
710	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
711	C (all)	Pave	Pave	Reg	HLS	AllPub	Inside	Mod	
712	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
713	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
714	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
715	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
716	RM	Pave	Grvl	Reg	Bnk	AllPub	Inside	Gtl	
717	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
718	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
719	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
720	RL	Pave	NaN	IR1	Low	AllPub	CulDSac	Mod	
721	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
722	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
723	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
724	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
725	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
726	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
727	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
728	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
729	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
730	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
731	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
732	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
733	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
734	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
735	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
736	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
737	RL	Pave	NaN	IR1	HLS	AllPub	CulDSac	Gtl	
738	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
739	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
740	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
741	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
742	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
743	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
744	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
745	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
746	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
747	RM	Pave	Pave	IR1	Lvl	AllPub	Corner	Gtl	
748	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
749	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
750	RM	Pave	Grvl	Reg	Lvl	AllPub	Corner	Gtl	
751	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
752	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
753	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
754	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
755	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
756	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
757	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
758	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
759	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
760	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
761	RM	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
762	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
763	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
764	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
765	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
766	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
767	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
768	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
769	RL	Pave	NaN	IR2	HLS	AllPub	CulDSac	Mod	
770	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
771	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
772	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
773	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
774	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
775	RM	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
776	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
777	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
778	RH	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
779	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
780	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
781	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
782	RL	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
783	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
784	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
785	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
786	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
787	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
788	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
789	RL	Pave	NaN	IR1	Low	AllPub	Inside	Gtl	
790	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
791	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
792	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
793	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
794	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
795	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
796	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
797	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
798	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
799	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
800	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Mod	
801	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
802	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
803	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
804	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
805	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
806	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
807	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
808	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
809	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
810	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
811	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
812	C (all)	Grvl	NaN	Reg	Bnk	AllPub	Inside	Mod	
813	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
814	RL	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
815	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
816	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
817	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
818	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
819	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
820	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
821	RM	Pave	Pave	Reg	Bnk	AllPub	Inside	Mod	
822	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
823	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
824	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
825	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
826	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
827	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
828	RL	Pave	NaN	IR2	Low	AllPub	CulDSac	Sev	
829	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
830	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
831	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
832	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
833	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
834	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
835	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
836	RM	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
837	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
838	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
839	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
840	RH	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
841	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
842	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
843	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
844	RM	Pave	Grvl	IR1	Lvl	AllPub	Inside	Gtl	
845	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
846	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
847	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
848	RL	Pave	NaN	IR2	Bnk	AllPub	Inside	Gtl	
849	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
850	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
851	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
852	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
853	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
854	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
855	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
856	RL	Pave	NaN	IR1	Low	AllPub	Inside	Mod	
857	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
858	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
859	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
860	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
861	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
862	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
863	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
864	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
865	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
866	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
867	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
868	RL	Pave	NaN	IR2	Lvl	AllPub	Corner	Gtl	
869	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
870	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
871	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
872	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
873	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
874	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
875	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
876	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Mod	
877	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
878	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
879	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
880	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
881	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
882	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
883	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
884	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
885	FV	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
886	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
887	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
888	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Mod	
889	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
890	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
891	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
892	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
893	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
894	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
895	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
896	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
897	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
898	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
899	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
900	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
901	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
902	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
903	RL	Pave	NaN	IR1	HLS	AllPub	CulDSac	Gtl	
904	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
905	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
906	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
907	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
908	RL	Pave	NaN	IR1	Low	AllPub	Inside	Mod	
909	RL	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
910	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
911	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Mod	
912	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
913	RH	Pave	NaN	Reg	HLS	AllPub	Inside	Gtl	
914	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
915	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
916	C (all)	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
917	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
918	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
919	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
920	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
921	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
922	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
923	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
924	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
925	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
926	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
927	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
928	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
929	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
930	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
931	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
932	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
933	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
934	RL	Pave	NaN	IR2	HLS	AllPub	Inside	Mod	
935	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
936	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
937	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
938	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
939	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
940	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
941	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
942	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
943	RL	Pave	NaN	Reg	Low	AllPub	Inside	Gtl	
944	RL	Pave	NaN	IR1	Lvl	NoSeWa	CulDSac	Gtl	
945	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
946	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
947	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
948	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
949	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
950	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
951	RH	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
952	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
953	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Mod	
954	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
955	RH	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
956	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
957	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
958	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
959	FV	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
960	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
961	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
962	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
963	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
964	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
965	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
966	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
967	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
968	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
969	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
970	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
971	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
972	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
973	FV	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
974	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
975	FV	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
976	RL	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
977	FV	Pave	Pave	IR1	Lvl	AllPub	Inside	Gtl	
978	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Mod	
979	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
980	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
981	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
982	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
983	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
984	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
985	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
986	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
987	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
988	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
989	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
990	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
991	RM	Pave	Grvl	Reg	Lvl	AllPub	Corner	Gtl	
992	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
993	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
994	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
995	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Mod	
996	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
997	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
998	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
999	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1000	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1001	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1002	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1003	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1004	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1005	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1006	RL	Pave	NaN	IR3	Lvl	AllPub	Inside	Gtl	
1007	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1008	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1009	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1010	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1011	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1012	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1013	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1014	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
1015	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1016	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1017	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1018	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
1019	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1020	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1021	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1022	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1023	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1024	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1025	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1026	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1027	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
1028	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1029	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1030	RH	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1031	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1032	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1033	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1034	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
1035	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1036	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
1037	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1038	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1039	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1040	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1041	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1042	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1043	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1044	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1045	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1046	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1047	RL	Pave	NaN	IR2	Lvl	AllPub	Inside	Gtl	
1048	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1049	RL	Pave	NaN	Reg	Low	AllPub	Inside	Gtl	
1050	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1051	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1052	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1053	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
1054	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1055	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1056	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1057	RL	Pave	NaN	IR2	Lvl	AllPub	FR2	Gtl	
1058	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1059	RL	Pave	NaN	IR1	HLS	AllPub	Corner	Mod	
1060	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1061	C (all)	Grvl	NaN	Reg	Low	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1062	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1063	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1064	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1065	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
1066	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1067	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
1068	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1069	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1070	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1071	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1072	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1073	RL	Pave	NaN	IR1	Bnk	AllPub	Corner	Gtl	
1074	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1075	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1076	RL	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1077	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1078	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1079	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1080	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1081	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1082	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1083	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1084	RL	Pave	NaN	IR2	Lvl	AllPub	Corner	Gtl	
1085	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1086	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1087	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1088	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1089	FV	Pave	Pave	IR1	Lvl	AllPub	Inside	Gtl	
1090	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1091	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
1092	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
1093	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1094	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1095	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1096	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1097	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1098	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1099	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1100	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
1101	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1102	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1103	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1104	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1105	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1106	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1107	RL	Pave	NaN	IR3	HLS	AllPub	CulDSac	Gtl	
1108	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1109	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1110	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1111	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1112	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1113	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1114	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1115	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1116	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1117	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
1118	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1119	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1120	RM	Pave	NaN	Reg	Bnk	AllPub	Inside	Mod	
1121	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1122	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1123	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1124	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1125	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1126	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1127	RL	Pave	NaN	IR3	Lvl	AllPub	Corner	Gtl	
1128	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1129	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1130	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1131	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1132	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1133	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1134	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
1135	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1136	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1137	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1138	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Mod	
1139	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1140	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1141	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1142	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1143	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1144	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1145	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1146	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1147	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
1148	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1149	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1150	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1151	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1152	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1153	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1154	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1155	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1156	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1157	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1158	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
1159	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1160	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1161	RL	Pave	NaN	IR1	Low	AllPub	CulDSac	Gtl	
1162	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1163	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1164	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
1165	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1166	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1167	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1168	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1169	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1170	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1171	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1172	FV	Pave	Pave	IR1	Lvl	AllPub	Inside	Gtl	
1173	RL	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
1174	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1175	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1176	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1177	RM	Pave	Grvl	Reg	Bnk	AllPub	Inside	Gtl	
1178	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
1179	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1180	RL	Pave	NaN	IR2	Lvl	AllPub	Corner	Gtl	
1181	RM	Pave	NaN	IR1	HLS	AllPub	Inside	Mod	
1182	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1183	RL	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1184	RL	Grvl	NaN	Reg	Lvl	AllPub	Inside	Mod	
1185	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1186	RL	Pave	NaN	IR1	Bnk	AllPub	Corner	Mod	
1187	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1188	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1189	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1190	RL	Pave	NaN	Reg	Low	AllPub	Inside	Mod	
1191	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
1192	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1193	RM	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
1194	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1195	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1196	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1197	RM	Pave	NaN	IR1	Bnk	AllPub	Corner	Gtl	
1198	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1199	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1200	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1201	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1202	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1203	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1204	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1205	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1206	RH	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1207	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1208	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1209	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1210	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1211	RL	Pave	NaN	IR1	Bnk	AllPub	Inside	Mod	
1212	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1213	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1214	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1215	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1216	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1217	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1218	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1219	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1220	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1221	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1222	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1223	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1224	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1225	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1226	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1227	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1228	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1229	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1230	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1231	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1232	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
1233	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1234	RH	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
1235	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1236	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1237	RL	Pave	NaN	IR2	Lvl	AllPub	FR2	Gtl	
1238	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1239	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
1240	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1241	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1242	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1243	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1244	RL	Pave	NaN	IR1	HLS	AllPub	Corner	Mod	
1245	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1246	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1247	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1248	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1249	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1250	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1251	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1252	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1253	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1254	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1255	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1256	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1257	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1258	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1259	RL	Pave	NaN	Reg	Lvl	AllPub	FR2	Gtl	
1260	RL	Pave	NaN	IR3	Lvl	AllPub	CulDSac	Gtl	
1261	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1262	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1263	RL	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
1264	RH	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1265	FV	Pave	NaN	Reg	Lvl	AllPub	FR3	Gtl	
1266	RM	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
1267	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
1268	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Mod	
1269	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1270	RL	Pave	NaN	Reg	Low	AllPub	Inside	Sev	
1271	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1272	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1273	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1274	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1275	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1276	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1277	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1278	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1279	C (all)	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1280	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1281	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1282	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1283	RL	Pave	NaN	Reg	Low	AllPub	Corner	Gtl	
1284	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1285	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1286	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1287	RL	Pave	NaN	IR1	Low	AllPub	Inside	Mod	
1288	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1289	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1290	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1291	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1292	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1293	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1294	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1295	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1296	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1297	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1298	RL	Pave	NaN	IR3	Bnk	AllPub	Corner	Gtl	
1299	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1300	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1301	RL	Pave	NaN	IR1	Bnk	AllPub	Inside	Gtl	
1302	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1303	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1304	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
1305	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1306	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1307	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1308	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1309	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1310	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1311	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1312	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1313	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1314	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1315	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1316	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1317	FV	Pave	Pave	Reg	Lvl	AllPub	Corner	Gtl	
1318	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
1319	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
1320	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1321	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1322	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1323	RL	Pave	NaN	Reg	HLS	AllPub	Inside	Gtl	
1324	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1325	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1326	RH	Pave	NaN	Reg	Bnk	AllPub	Inside	Mod	
1327	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1328	RM	Pave	Grvl	Reg	Lvl	AllPub	Corner	Gtl	
1329	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1330	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1331	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1332	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Mod	
1333	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1334	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1335	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1336	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1337	RM	Pave	Grvl	IR1	Bnk	AllPub	Corner	Mod	
1338	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1339	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1340	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1341	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1342	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1343	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
1344	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1345	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1346	RL	Pave	NaN	IR2	Lvl	AllPub	CulDSac	Gtl	
1347	RL	Pave	NaN	IR1	HLS	AllPub	Corner	Gtl	
1348	RL	Pave	NaN	IR3	Low	AllPub	Inside	Gtl	
1349	RM	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
1350	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1351	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1352	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1353	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1354	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1355	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1356	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1357	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	
1358	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1359	RL	Pave	NaN	Reg	Lvl	AllPub	FR3	Gtl	
1360	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1361	RL	Pave	NaN	IR1	Low	AllPub	Inside	Mod	
1362	RL	Pave	NaN	IR1	Lvl	AllPub	FR2	Gtl	
1363	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1364	FV	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
1365	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	

	MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N
1366	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1367	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1368	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1369	RL	Pave	NaN	IR2	Lvl	AllPub	FR2	Gtl	
1370	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1371	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1372	RL	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1373	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1374	FV	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1375	RL	Pave	NaN	IR1	HLS	AllPub	Inside	Gtl	
1376	RL	Pave	NaN	Reg	Bnk	AllPub	Inside	Gtl	
1377	RL	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1378	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1379	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1380	RL	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1381	RL	Pave	NaN	IR1	Lvl	AllPub	Corner	Gtl	
1382	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1383	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1384	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1385	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1386	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1387	RM	Pave	Grvl	Reg	Lvl	AllPub	Inside	Gtl	
1388	RL	Pave	NaN	IR1	HLS	AllPub	CulDSac	Gtl	
1389	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1390	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1391	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1392	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1393	RM	Pave	Pave	Reg	Lvl	AllPub	Inside	Gtl	
1394	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1395	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1396	RL	Pave	NaN	IR1	Bnk	AllPub	Inside	Sev	
1397	RM	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1398	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1399	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1400	RM	Pave	NaN	Reg	Lvl	AllPub	Corner	Gtl	
1401	RL	Pave	NaN	IR1	Lvl	AllPub	Inside	Gtl	
1402	RL	Pave	NaN	Reg	Lvl	AllPub	Inside	Gtl	
1403	RL	Pave	NaN	IR1	Lvl	AllPub	CulDSac	Gtl	

MSZoning	Street	Alley	LotShape	LandContour	Utilities	LotConfig	LandSlope	N

In [22]:
```python
cat_data['Alley'] = cat_data['Alley'].fillna('No alley access')
```

In [23]:
```python
cat_data['MasVnrType'] = cat_data['MasVnrType'].fillna('None')
```

In [24]:
```python
cat_data['BsmtQual']  = cat_data['BsmtQual'].fillna('No Basement')
```

In [25]:
```python
cat_data['BsmtCond']  = cat_data['BsmtCond'].fillna('No Basement')
cat_data['BsmtExposure']  = cat_data['BsmtExposure'].fillna('No Basement')
cat_data['BsmtFinType1']  = cat_data['BsmtFinType1'].fillna('No Basement')
cat_data['BsmtFinType2']  = cat_data['BsmtFinType2'].fillna('No Basement')
cat_data['BsmtCond']  = cat_data['BsmtCond'].fillna('No Basement')
```

In [26]:
```python
cat_data['FireplaceQu']  = cat_data['FireplaceQu'].fillna('No Fireplace')
```

In [27]:
```python
cat_data['GarageType']  = cat_data['GarageType'].fillna('No Garage')
```

In [28]:
```python
cat_data['GarageFinish']  = cat_data['GarageFinish'].fillna('No Garage')
cat_data['GarageQual']  = cat_data['GarageQual'].fillna('No Garage')
cat_data['GarageCond']  = cat_data['GarageCond'].fillna('No Garage')
```

In [29]:
```python
cat_data['PoolQC']  = cat_data['PoolQC'].fillna('No Pool')
cat_data['Fence']  = cat_data['Fence'].fillna('No Fence')
cat_data['MiscFeature']  = cat_data['MiscFeature'].fillna('None')
```

In [30]:
```python
cat_data['Electrical']  = cat_data['Electrical'].fillna('None')
```

In [31]: `cat_data.isnull().sum()`

Out[31]:
```
MSZoning          0
Street            0
Alley             0
LotShape          0
LandContour       0
Utilities         0
LotConfig         0
LandSlope         0
Neighborhood      0
Condition1        0
Condition2        0
BldgType          0
HouseStyle        0
RoofStyle         0
RoofMatl          0
Exterior1st       0
Exterior2nd       0
MasVnrType        0
ExterQual         0
ExterCond         0
Foundation        0
BsmtQual          0
BsmtCond          0
BsmtExposure      0
BsmtFinType1      0
BsmtFinType2      0
Heating           0
HeatingQC         0
CentralAir        0
Electrical        0
KitchenQual       0
Functiol          0
FireplaceQu       0
GarageType        0
GarageFinish      0
GarageQual        0
GarageCond        0
PavedDrive        0
PoolQC            0
Fence             0
MiscFeature       0
SaleType          0
SaleCondition     0
dtype: int64
```

```
In [32]: cat_data.columns
```

```
Out[32]: Index(['MSZoning', 'Street', 'Alley', 'LotShape', 'LandContour', 'Utilit
         ies',
                'LotConfig', 'LandSlope', 'Neighborhood', 'Condition1', 'Conditio
         n2',
                'BldgType', 'HouseStyle', 'RoofStyle', 'RoofMatl', 'Exterior1st',
                'Exterior2nd', 'MasVnrType', 'ExterQual', 'ExterCond', 'Foundatio
         n',
                'BsmtQual', 'BsmtCond', 'BsmtExposure', 'BsmtFinType1', 'BsmtFinT
         ype2',
                'Heating', 'HeatingQC', 'CentralAir', 'Electrical', 'KitchenQual
         ',
                'Functiol', 'FireplaceQu', 'GarageType', 'GarageFinish', 'GarageQ
         ual',
                'GarageCond', 'PavedDrive', 'PoolQC', 'Fence', 'MiscFeature',
                'SaleType', 'SaleCondition'],
               dtype='object')
```

In [57]:
```python
for column in cat_data.columns:
    plt.figure(figsize=(10,5))
    sns.countplot(data=cat_data,x=column)
    plt.xticks(x=column,rotation='vertical')
    plt.tight_layout()
```
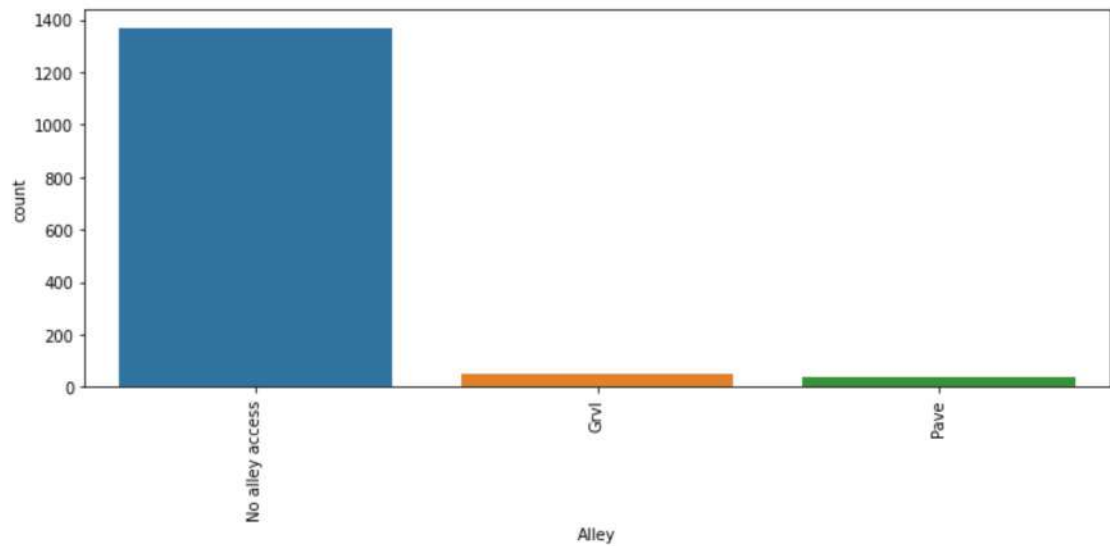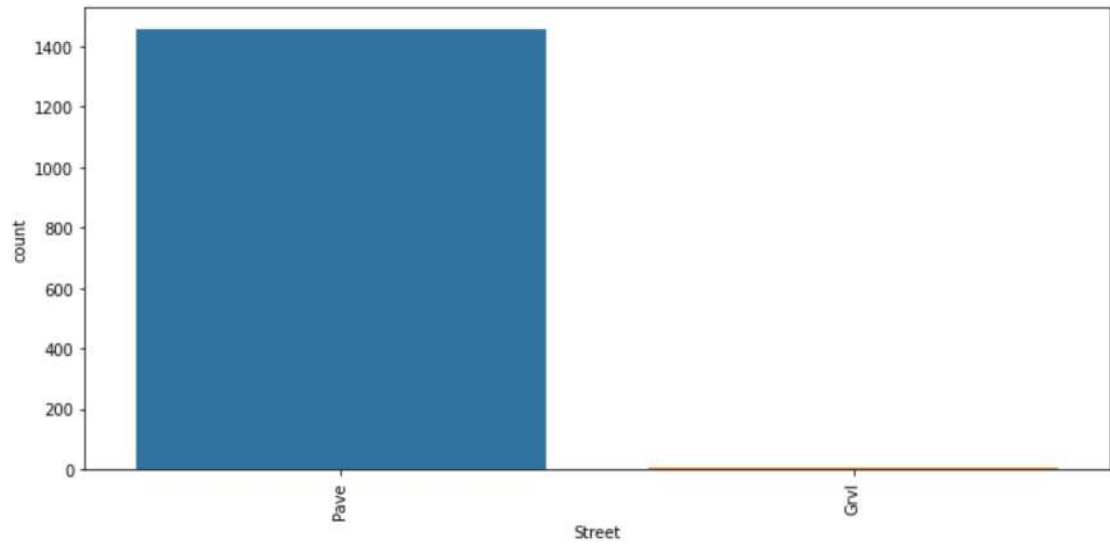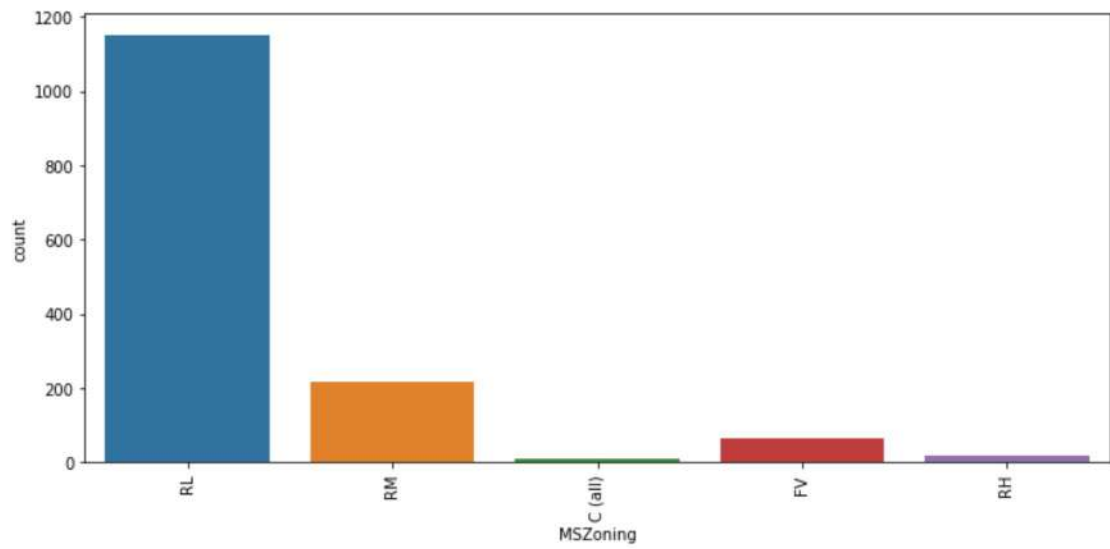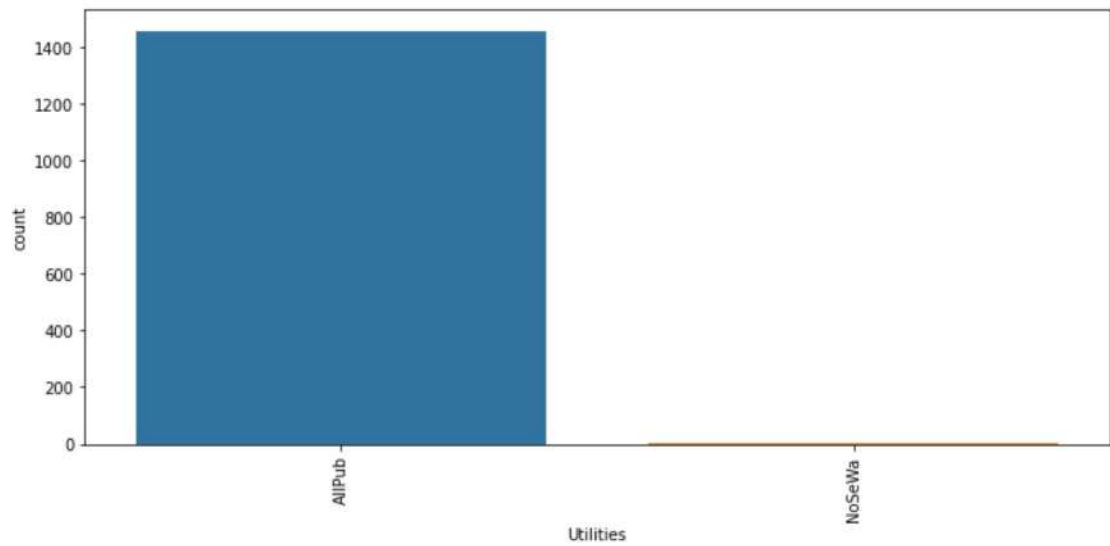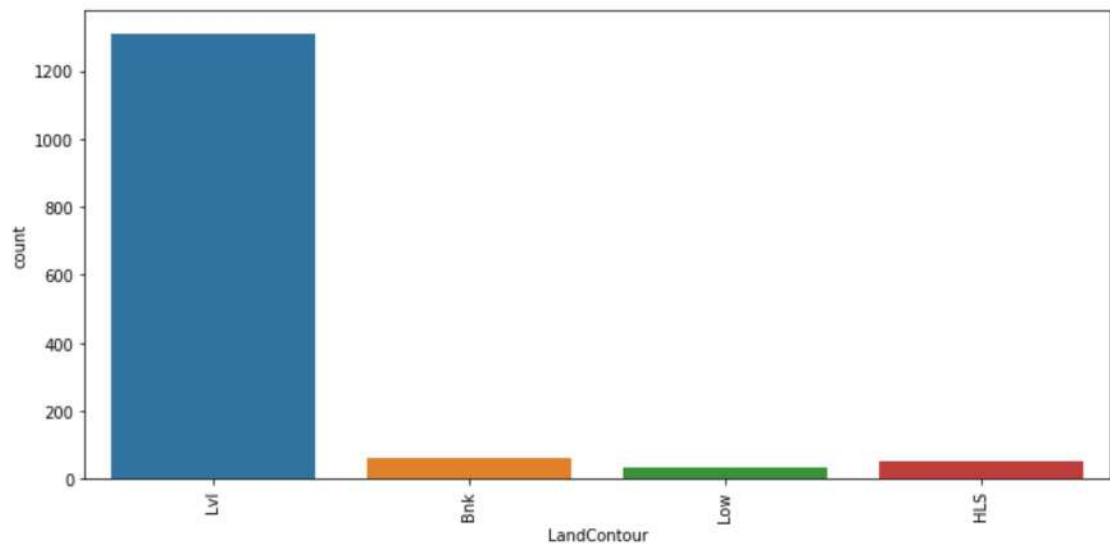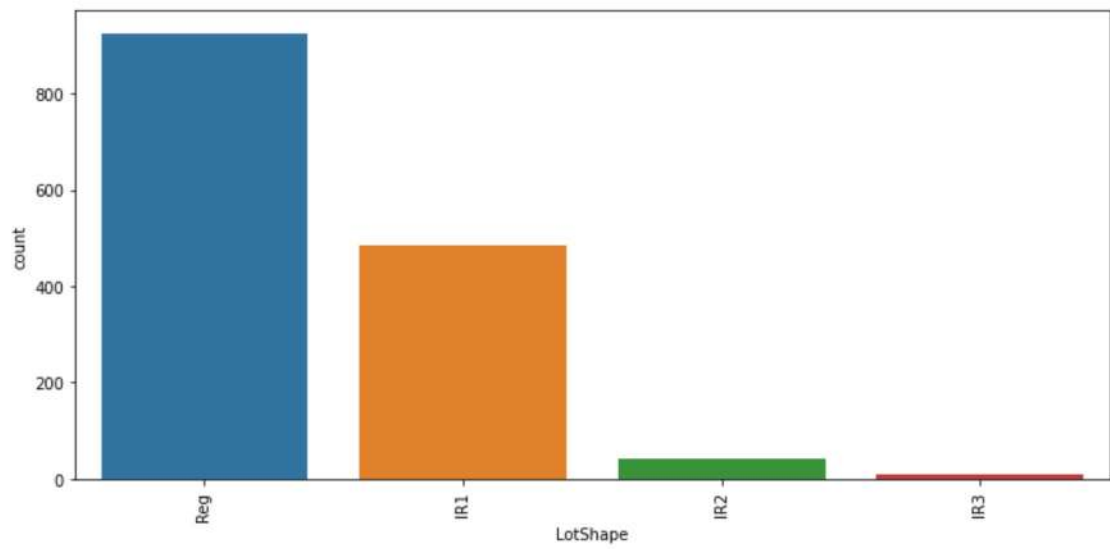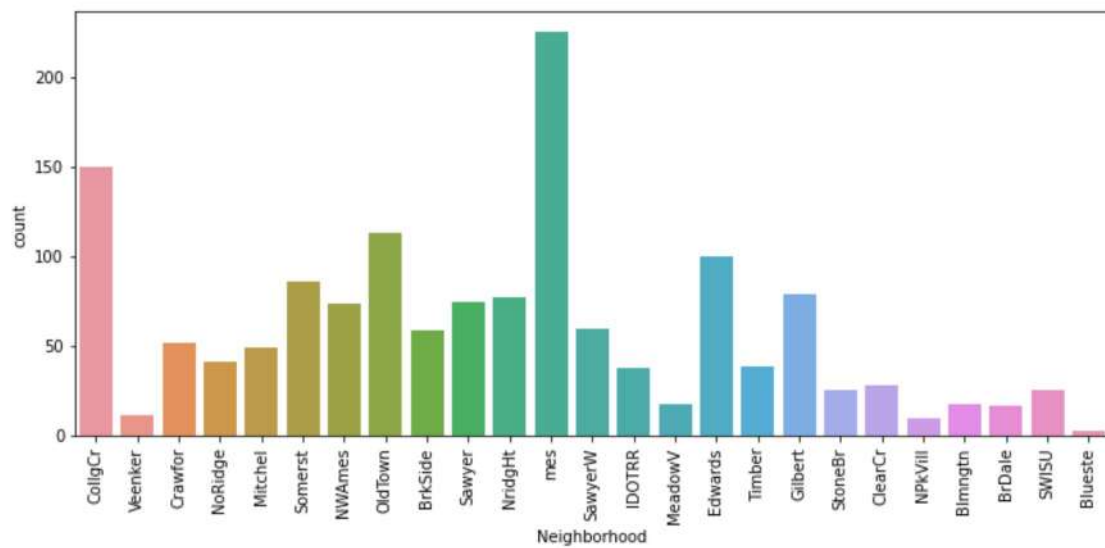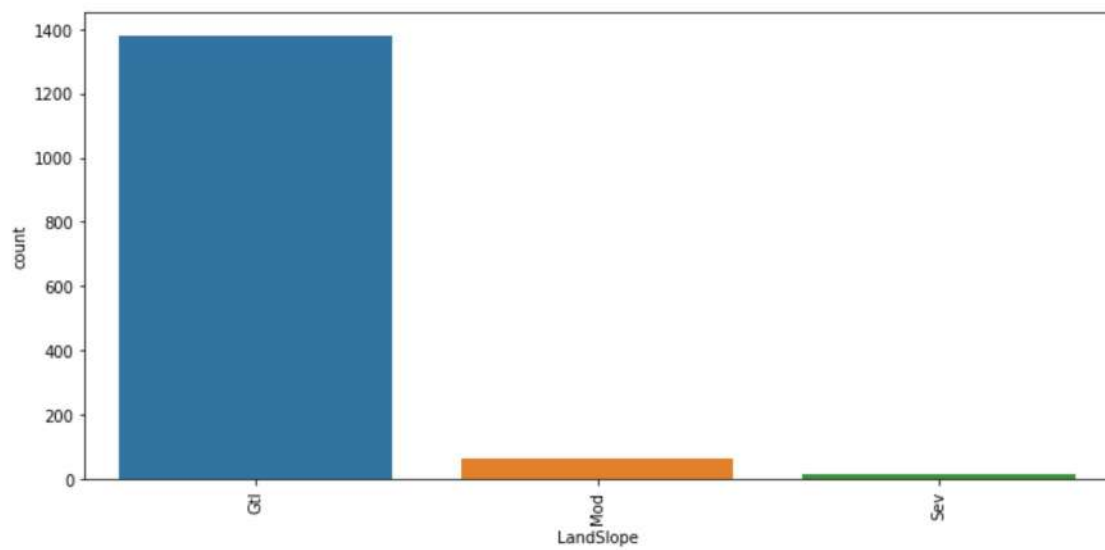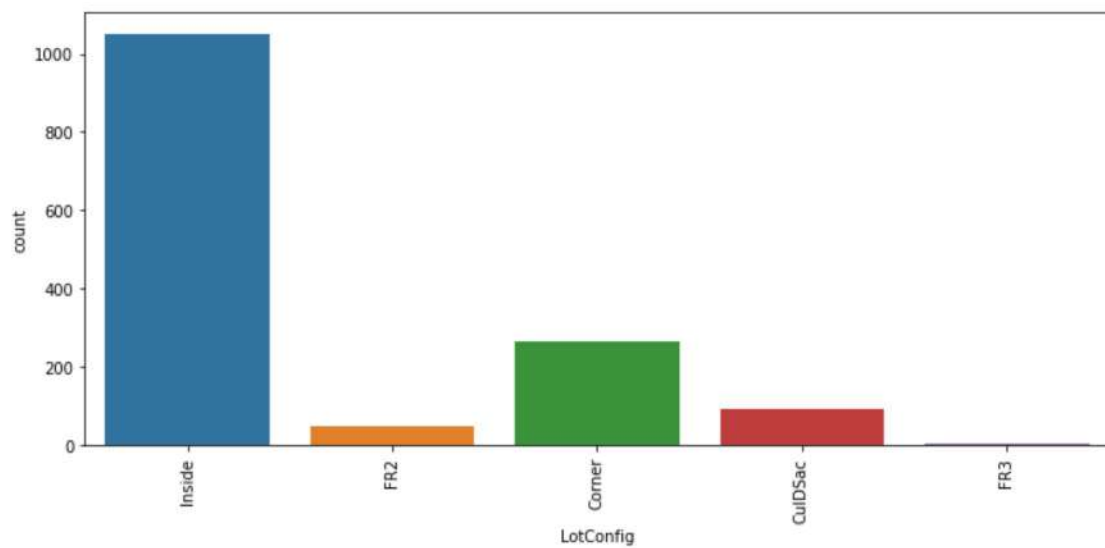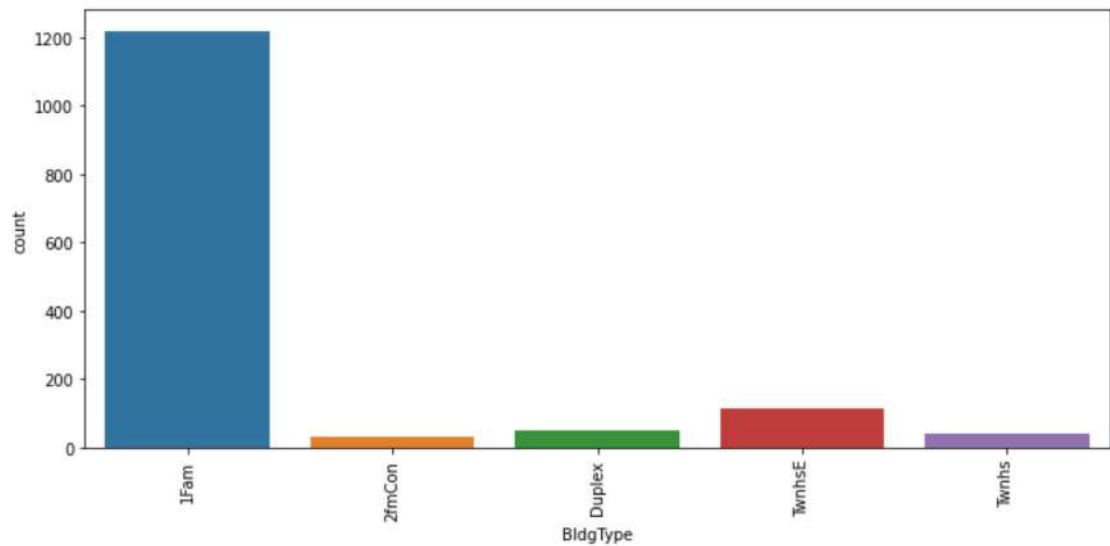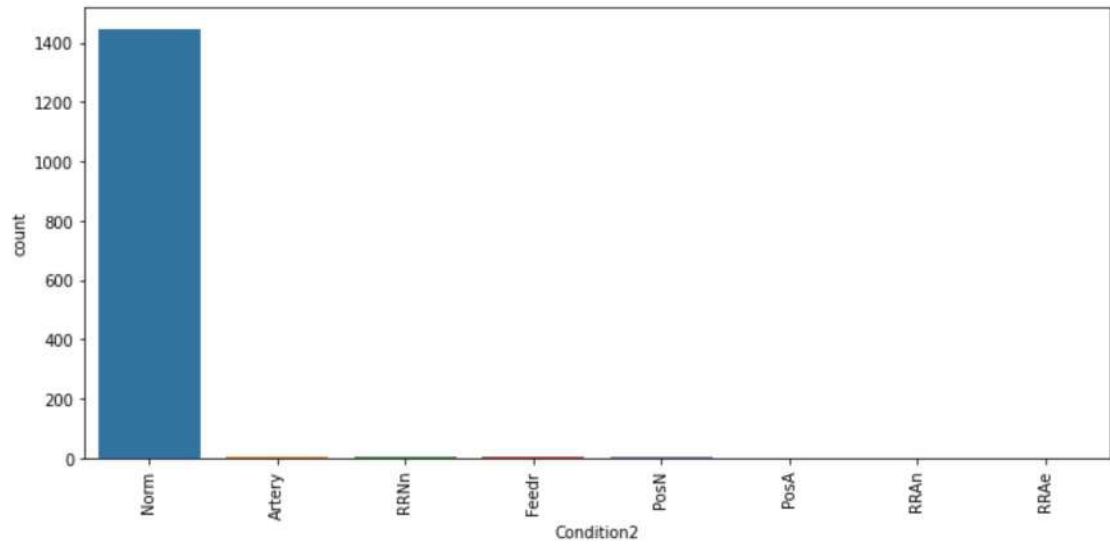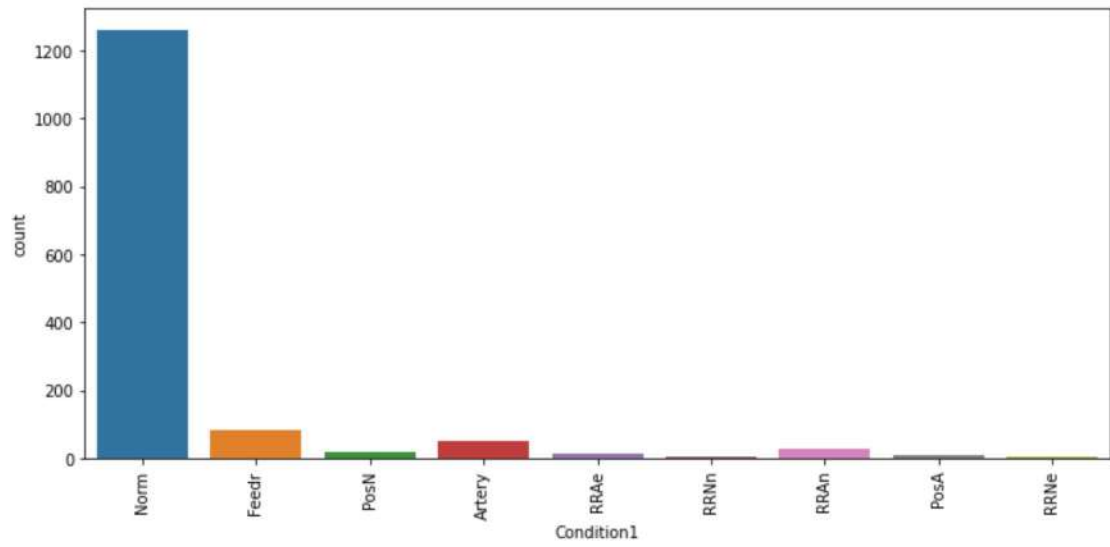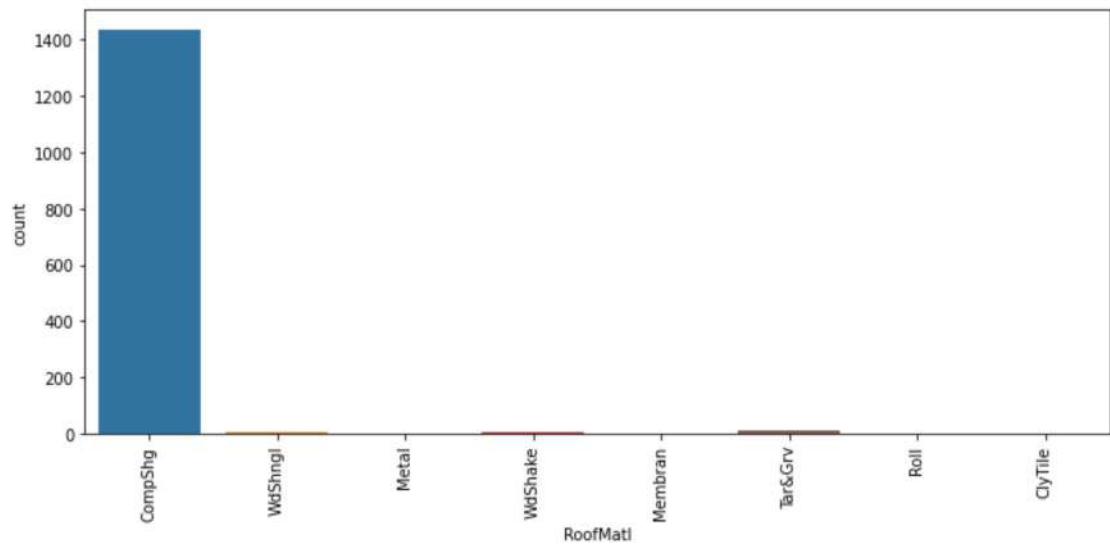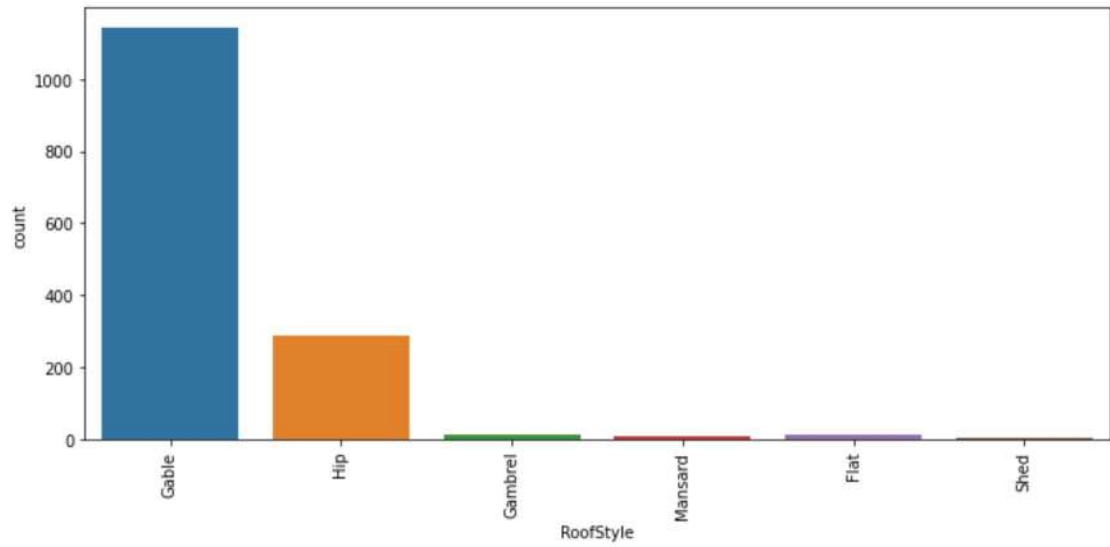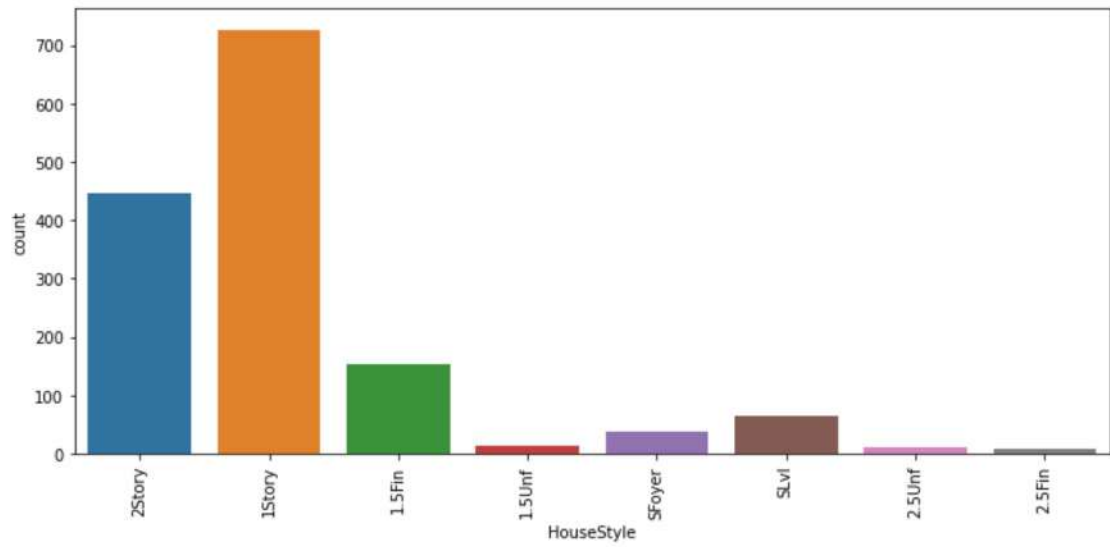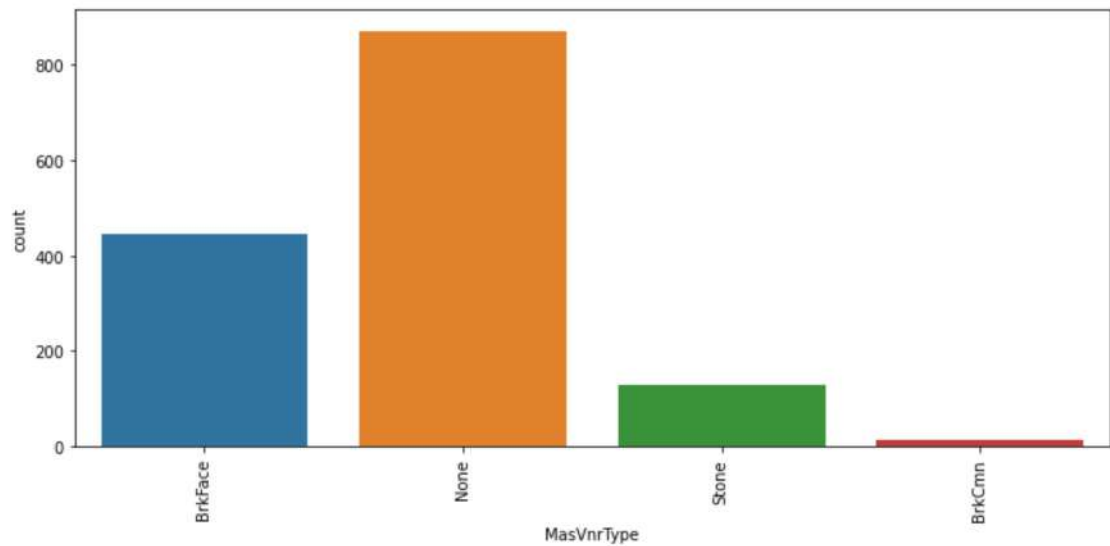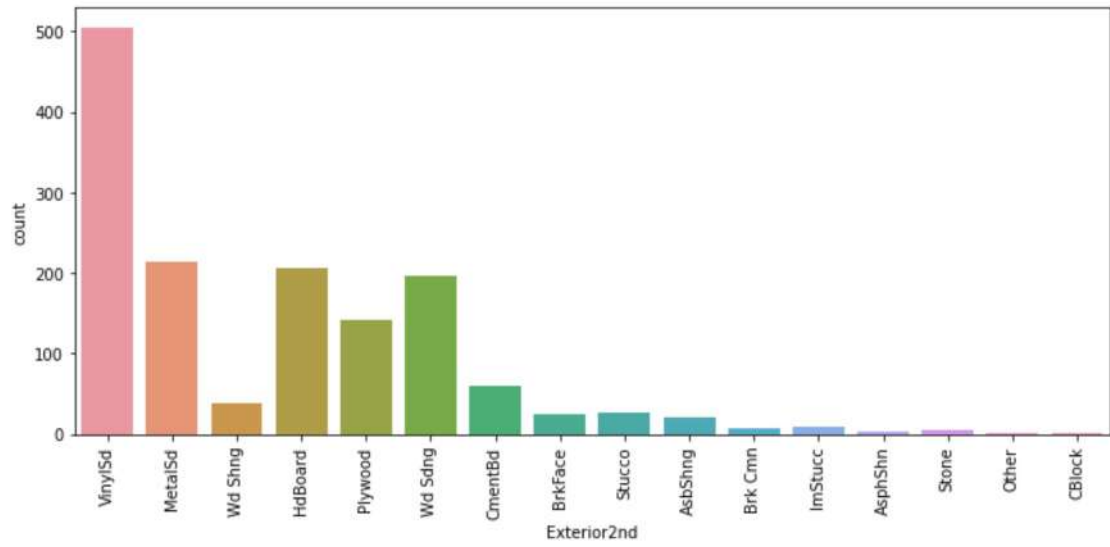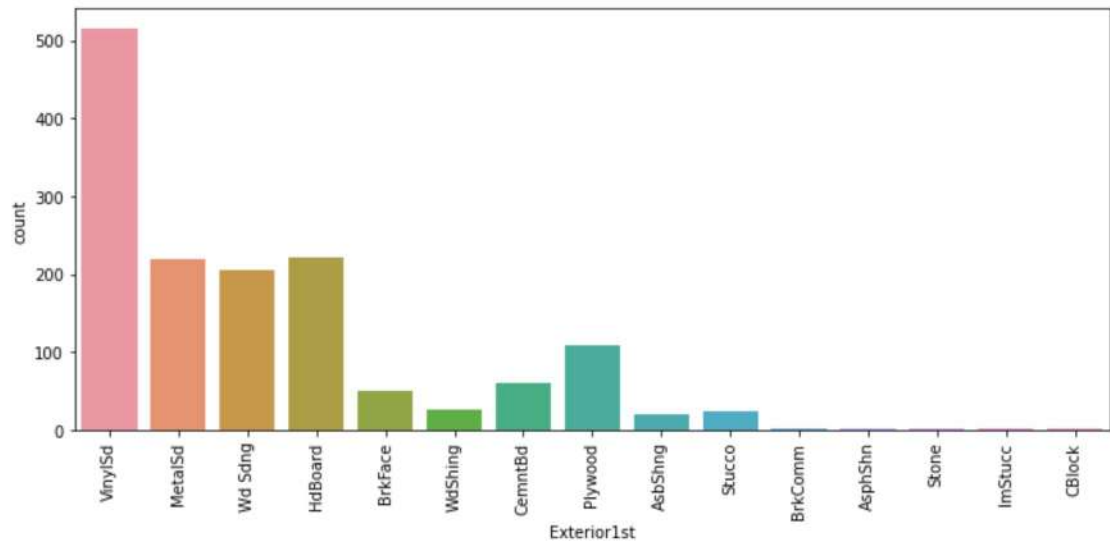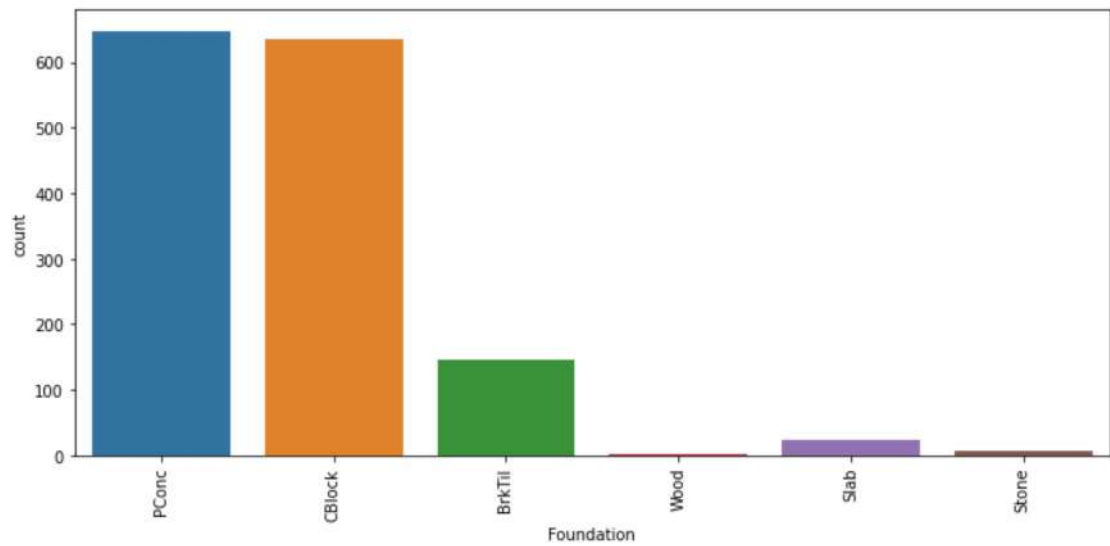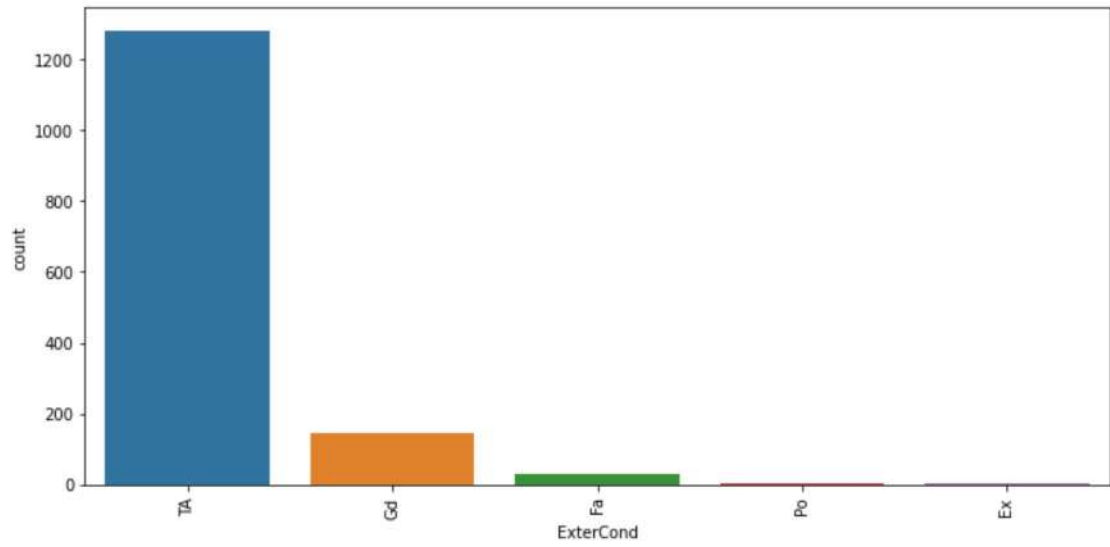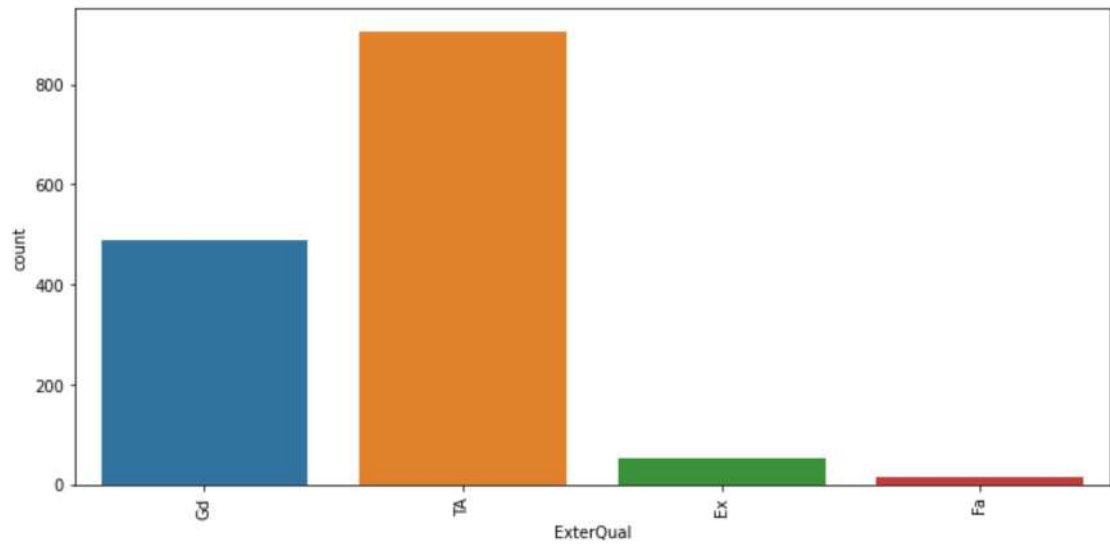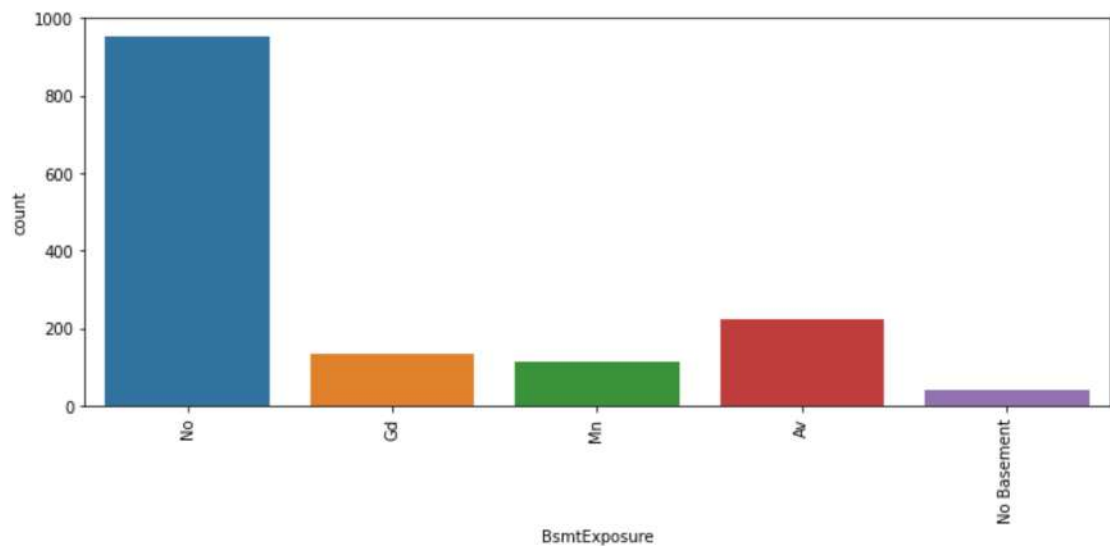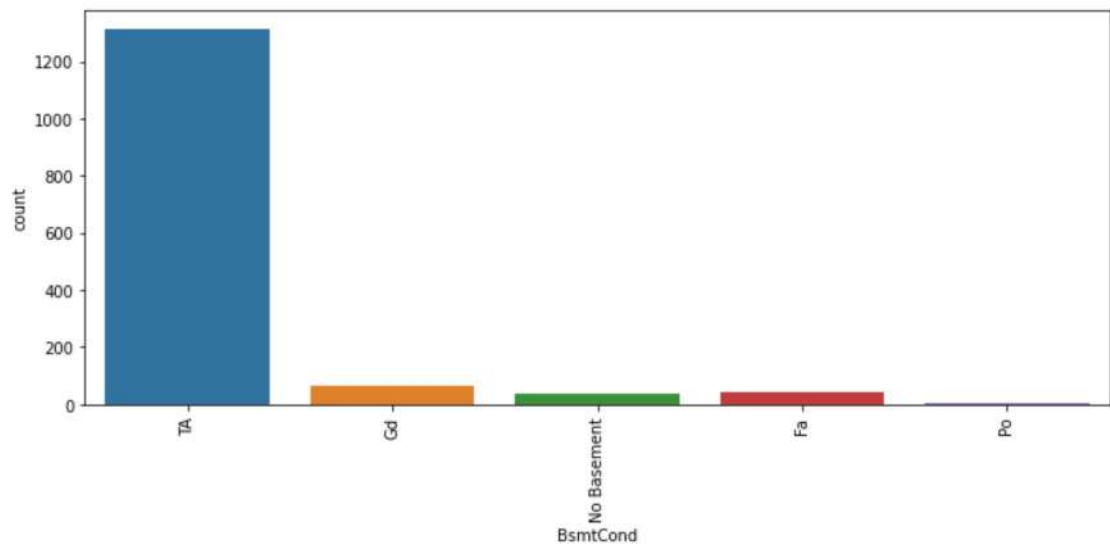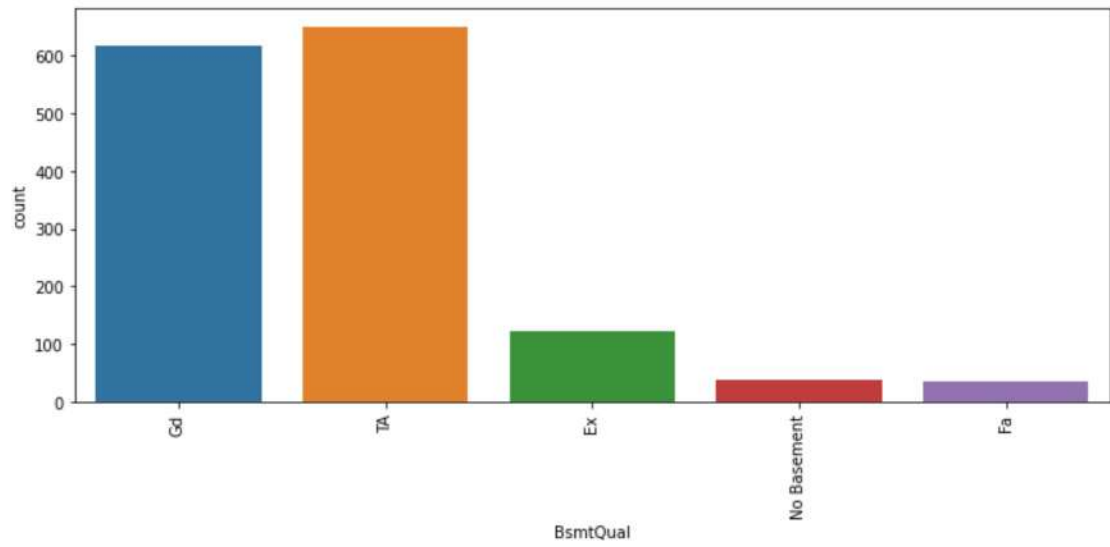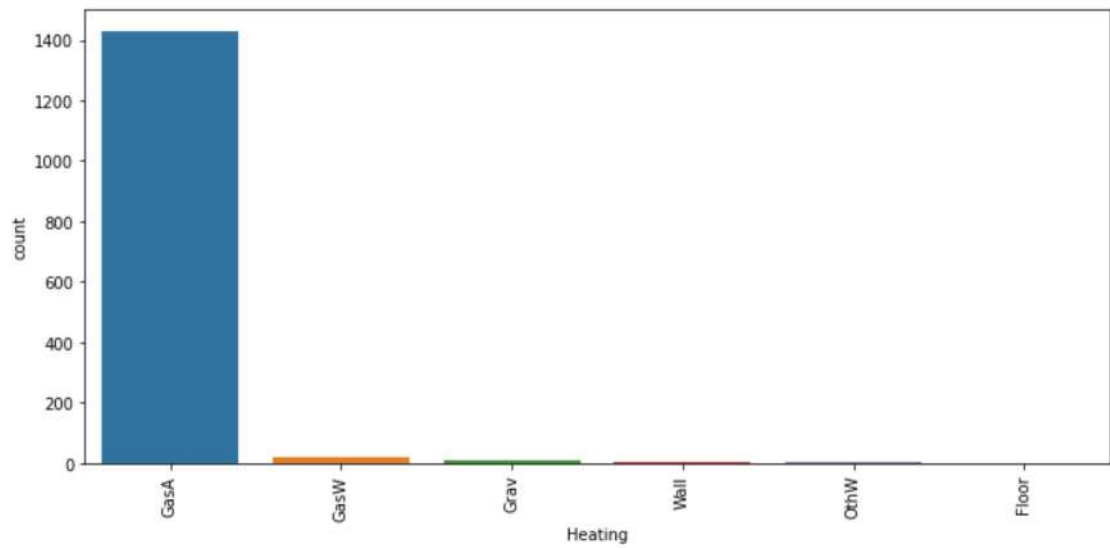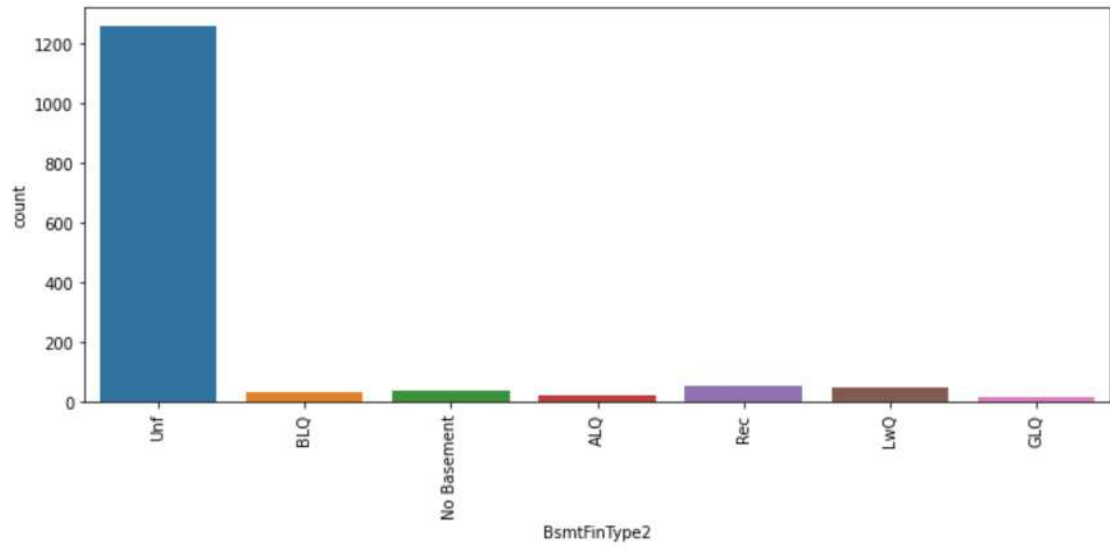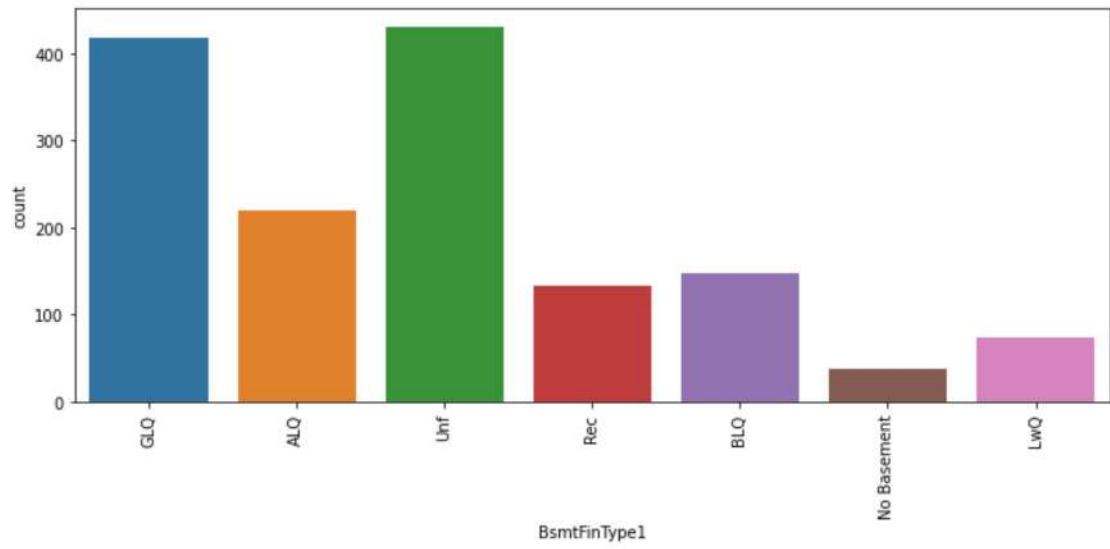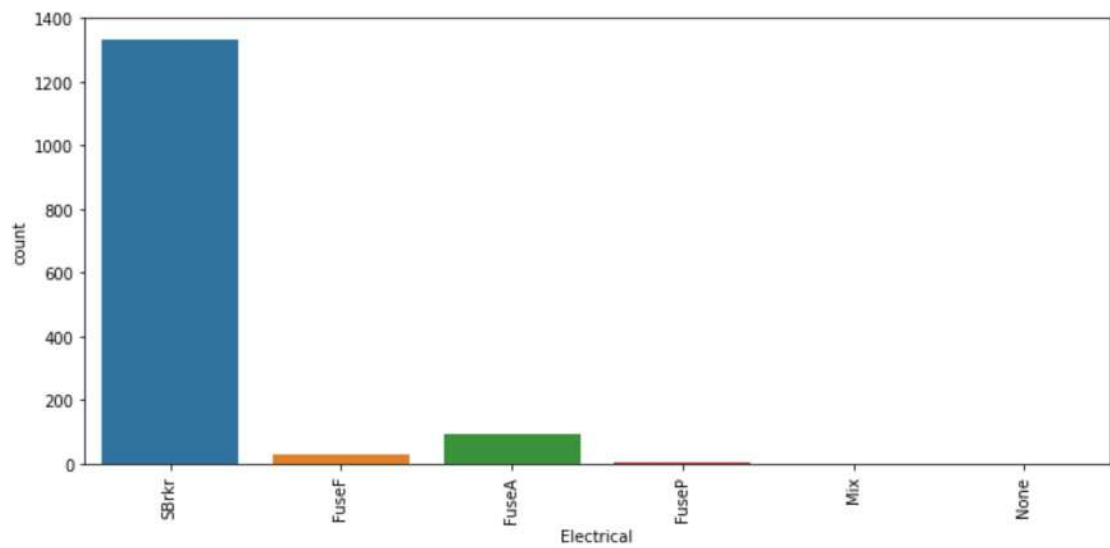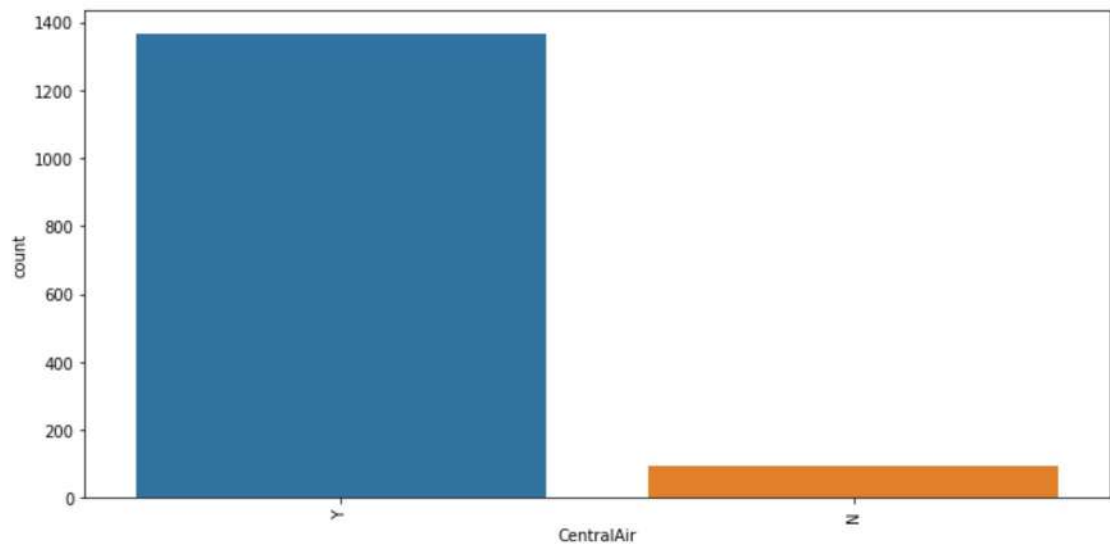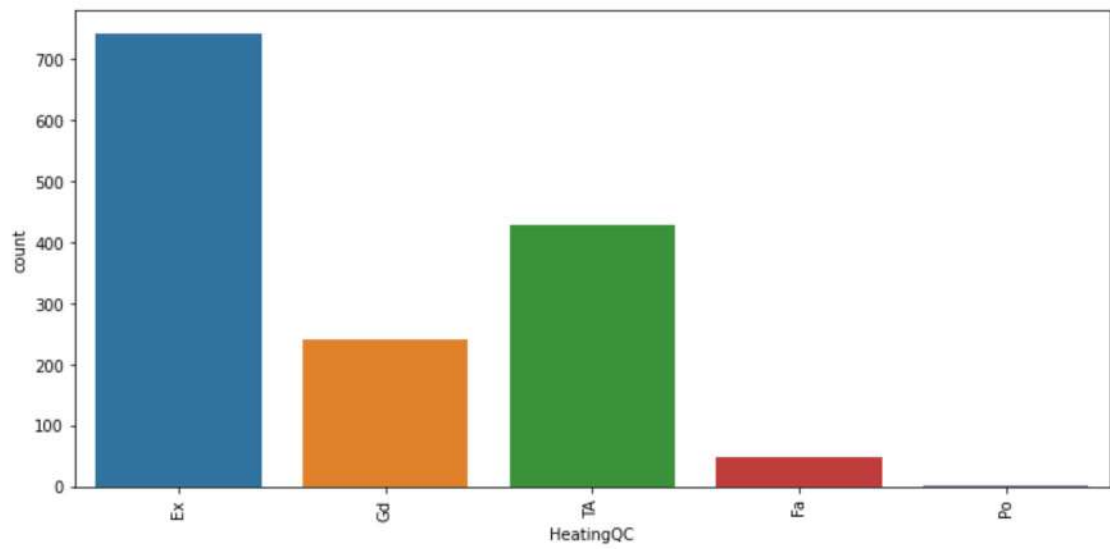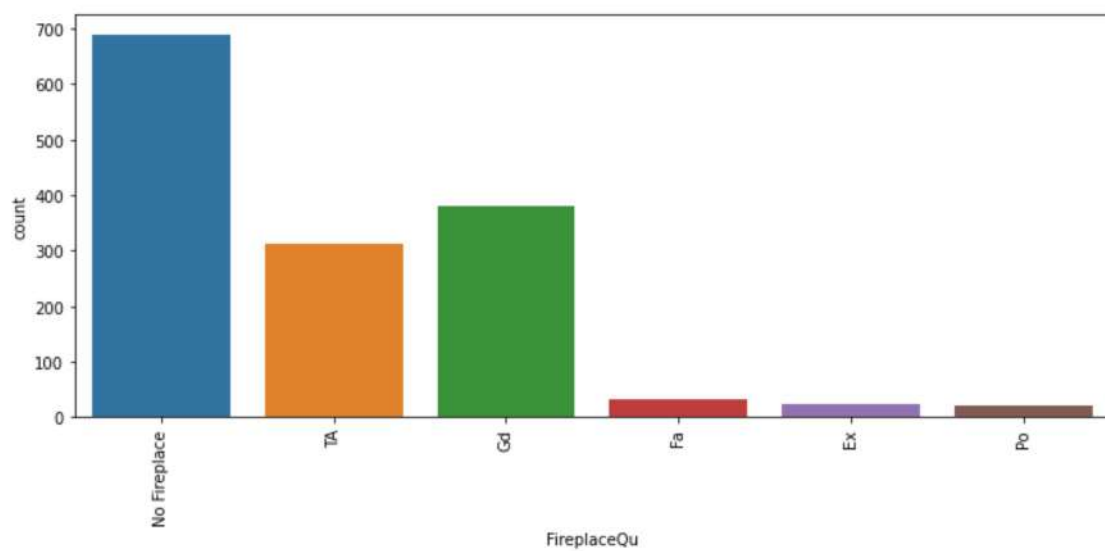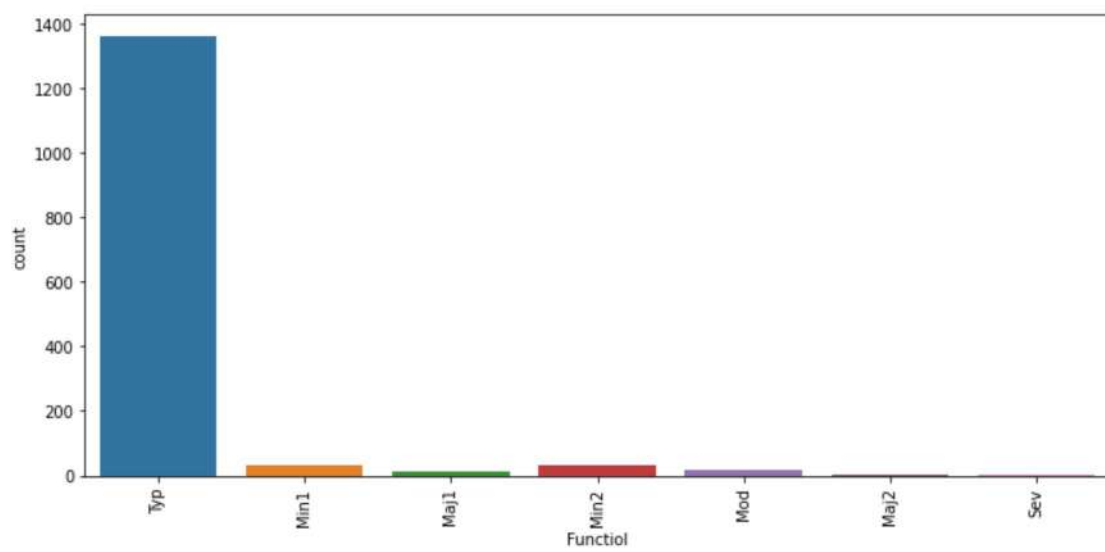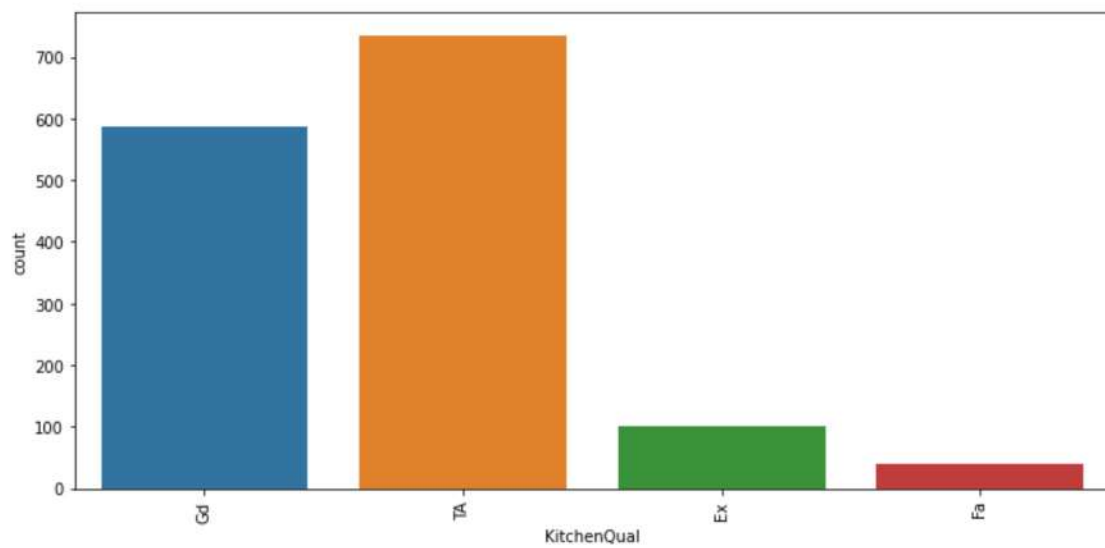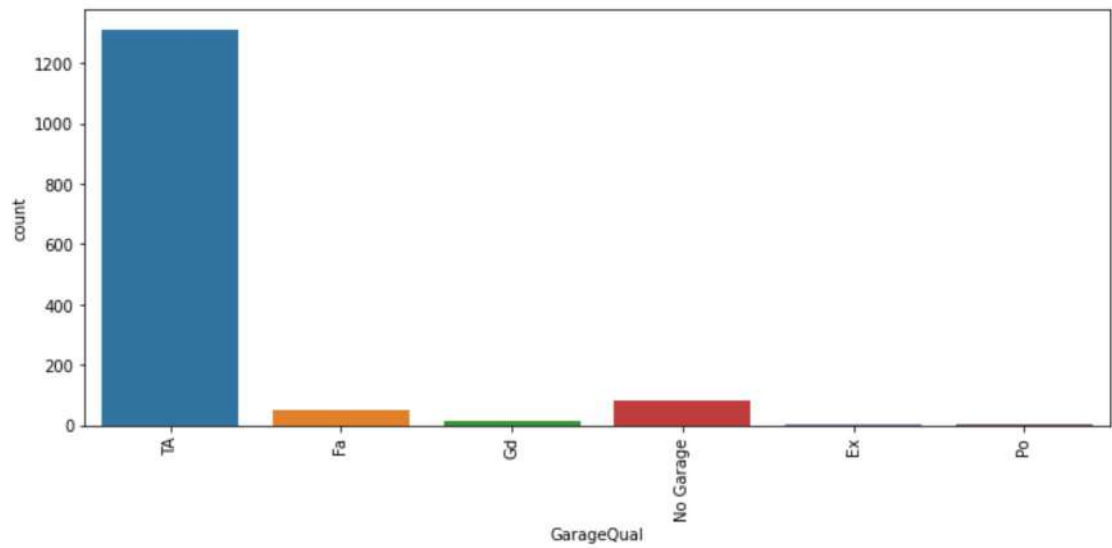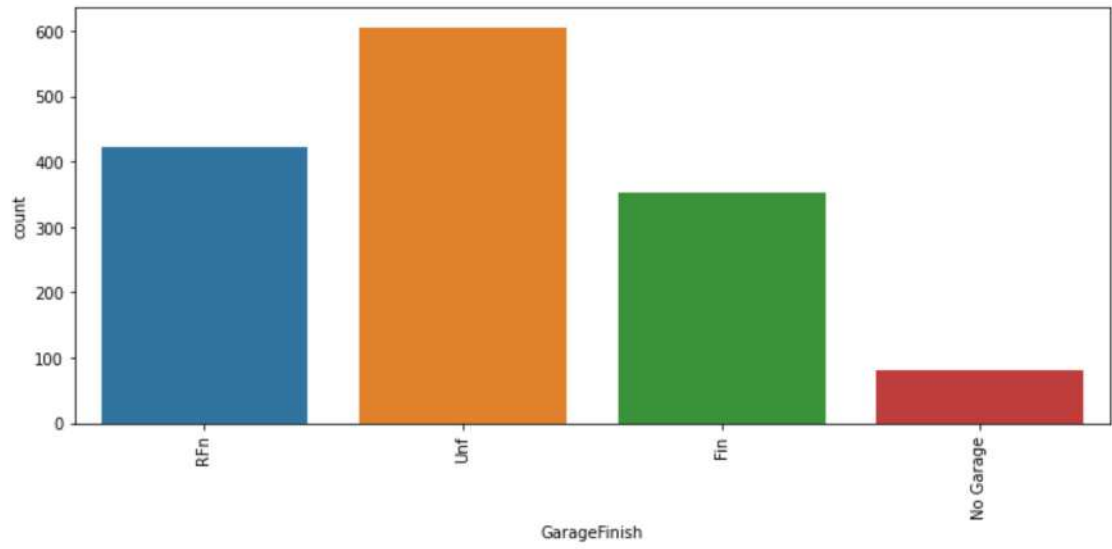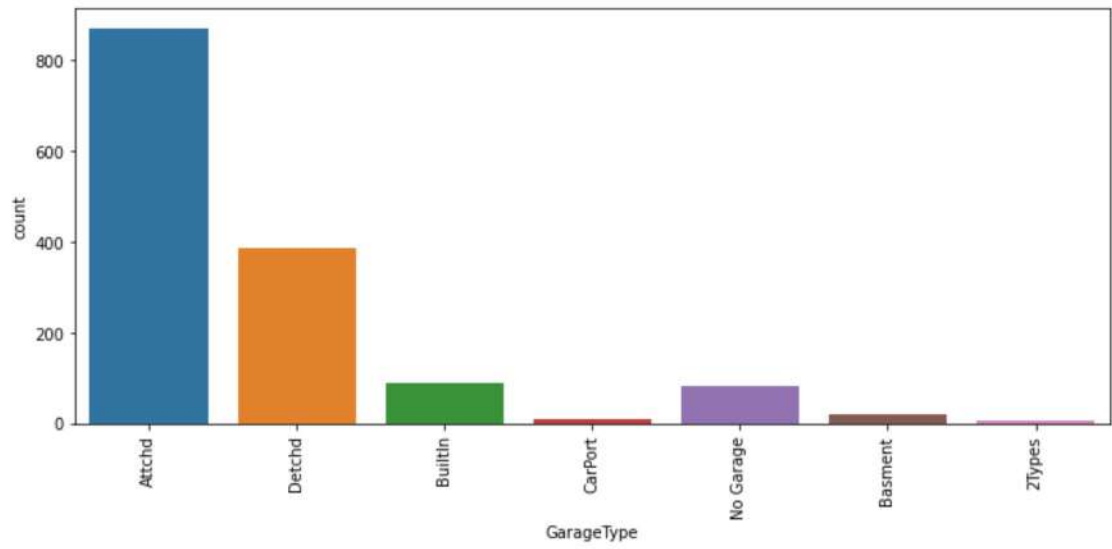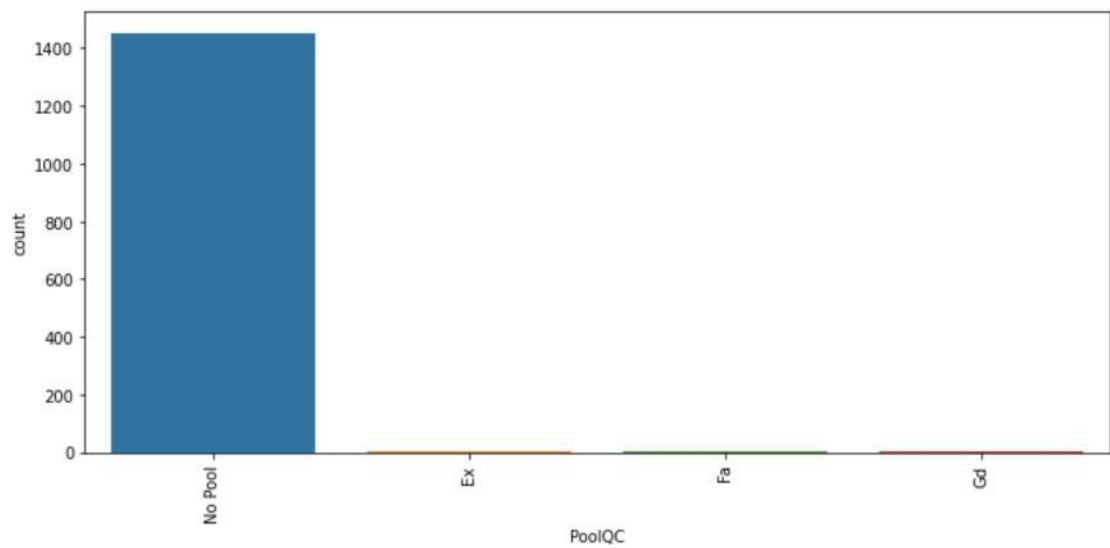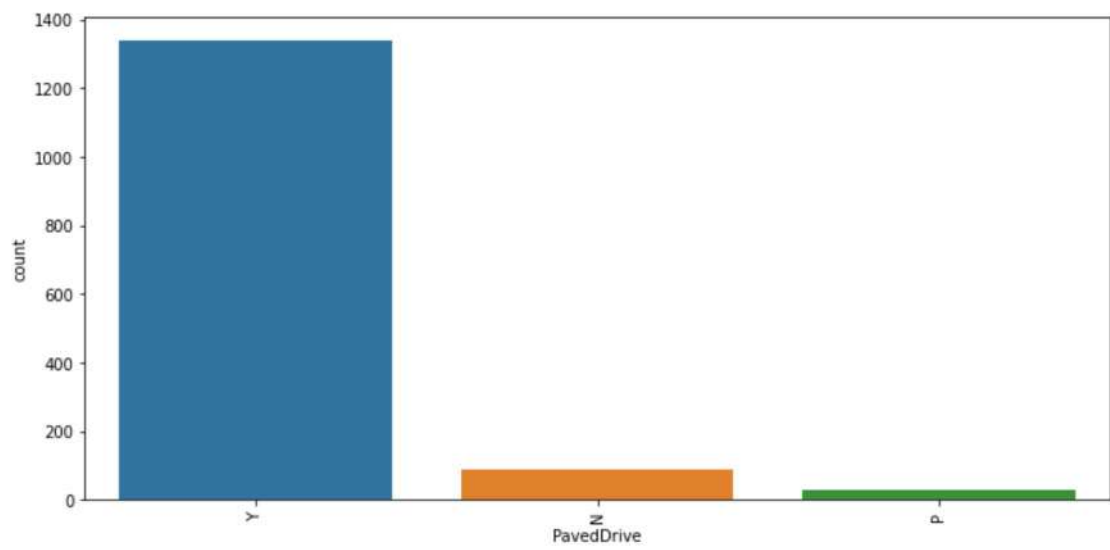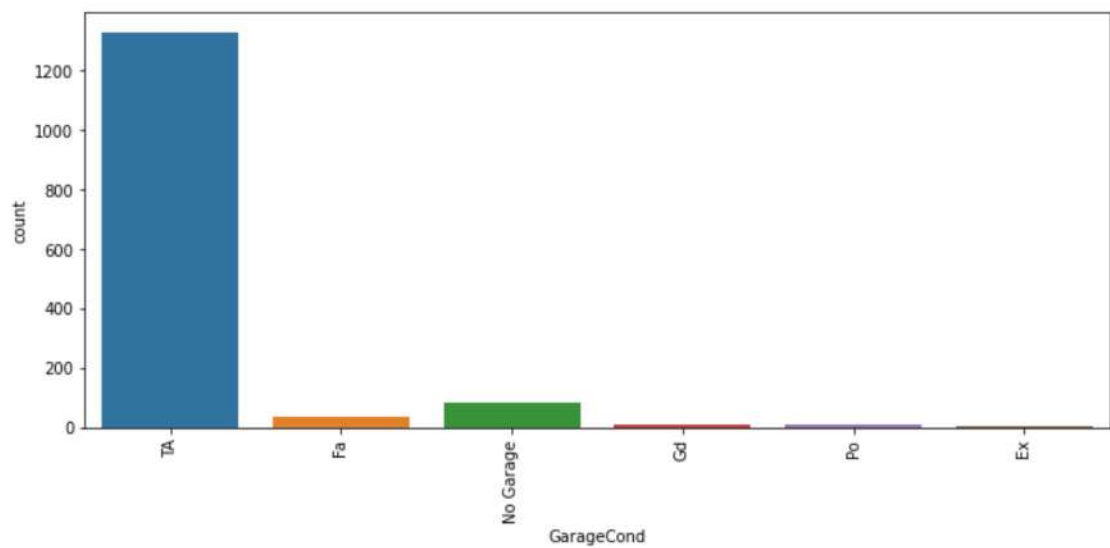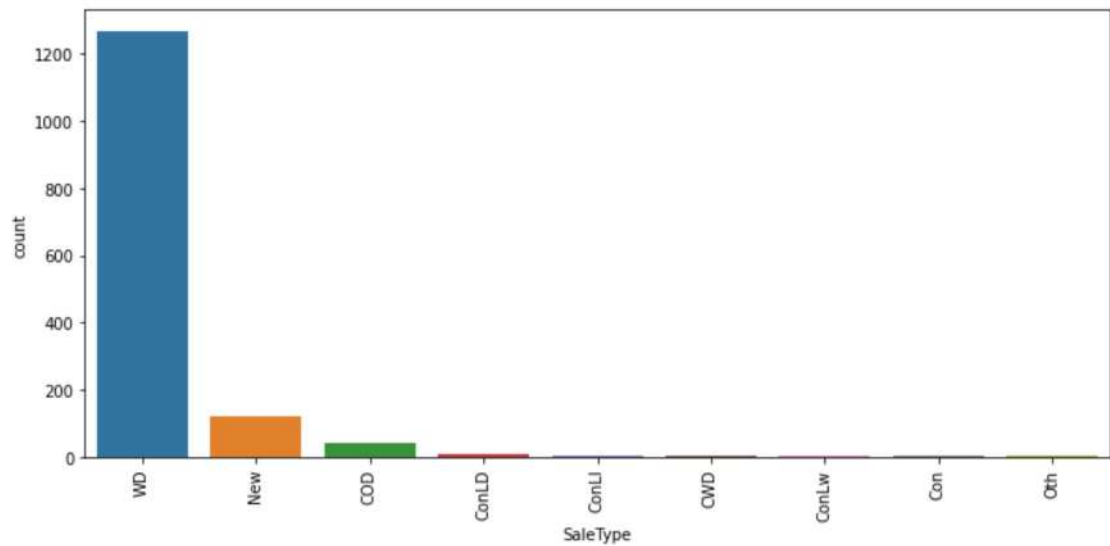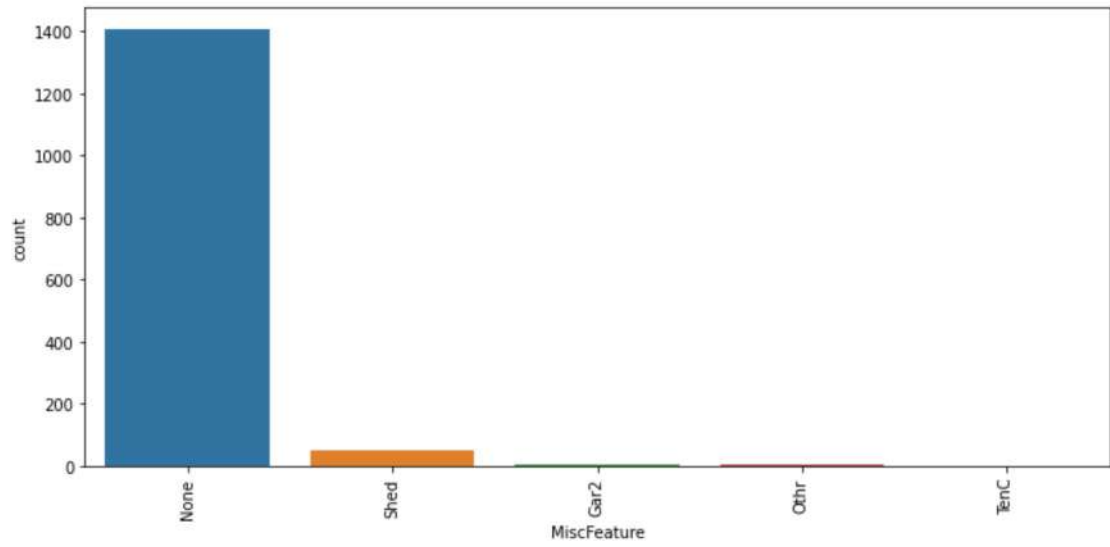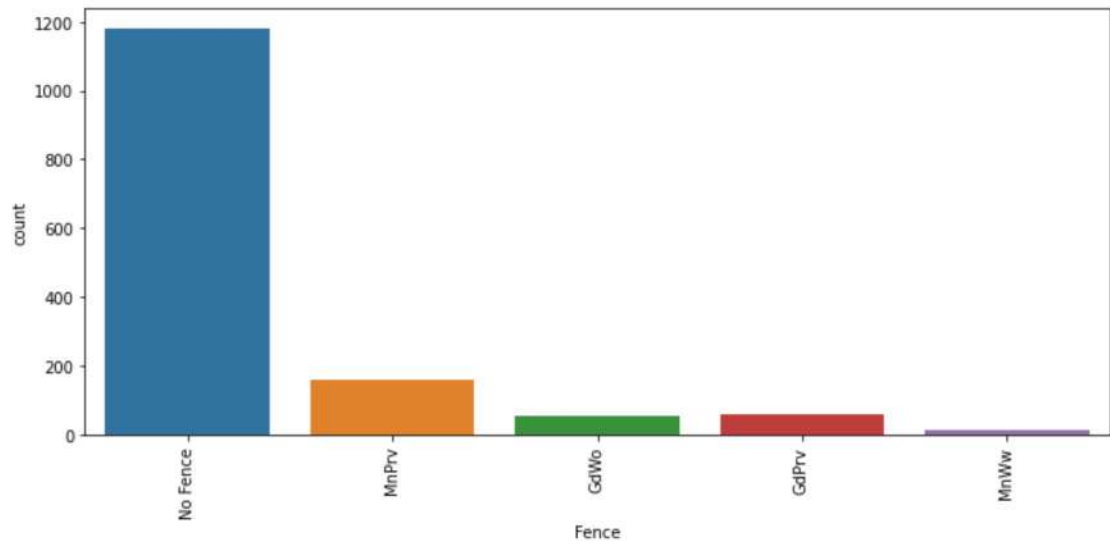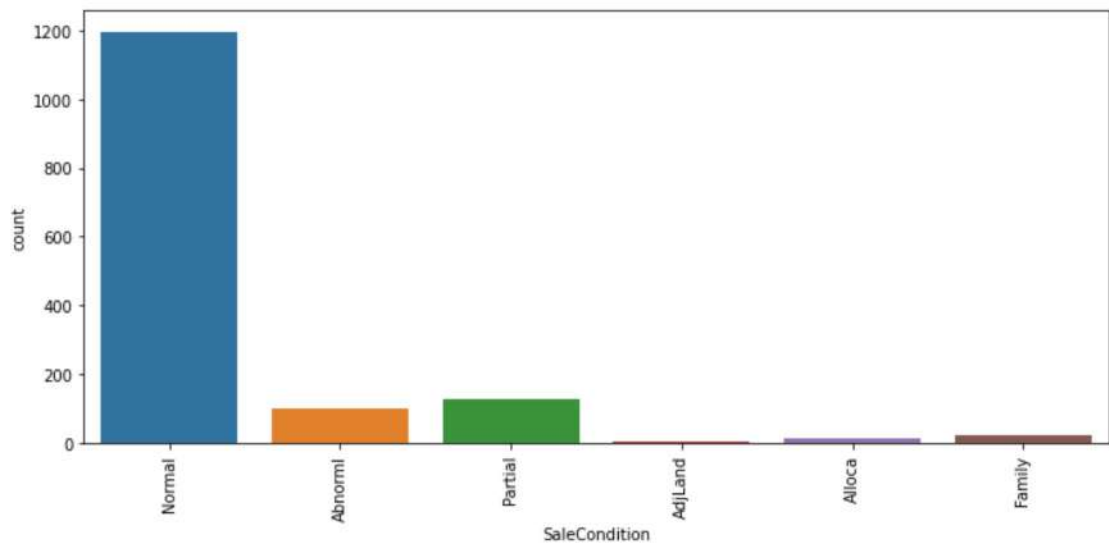
In [58]:
```python
plt.figure(figsize=(15,5))
sns.boxplot(x=cat_data['SaleCondition'],y=no_data['SalePrice'])
```

Out[58]: <matplotlib.axes._subplots.AxesSubplot at 0x7fabb8b094d0>
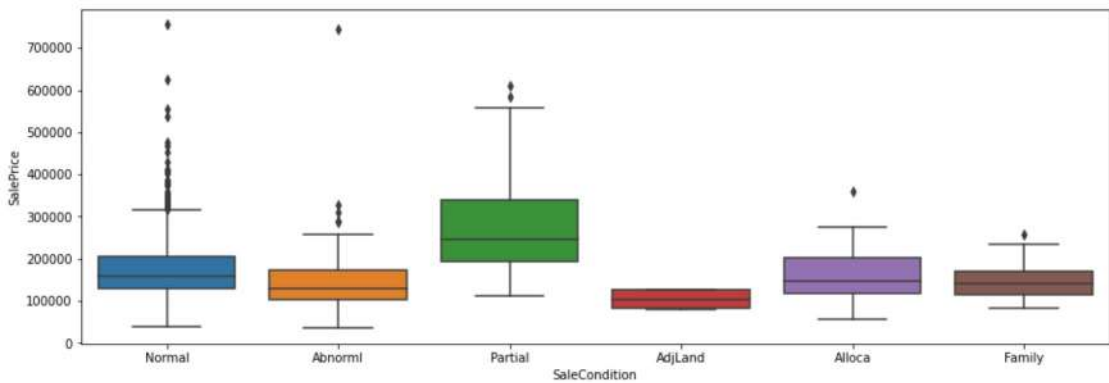
In [59]:
```python
cat_data.columns
```

Out[59]: Index(['MSZoning', 'Street', 'Alley', 'LotShape', 'LandContour', 'Utilit
ies',
        'LotConfig', 'LandSlope', 'Neighborhood', 'Condition1', 'Conditio
n2',
        'BldgType', 'HouseStyle', 'RoofStyle', 'RoofMatl', 'Exterior1st',
        'Exterior2nd', 'MasVnrType', 'ExterQual', 'ExterCond', 'Foundatio
n',
        'BsmtQual', 'BsmtCond', 'BsmtExposure', 'BsmtFinType1', 'BsmtFinT
ype2',
        'Heating', 'HeatingQC', 'CentralAir', 'Electrical', 'KitchenQual
',
        'Functiol', 'FireplaceQu', 'GarageType', 'GarageFinish', 'GarageQ
ual',
        'GarageCond', 'PavedDrive', 'PoolQC', 'Fence', 'MiscFeature',
        'SaleType', 'SaleCondition'],
       dtype='object')

```python
In [60]: cat_col = cat_data[['MSZoning', 'Street', 'Alley', 'LotShape', 'LandConto
ur', 'Utilities',
         'LotConfig', 'LandSlope', 'Neighborhood', 'Condition1', 'Condition
2',
         'BldgType', 'HouseStyle', 'RoofStyle', 'RoofMatl', 'Exterior1st',
         'Exterior2nd', 'MasVnrType', 'ExterQual', 'ExterCond', 'Foundation
',
         'BsmtQual', 'BsmtCond', 'BsmtExposure', 'BsmtFinType1', 'BsmtFinTy
pe2',
         'Heating', 'HeatingQC', 'CentralAir', 'Electrical', 'KitchenQual',
         'Functiol', 'FireplaceQu', 'GarageType', 'GarageFinish', 'GarageQu
al',
         'GarageCond', 'PavedDrive', 'PoolQC', 'Fence', 'MiscFeature',
         'SaleType']]
```

In [61]:
```python
for column in cat_col:
    plt.figure(figsize=(15,5))
    sns.boxplot(x=cat_data[column],y=no_data['SalePrice'],hue=cat_data['Sal
eCondition'])
    plt.xticks(x=cat_data[column],rotation='vertical')
    plt.tight_layout()
```
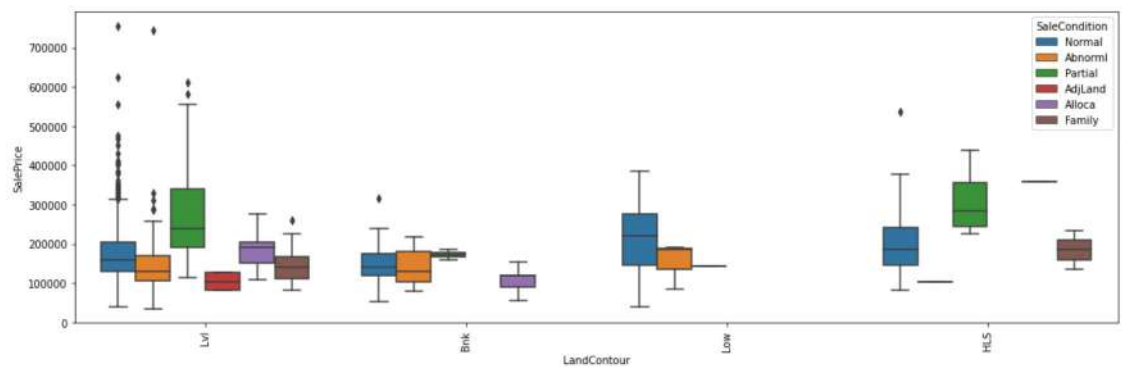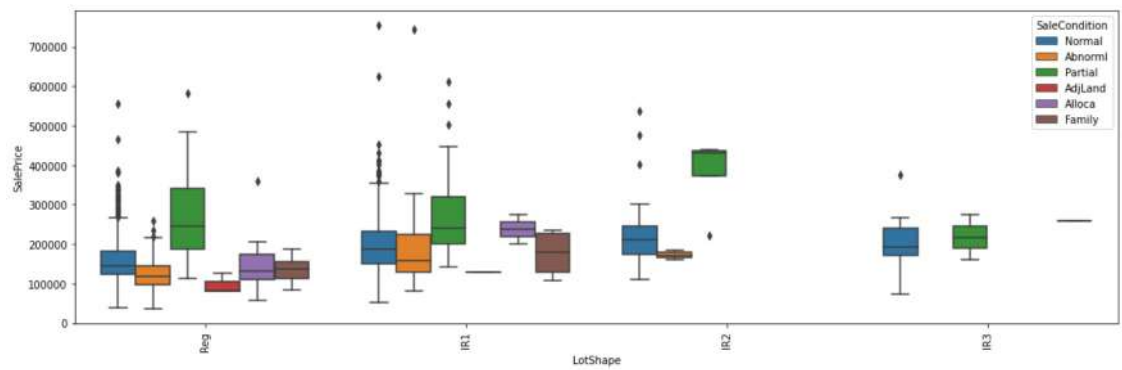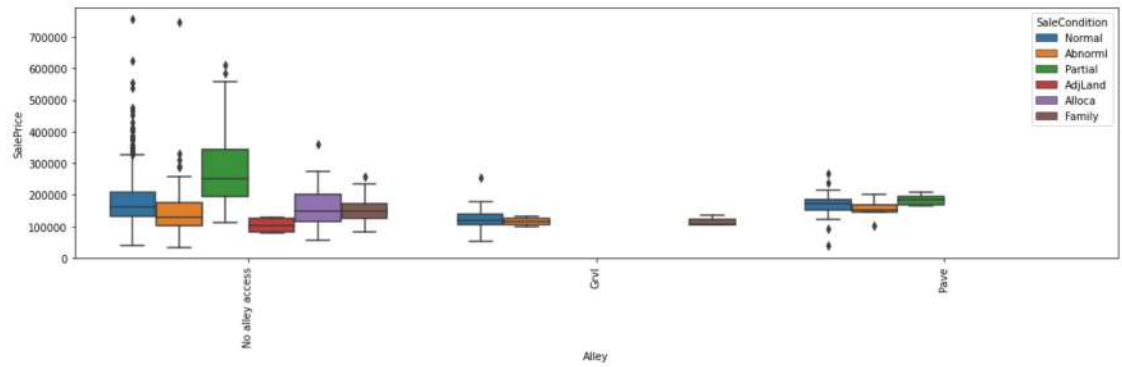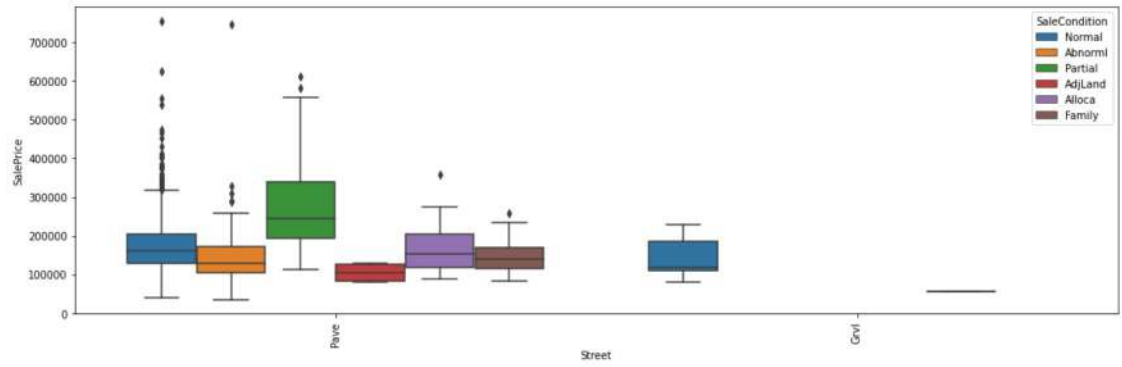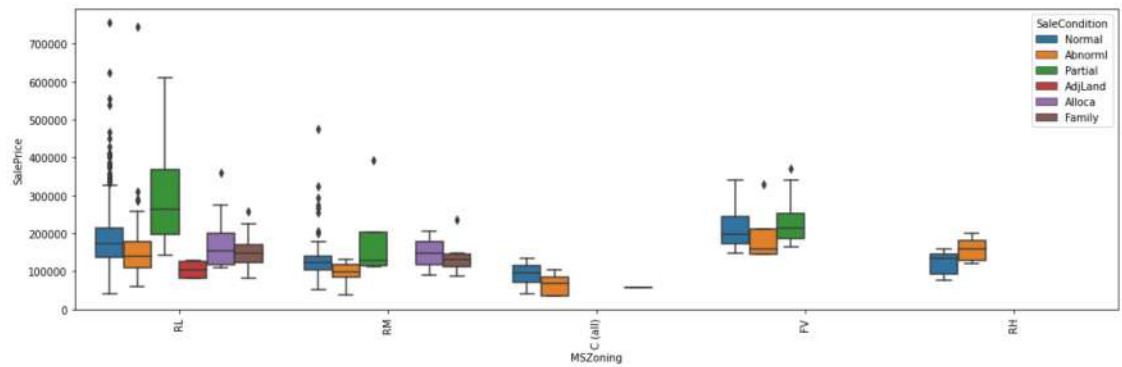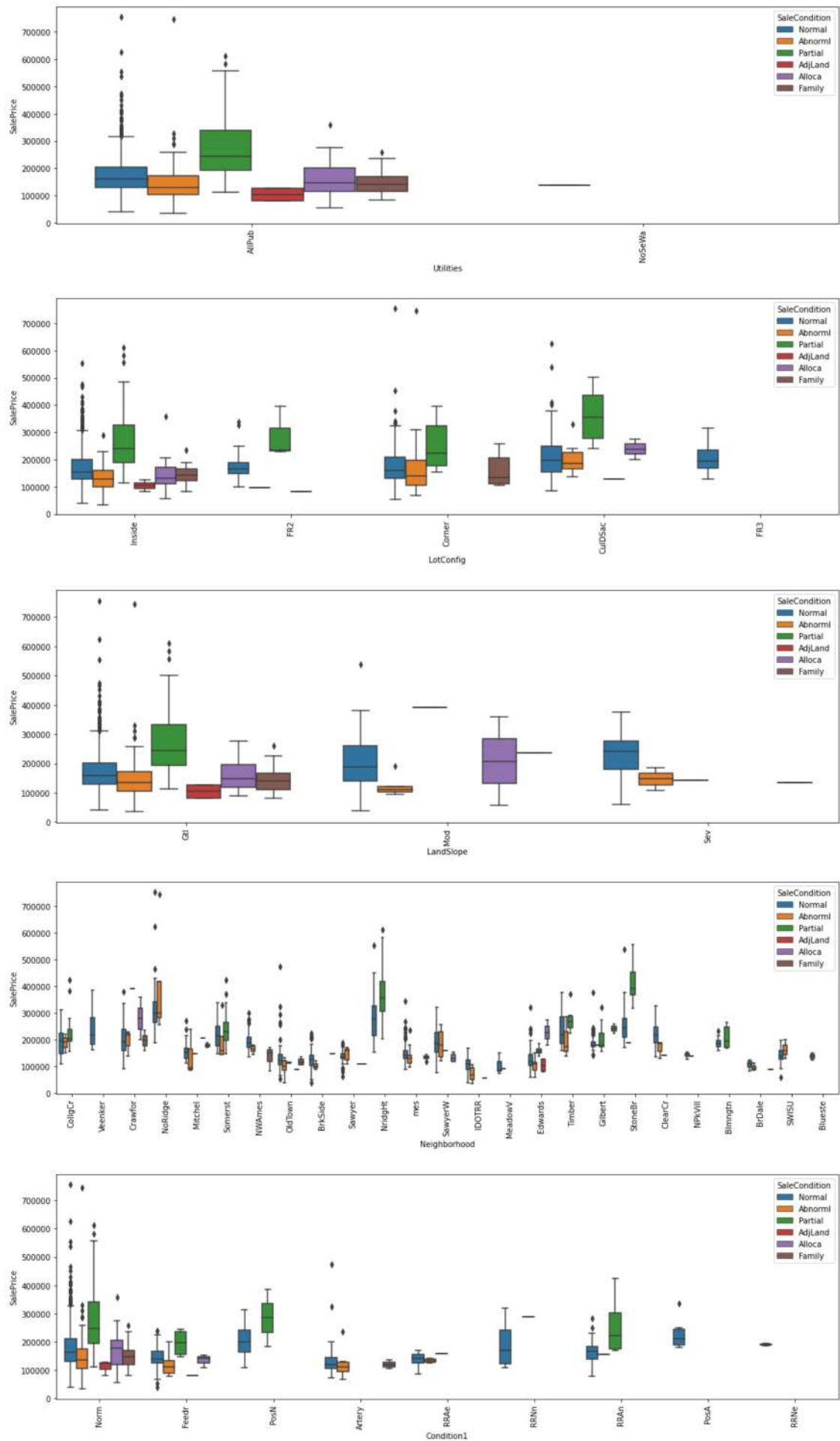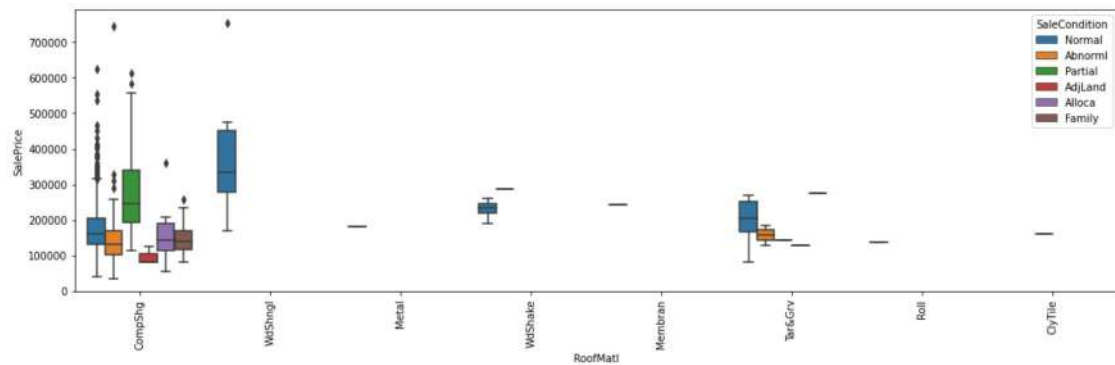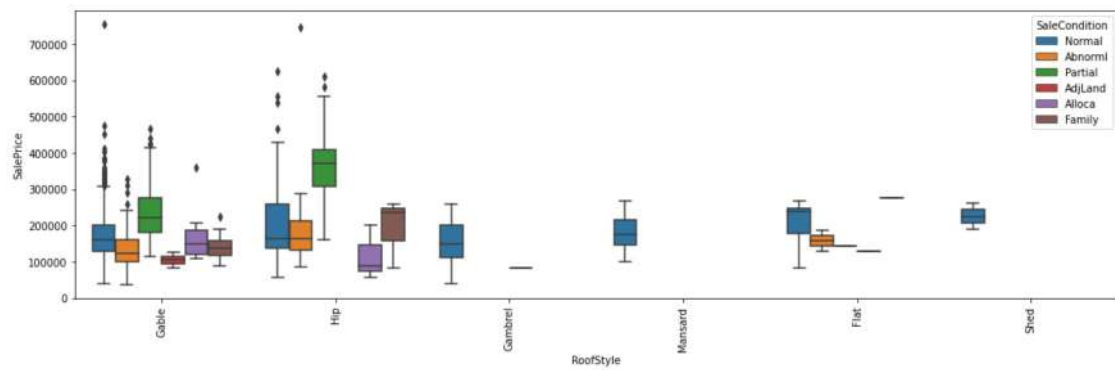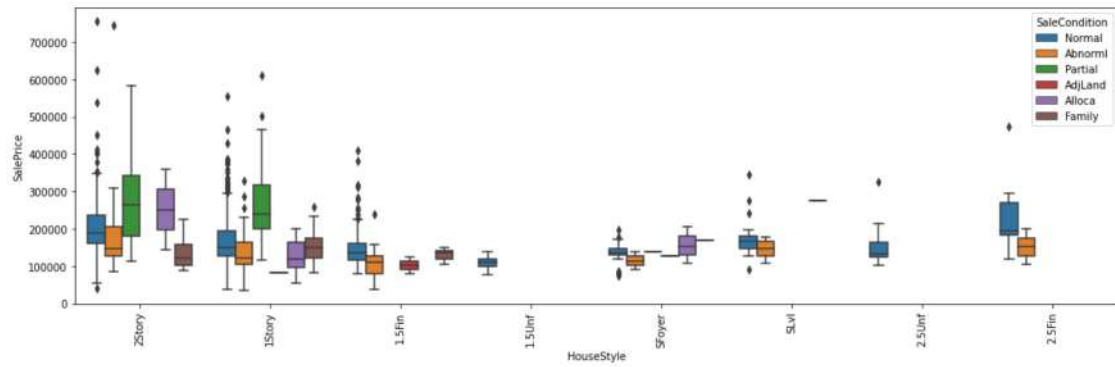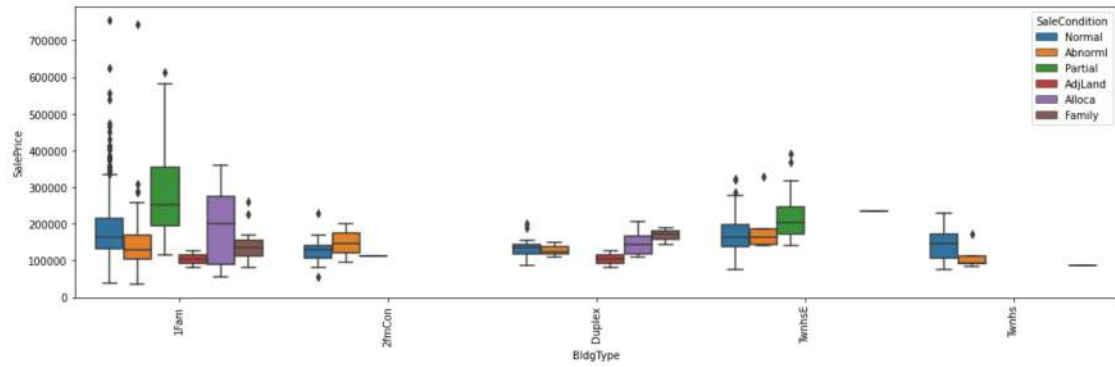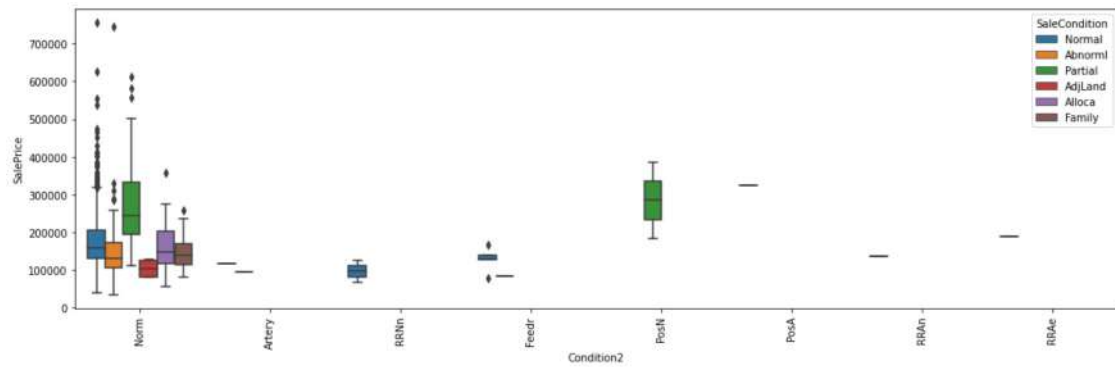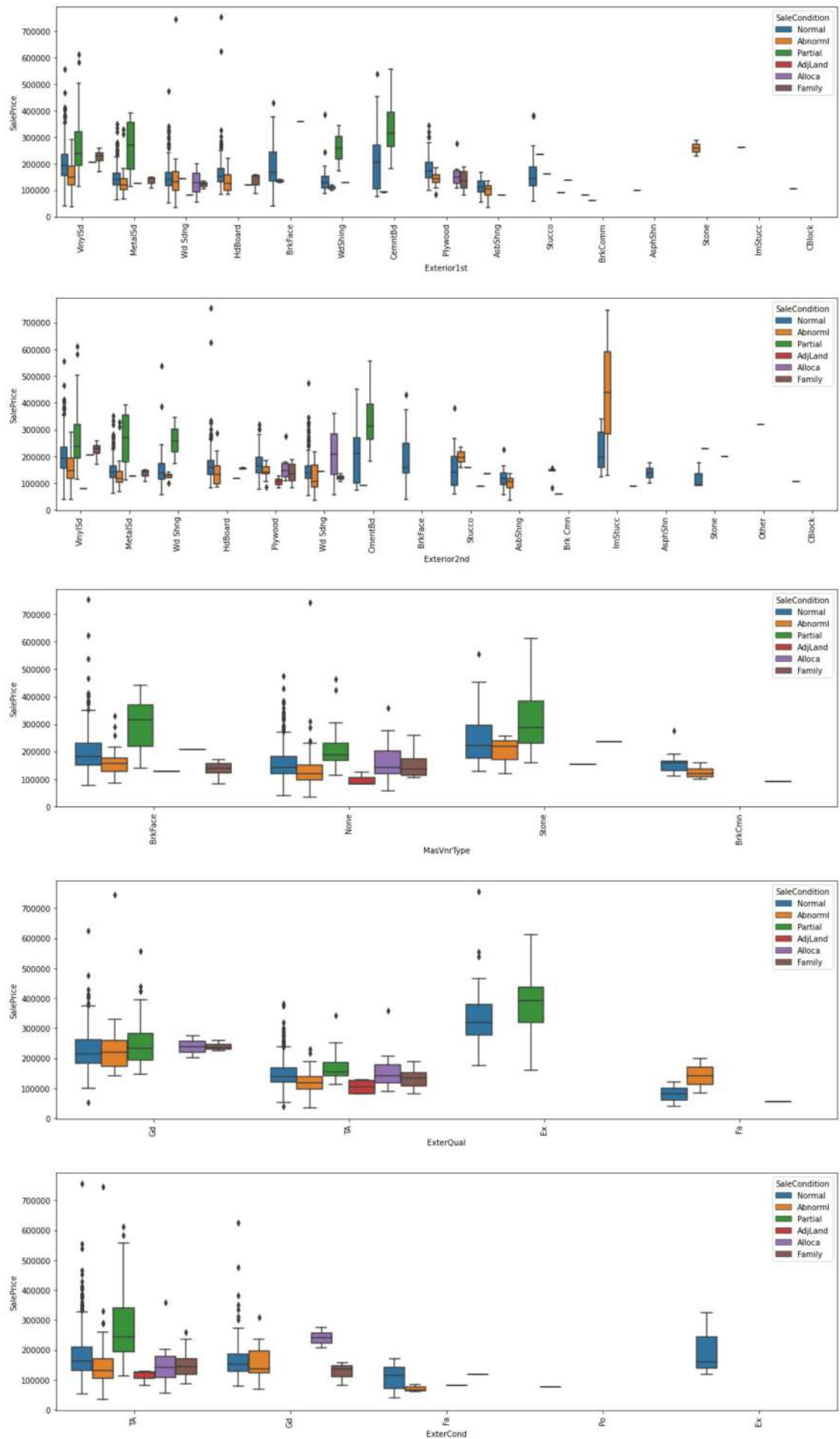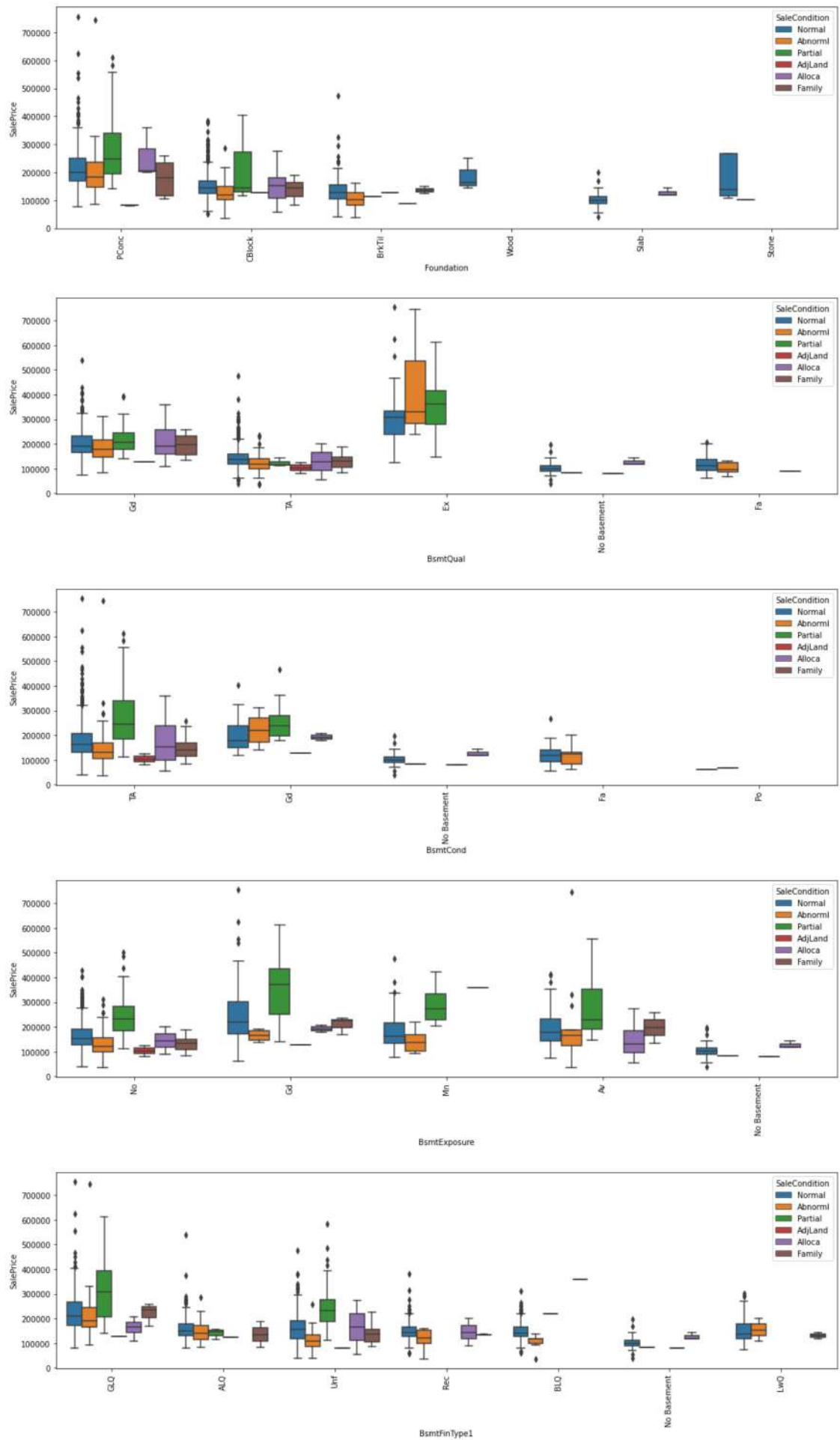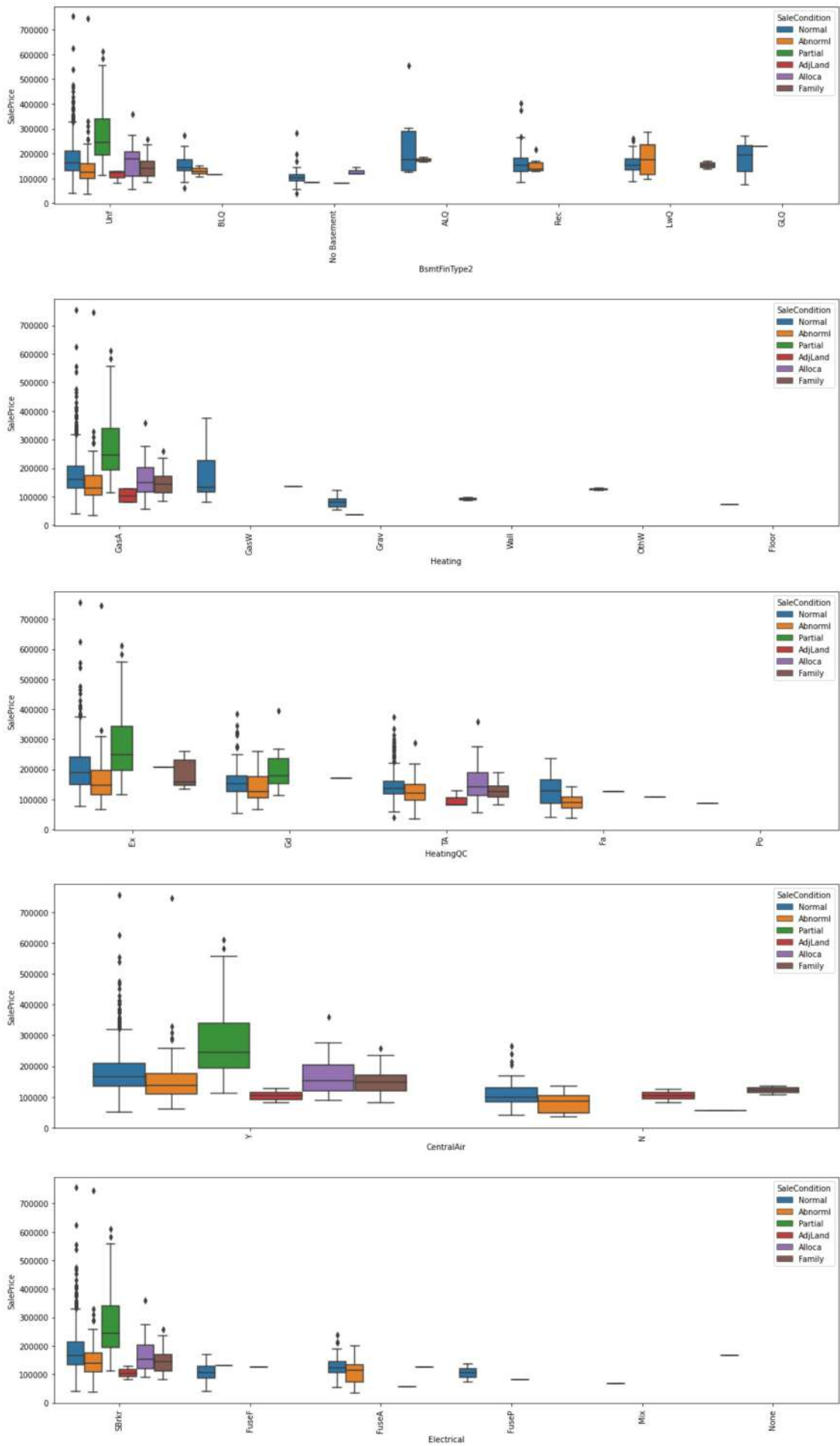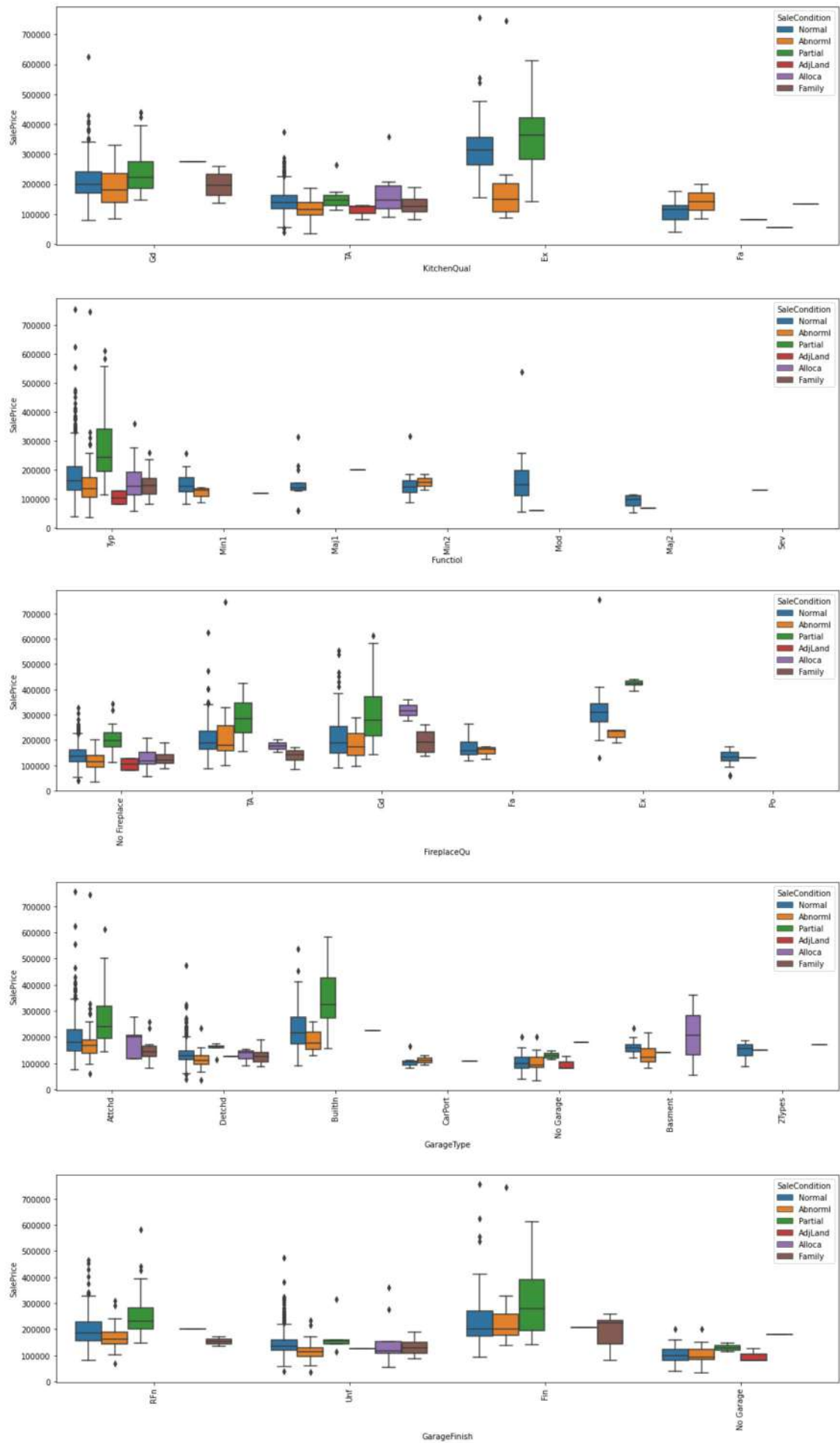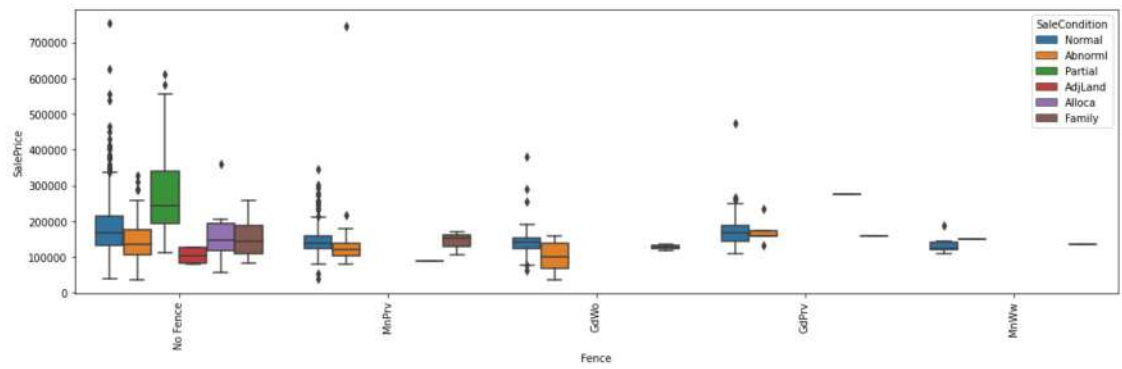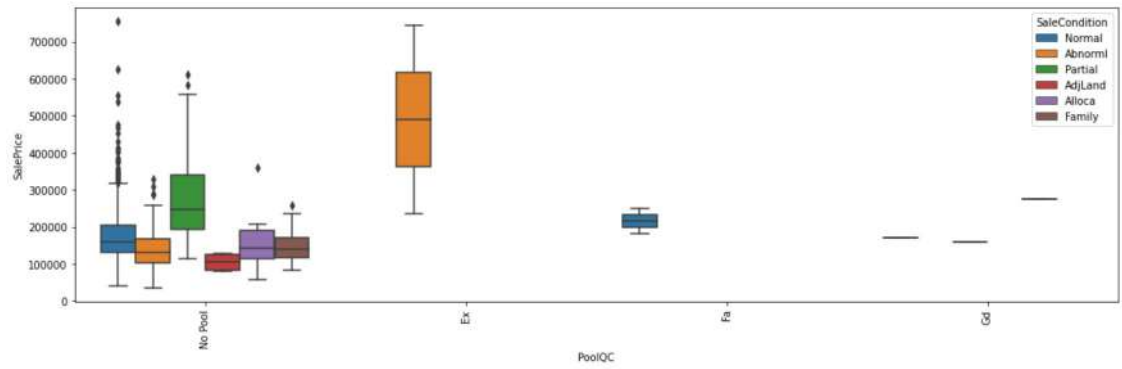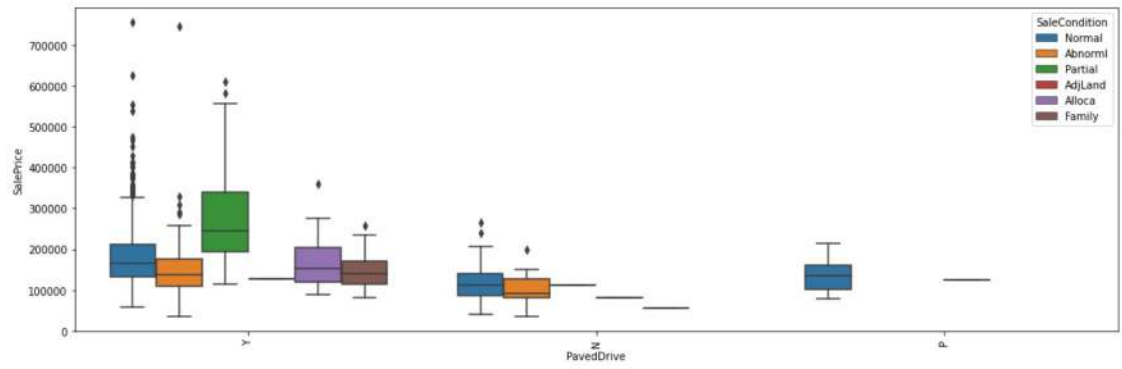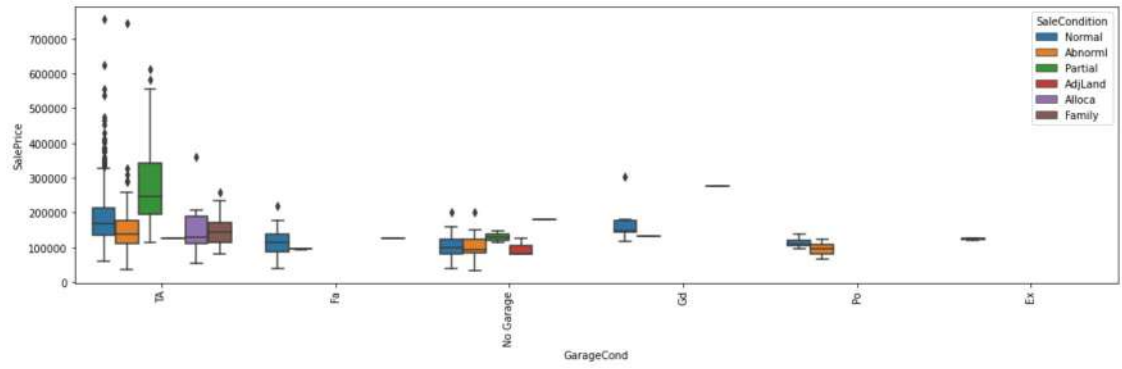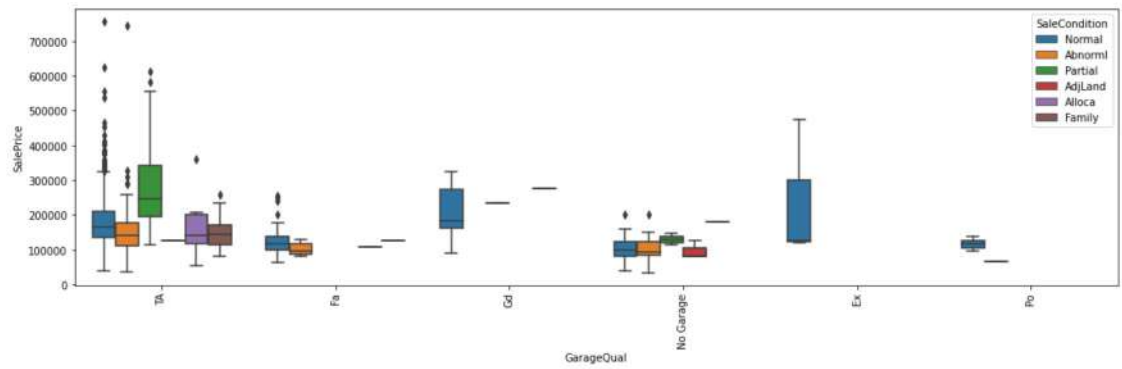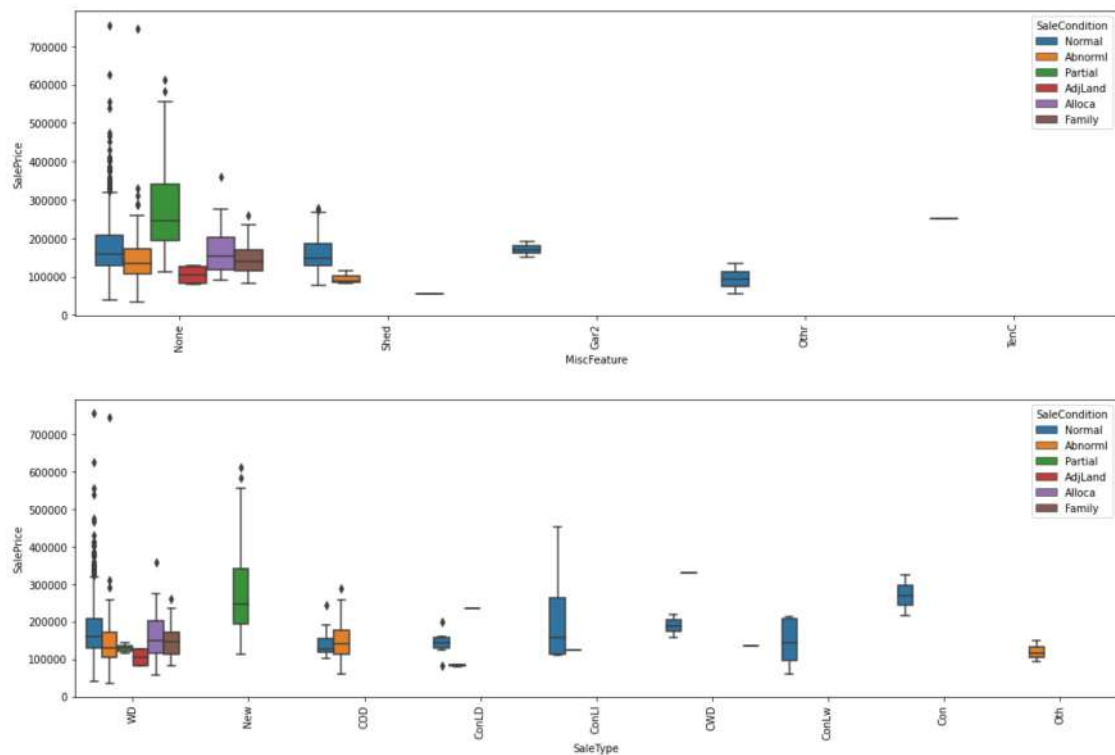
In [62]:
```python
ct_table_ind=pd.crosstab(cat_data["SaleCondition"],cat_data["ExterQual"])
print('contingency_table :\n',ct_table_ind)
```

```
contingency_table :
 ExterQual     Ex  Fa   Gd   TA
SaleCondition
Abnorml        0   2   21   78
AdjLand        0   0    0    4
Alloca         0   1    2    9
Family         0   0    3   17
Normal        25  11  376  786
Partial       27   0   86   12
```

In [63]:
```python
import scipy.stats
from scipy.stats import chi2
```

In [64]:
```python
chi2_stat, p, dof, expected = scipy.stats.chi2_contingency(ct_table_ind)

print(f"chi2 statistic:     {chi2_stat:.5g}")
print(f"p-value:            {p:.5g}")
print(f"degrees of freedom: {dof}")
print("expected frequencies:\n",expected)
```

```
chi2 statistic:     257.79
p-value:            3.0713e-46
degrees of freedom: 15
expected frequencies:
 [[3.59726027e+00 9.68493151e-01 3.37589041e+01 6.26753425e+01]
 [1.42465753e-01 3.83561644e-02 1.33698630e+00 2.48219178e+00]
 [4.27397260e-01 1.15068493e-01 4.01095890e+00 7.44657534e+00]
 [7.12328767e-01 1.91780822e-01 6.68493151e+00 1.24109589e+01]
 [4.26684932e+01 1.14876712e+01 4.00427397e+02 7.43416438e+02]
 [4.45205479e+00 1.19863014e+00 4.17808219e+01 7.75684932e+01]]
```

```
In [65]:  ct_table=pd.crosstab(cat_data["SaleCondition"],cat_data["ExterCond"])
          print('contingency_table :\n',ct_table)
```

```
contingency_table :
 ExterCond      Ex  Fa   Gd  Po    TA
SaleCondition
Abnorml         0   3   11   0    87
AdjLand         0   1    0   0     3
Alloca          0   1    2   0     9
Family          0   0    3   0    17
Normal          3  23  130   1  1041
Partial         0   0    0   0   125
```

```
In [66]:  Observed_Values = ct_table.values
          print("Observed Values :\n",Observed_Values)
```

```
Observed Values :
 [[   0    3   11    0   87]
 [   0    1    0    0    3]
 [   0    1    2    0    9]
 [   0    0    3    0   17]
 [   3   23  130    1 1041]
 [   0    0    0    0  125]]
```

```
In [67]:  ev=scipy.stats.chi2_contingency(ct_table)
          Expected_Values = ev[3]
          print("Expected Values :\n",Expected_Values)
```

```
Expected Values :
 [[2.07534247e-01 1.93698630e+00 1.01000000e+01 6.91780822e-02
   8.86863014e+01]
 [8.21917808e-03 7.67123288e-02 4.00000000e-01 2.73972603e-03
   3.51232877e+00]
 [2.46575342e-02 2.30136986e-01 1.20000000e+00 8.21917808e-03
   1.05369863e+01]
 [4.10958904e-02 3.83561644e-01 2.00000000e+00 1.36986301e-02
   1.75616438e+01]
 [2.46164384e+00 2.29753425e+01 1.19800000e+02 8.20547945e-01
   1.05194247e+03]
 [2.56849315e-01 2.39726027e+00 1.25000000e+01 8.56164384e-02
   1.09760274e+02]]
```

```
In [68]:  no_of_rows=len(ct_table.iloc[0:3,0])
          no_of_columns=len(ct_table.iloc[0,0:2])
          df=(no_of_rows-1)*(no_of_columns-1)
          print("Degree of Freedom:",df)
```

```
Degree of Freedom: 2
```

```
In [69]:  chi_square=sum([(o-e)**2./e for o,e in zip(Observed_Values,Expected_Value
          s)])
          chi_square_statistic=chi_square[0]+chi_square[1]
          print("chi-square statistic:",chi_square_statistic)
```

```
chi-square statistic: 17.7081230779887
```

```
In [33]:  dataset= pd.concat([no_data,cat_data],axis=1)
```

In [34]:
```python
dataset.isnull().sum()
```

```
Out[34]:  MSSubClass       0
          LotArea          0
          OverallQual      0
          OverallCond      0
          YearRemodAdd     0
          BsmtFinSF1       0
          BsmtFinSF2       0
          BsmtUnfSF        0
          TotalBsmtSF      0
          1stFlrSF         0
          2ndFlrSF         0
          LowQualFinSF     0
          GrLivArea        0
          BsmtFullBath     0
          BsmtHalfBath     0
          FullBath         0
          HalfBath         0
          BedroomAbvGr     0
          KitchebvGr       0
          TotRmsAbvGrd     0
          Fireplaces       0
          GarageCars       0
          GarageArea       0
          WoodDeckSF       0
          OpenPorchSF      0
          EnclosedPorch    0
          3SsnPorch        0
          ScreenPorch      0
          PoolArea         0
          MiscVal          0
          MoSold           0
          YrSold           0
          SalePrice        0
          MSZoning         0
          Street           0
          Alley            0
          LotShape         0
          LandContour      0
          Utilities        0
          LotConfig        0
          LandSlope        0
          Neighborhood     0
          Condition1       0
          Condition2       0
          BldgType         0
          HouseStyle       0
          RoofStyle        0
          RoofMatl         0
          Exterior1st      0
          Exterior2nd      0
          MasVnrType       0
          ExterQual        0
          ExterCond        0
          Foundation       0
          BsmtQual         0
          BsmtCond         0
          BsmtExposure     0
          BsmtFinType1     0
          BsmtFinType2     0
          Heating          0
```

```
HeatingQC        0
CentralAir       0
Electrical       0
KitchenQual      0
Functiol         0
FireplaceQu      0
GarageType       0
GarageFinish     0
GarageQual       0
GarageCond       0
PavedDrive       0
PoolQC           0
Fence            0
MiscFeature      0
SaleType         0
SaleCondition    0
dtype: int64
```

In [72]: `dataset.shape`

Out[72]: (1460, 76)

In [73]:
```python
dataset.isnull().any()
```

```
Out[73]:  MSSubClass       False
          LotArea          False
          OverallQual      False
          OverallCond      False
          YearRemodAdd     False
          BsmtFinSF1       False
          BsmtFinSF2       False
          BsmtUnfSF        False
          TotalBsmtSF      False
          1stFlrSF         False
          2ndFlrSF         False
          LowQualFinSF     False
          GrLivArea        False
          BsmtFullBath     False
          BsmtHalfBath     False
          FullBath         False
          HalfBath         False
          BedroomAbvGr     False
          KitchebvGr       False
          TotRmsAbvGrd     False
          Fireplaces       False
          GarageCars       False
          GarageArea       False
          WoodDeckSF       False
          OpenPorchSF      False
          EnclosedPorch    False
          3SsnPorch        False
          ScreenPorch      False
          PoolArea         False
          MiscVal          False
          MoSold           False
          YrSold           False
          SalePrice        False
          MSZoning         False
          Street           False
          Alley            False
          LotShape         False
          LandContour      False
          Utilities        False
          LotConfig        False
          LandSlope        False
          Neighborhood     False
          Condition1       False
          Condition2       False
          BldgType         False
          HouseStyle       False
          RoofStyle        False
          RoofMatl         False
          Exterior1st      False
          Exterior2nd      False
          MasVnrType       False
          ExterQual        False
          ExterCond        False
          Foundation       False
          BsmtQual         False
          BsmtCond         False
          BsmtExposure     False
          BsmtFinType1     False
          BsmtFinType2     False
          Heating          False
```

```
HeatingQC         False
CentralAir        False
Electrical        False
KitchenQual       False
Functiol          False
FireplaceQu       False
GarageType        False
GarageFinish      False
GarageQual        False
GarageCond        False
PavedDrive        False
PoolQC            False
Fence             False
MiscFeature       False
SaleType          False
SaleCondition     False
dtype: bool
```

In [74]:
```
plt.figure(figsize=(15,10))
sns.heatmap(dataset.corr())
```

Out[74]: `<matplotlib.axes._subplots.AxesSubplot at 0x7fabb3ab2a90>`
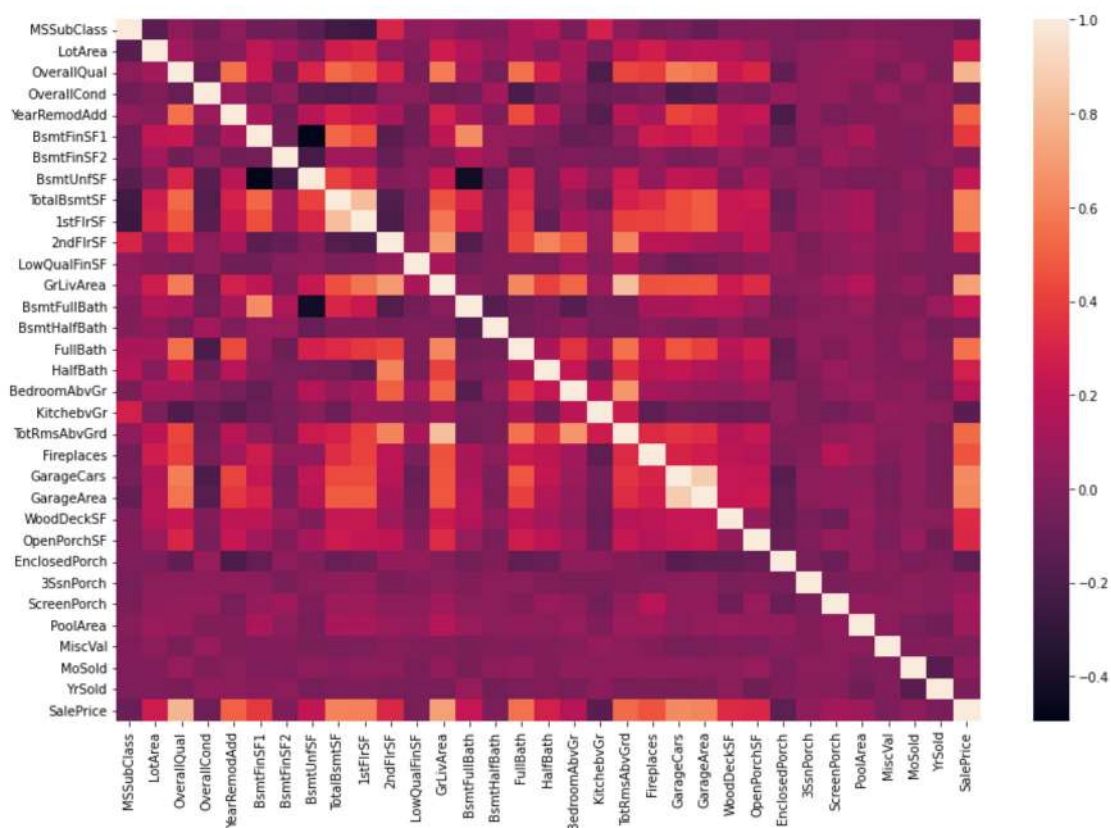
In [75]: `dataset.corr()`

Out[75]:

	MSSubClass	LotArea	OverallQual	OverallCond	YearRemodAdd	BsmtFi
MSSubClass	1.000000	-0.139781	0.032628	-0.059316	0.040581	-0.06
LotArea	-0.139781	1.000000	0.105806	-0.005636	0.013788	0.21
OverallQual	0.032628	0.105806	1.000000	-0.091932	0.550684	0.23
OverallCond	-0.059316	-0.005636	-0.091932	1.000000	0.073741	-0.04
YearRemodAdd	0.040581	0.013788	0.550684	0.073741	1.000000	0.12
BsmtFinSF1	-0.069836	0.214103	0.239666	-0.046231	0.128451	1.00
BsmtFinSF2	-0.065649	0.111170	-0.059119	0.040229	-0.067759	-0.05
BsmtUnfSF	-0.140759	-0.002618	0.308159	-0.136841	0.181133	-0.49
TotalBsmtSF	-0.238518	0.260833	0.537808	-0.171098	0.291066	0.52
1stFlrSF	-0.251758	0.299475	0.476224	-0.144203	0.240379	0.44
2ndFlrSF	0.307886	0.050986	0.295493	0.028942	0.140024	-0.13
LowQualFinSF	0.046474	0.004779	-0.030429	0.025494	-0.062419	-0.06
GrLivArea	0.074853	0.263116	0.593007	-0.079686	0.287389	0.20
BsmtFullBath	0.003491	0.158155	0.111098	-0.054942	0.119470	0.64
BsmtHalfBath	-0.002333	0.048046	-0.040150	0.117821	-0.012337	0.06
FullBath	0.131608	0.126031	0.550600	-0.194149	0.439046	0.05
HalfBath	0.177354	0.014259	0.273458	-0.060769	0.183331	0.00
BedroomAbvGr	-0.023438	0.119690	0.101676	0.012980	-0.040581	-0.10
KitchebvGr	0.281721	-0.017784	-0.183882	-0.087001	-0.149598	-0.08
TotRmsAbvGrd	0.040380	0.190015	0.427452	-0.057583	0.191740	0.04
Fireplaces	-0.045569	0.271364	0.396765	-0.023820	0.112581	0.26
GarageCars	-0.040110	0.154871	0.600671	-0.185758	0.420622	0.22
GarageArea	-0.098672	0.180403	0.562022	-0.151521	0.371600	0.29
WoodDeckSF	-0.012579	0.171698	0.238923	-0.003334	0.205726	0.20
OpenPorchSF	-0.006100	0.084774	0.308819	-0.032589	0.226298	0.11
EnclosedPorch	-0.012037	-0.018340	-0.113937	0.070356	-0.193919	-0.10
3SsnPorch	-0.043825	0.020423	0.030371	0.025504	0.045286	0.02
ScreenPorch	-0.026030	0.043160	0.064886	0.054811	-0.038740	0.06
PoolArea	0.008283	0.077672	0.065166	-0.001985	0.005829	0.14
MiscVal	-0.007683	0.038068	-0.031406	0.068777	-0.010286	0.00
MoSold	-0.013585	0.001205	0.070815	-0.003511	0.021490	-0.01
YrSold	-0.021407	-0.014261	-0.027347	0.043950	0.035743	0.01
SalePrice	-0.084284	0.263843	0.790982	-0.077856	0.507101	0.38

'MSSubClass','LotArea','OverallQual','OverallCond','YearRemodAdd','MasVnrArea',
'BsmtFinSF1','BsmtFinSF2','BsmtUnfSF','TotalBsmtSF','1stFlrSF','2ndFlrSF',
'LowQualFinSF','GrLivArea','BsmtFullBath','BsmtHalfBath','FullBath','HalfBath',
'BedroomAbvGr','KitchebvGr','TotRmsAbvGrd','Fireplaces','GarageCars',
'GarageArea','WoodDeckSF','OpenPorchSF','EnclosedPorch','3SsnPorch',
'ScreenPorch','PoolArea','MiscVal','MoSold','YrSold','SalePrice'

```
In [76]: dataset_cols = ['MSSubClass','OverallQual','OverallCond','YearRemodAdd','
         BsmtFullBath','BsmtHalfBath','FullBath','HalfBath', 'BedroomAbvGr','Kitch
         ebvGr','TotRmsAbvGrd','Fireplaces','GarageCars','EnclosedPorch','3SsnPorc
         h', 'ScreenPorch','PoolArea','MiscVal','MoSold','YrSold']
```

```python
In [77]: for column in dataset_cols:
             plt.figure(figsize=(15,5))
             sns.boxplot(x=dataset[column],y=dataset['SalePrice'])
             plt.xticks(x=dataset[column],rotation='vertical')
             plt.tight_layout()
```
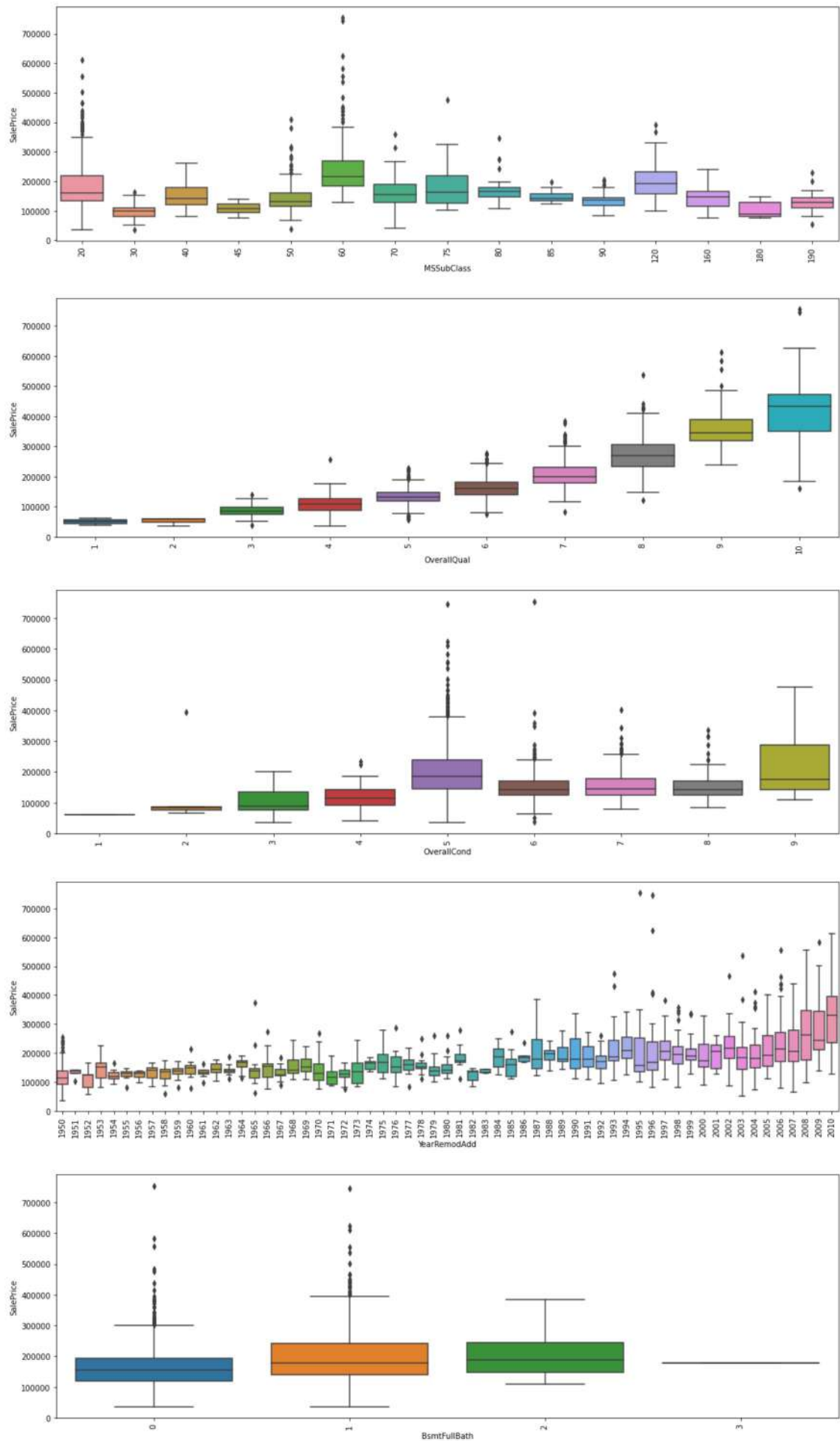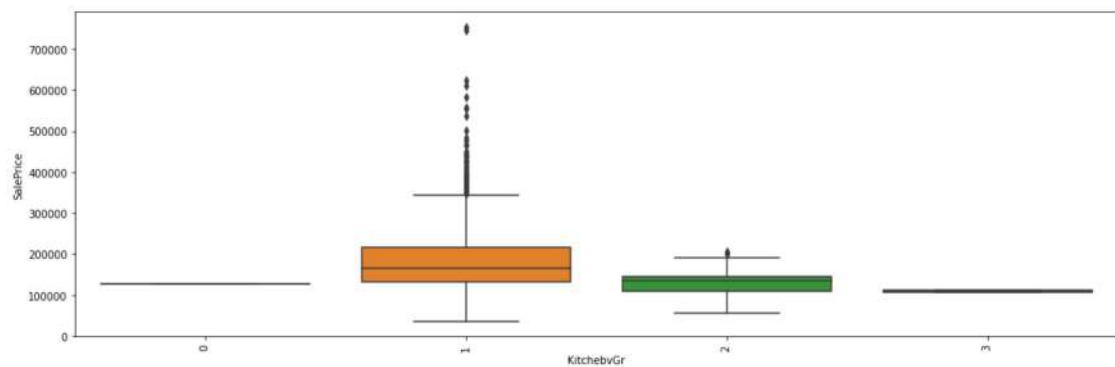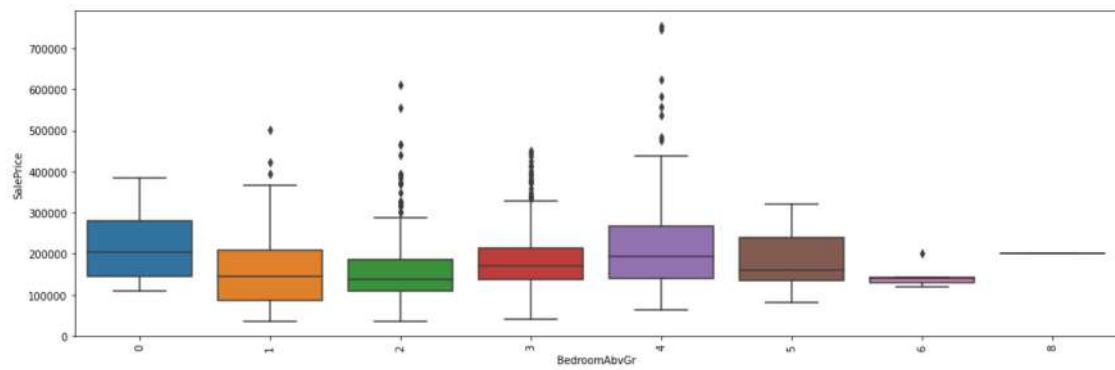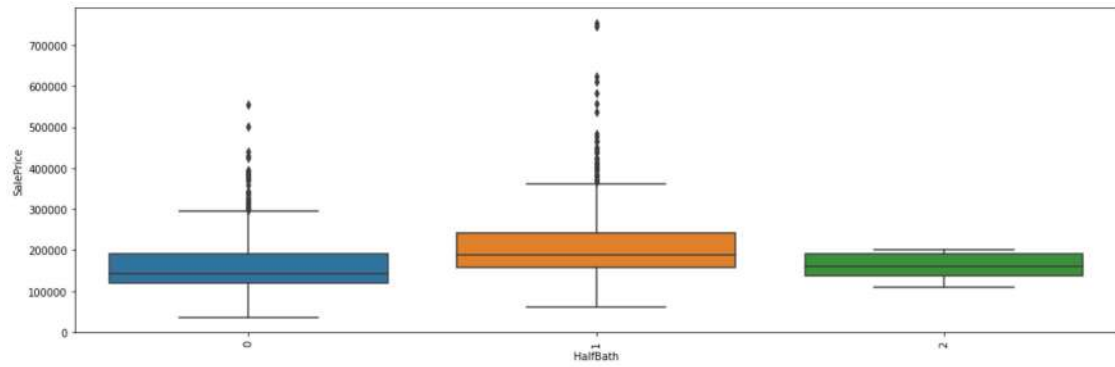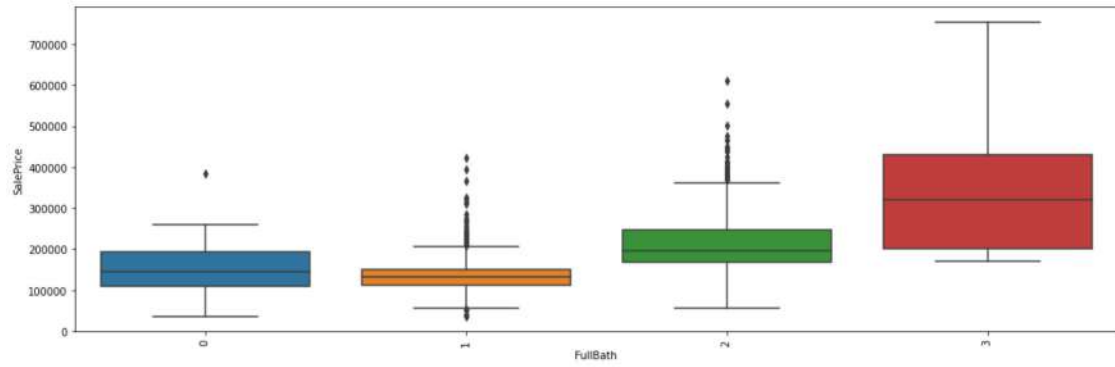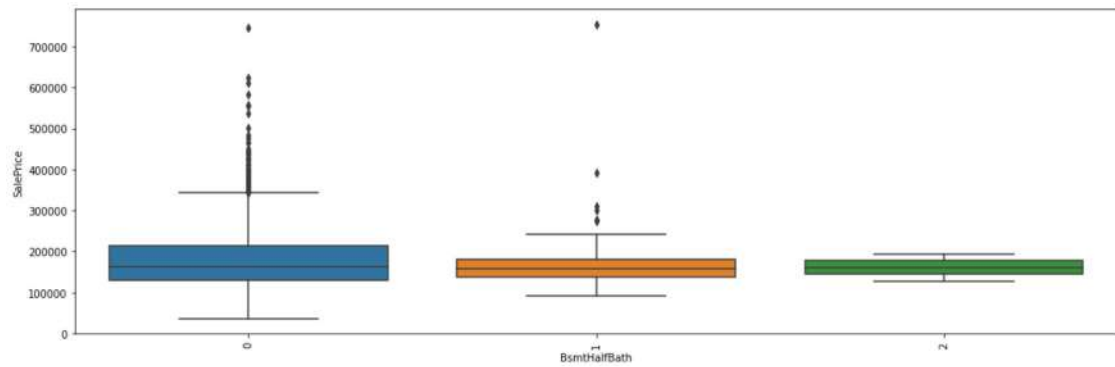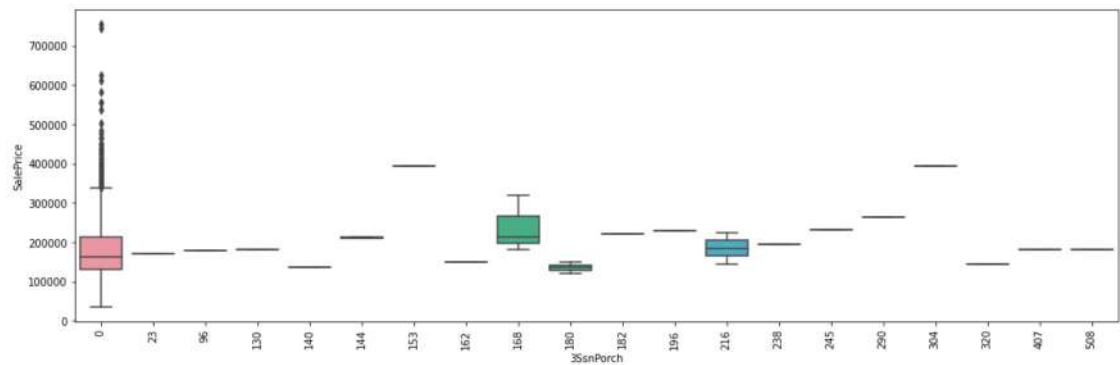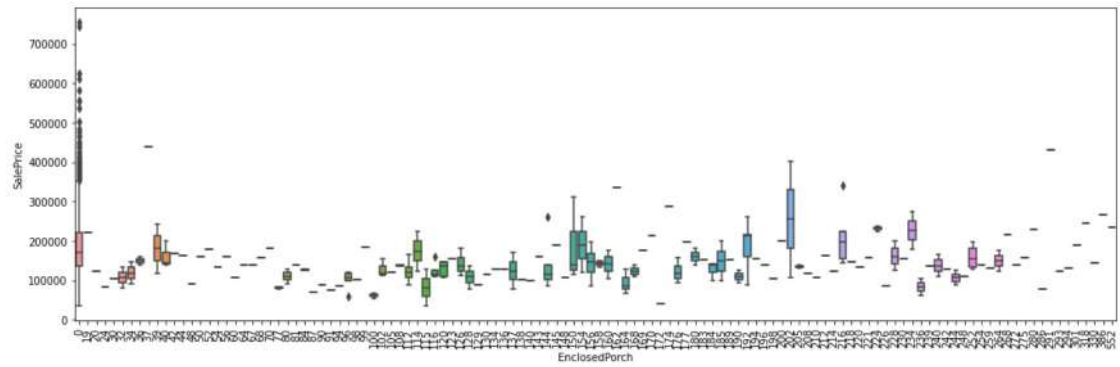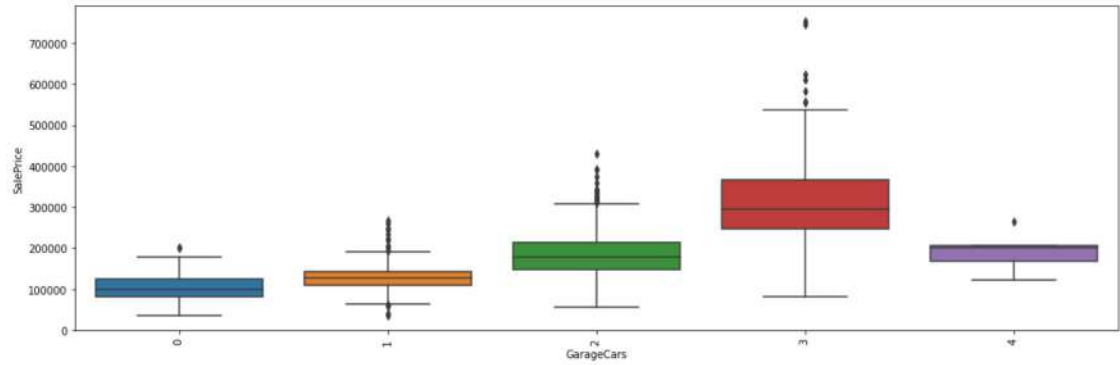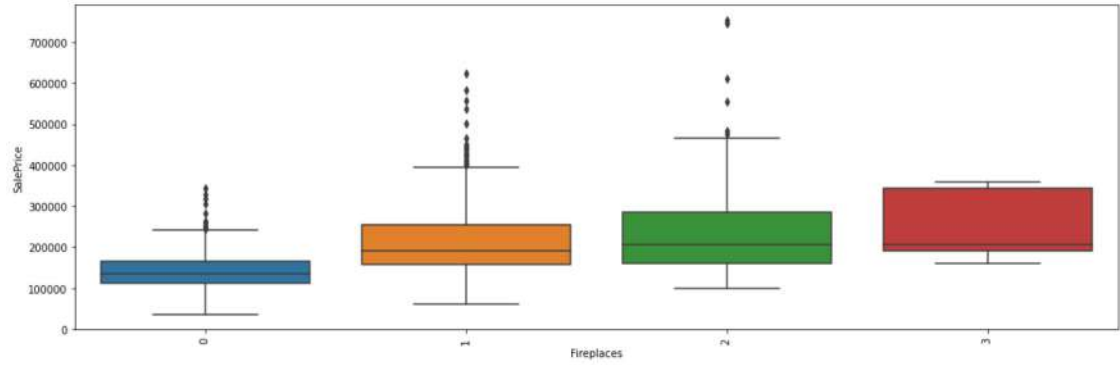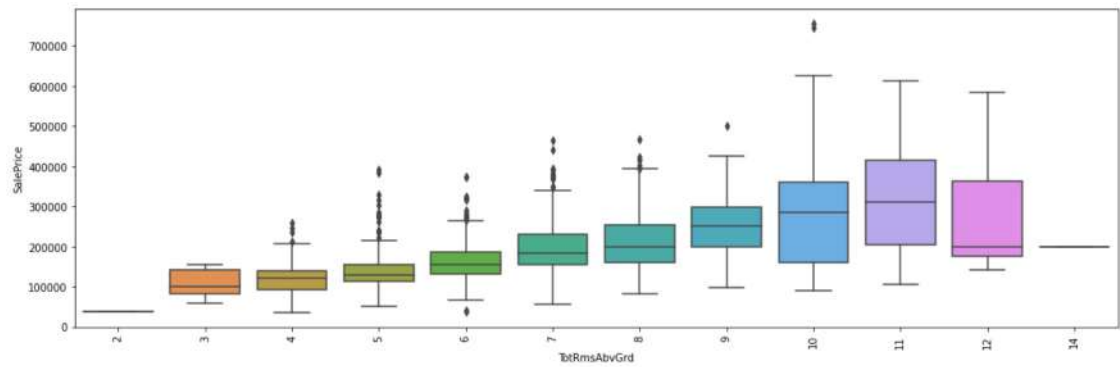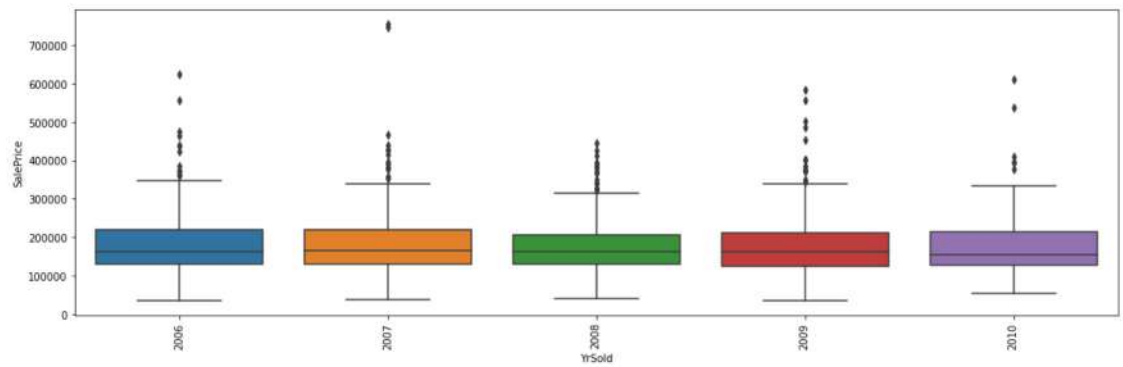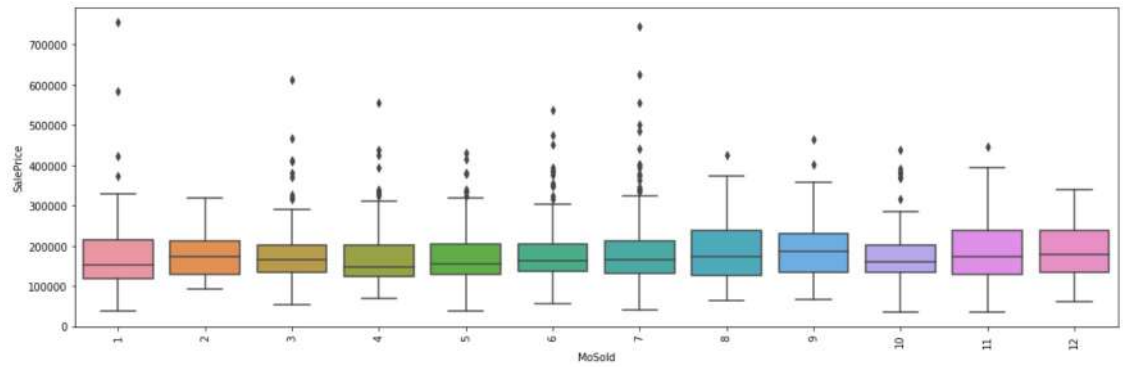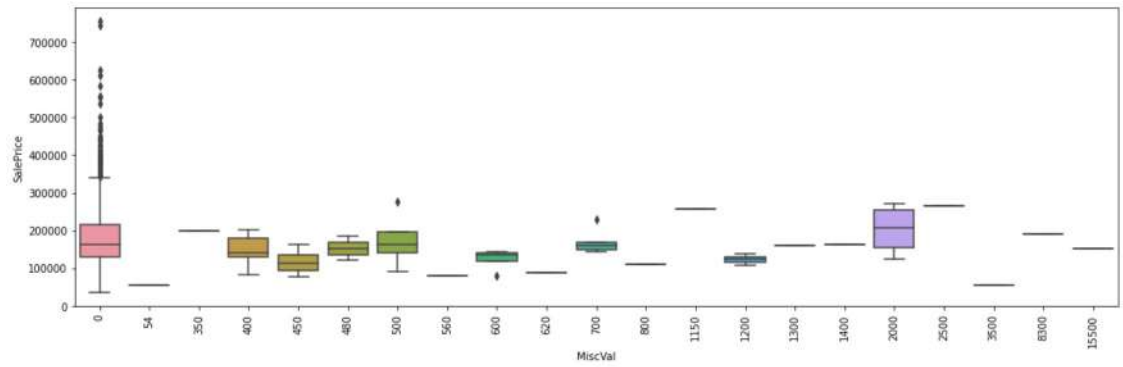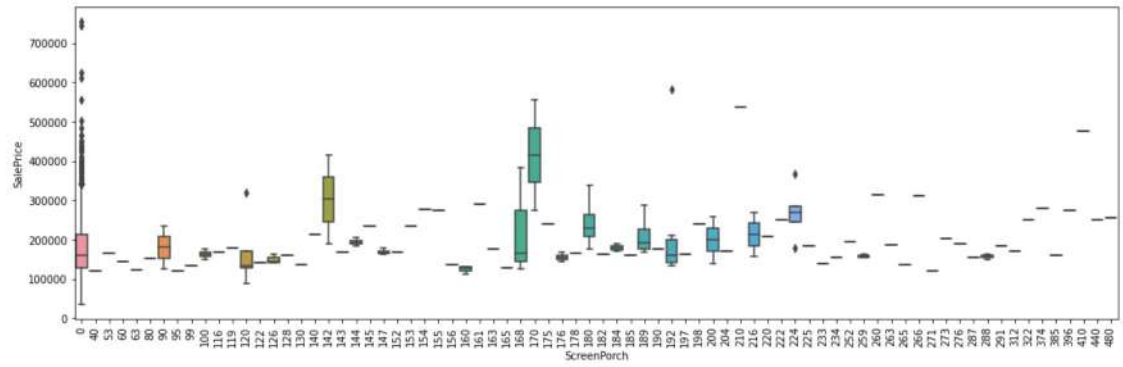
In [95]:
```
dataset.corr()['SalePrice'].apply(lambda x: 'Okay For model' if x > 0.5 e
lse 'Not Okay').sort_values(ascending=False)
```

Out[95]:
```
TotRmsAbvGrd       Okay For model
OverallQual        Okay For model
SalePrice          Okay For model
YearRemodAdd       Okay For model
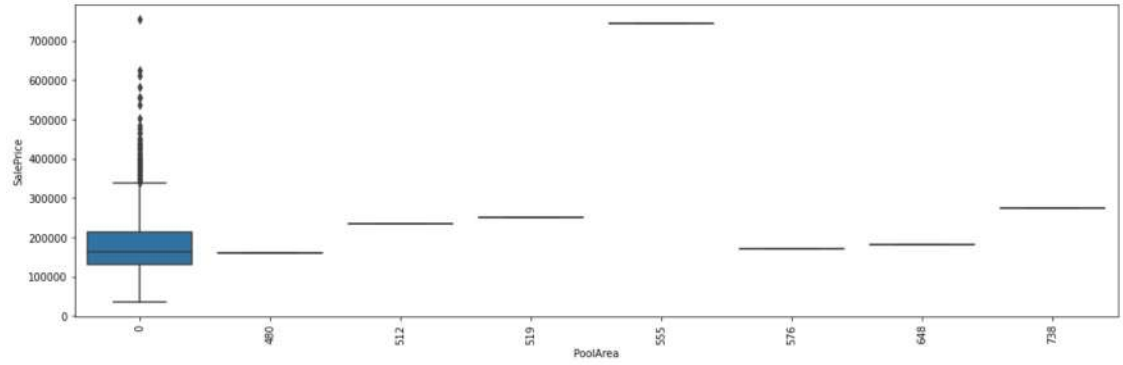GarageArea         Okay For model
TotalBsmtSF        Okay For model
1stFlrSF           Okay For model
GarageCars         Okay For model
FullBath           Okay For model
GrLivArea          Okay For model
EnclosedPorch            Not Okay
WoodDeckSF               Not Okay
OpenPorchSF              Not Okay
MSSubClass               Not Okay
3SsnPorch                Not Okay
ScreenPorch              Not Okay
MiscVal                  Not Okay
MoSold                   Not Okay
YrSold                   Not Okay
PoolArea                 Not Okay
BedroomAbvGr             Not Okay
Fireplaces               Not Okay
KitchebvGr               Not Okay
LotArea                  Not Okay
HalfBath                 Not Okay
BsmtHalfBath             Not Okay
BsmtFullBath             Not Okay
LowQualFinSF             Not Okay
2ndFlrSF                 Not Okay
BsmtUnfSF                Not Okay
BsmtFinSF2               Not Okay
BsmtFinSF1               Not Okay
OverallCond              Not Okay
ExterQual                Not Okay
Name: SalePrice, dtype: object
```

TotRmsAbvGrd OverallQual SalePrice YearRemodAdd GarageArea
TotalBsmtSF 1stFlrSF GarageCars FullBath GrLivArea

In [35]:
```
X = dataset[['TotRmsAbvGrd','OverallQual','YearRemodAdd','GarageArea','To
talBsmtSF','1stFlrSF','GarageCars','FullBath','GrLivArea']]
```

```python
for column in X:
    print(f'{column} :{X[column].unique()}')
```

```
TotRmsAbvGrd :[ 8  6  7  9  5 11  4 10 12  3  2 14]
OverallQual :[ 7  6  8  5  9  4 10  3  1  2]
YearRemodAdd :[2003 1976 2002 1970 2000 1995 2005 1973 1950 1965 2006 19
62 2007 1960
 2001 1967 2004 2008 1997 1959 1990 1955 1983 1980 1966 1963 1987 1964
 1972 1996 1998 1989 1953 1956 1968 1981 1992 2009 1982 1961 1993 1999
 1985 1979 1977 1969 1958 1991 1971 1952 1975 2010 1984 1986 1994 1988
 1954 1957 1951 1978 1974]
GarageArea :[ 548  460  608  642  836  480  636  484  468  205  384  736
352  840
  576  516  294  853  280  534  572  270  890  772  319  240  250  271
  447  556  691  672  498  246    0  440  308  504  300  670  826  386
  388  528  894  565  641  288  645  852  558  220  667  360  427  490
  379  297  283  509  405  758  461  400  462  420  432  506  684  472
  366  476  410  740  648  273  546  325  792  450  180  430  594  390
  540  264  530  435  453  750  487  624  471  318  766  660  470  720
  577  380  434  866  495  564  312  625  680  678  726  532  216  303
  789  511  616  521  451 1166  252  497  682  666  786  795  856  473
  398  500  349  454  644  299  210  431  438  675  968  721  336  810
  494  457  818  463  604  389  538  520  309  429  673  884  868  492
  413  924 1053  439  671  338  573  732  505  575  626  898  529  685
  281  539  418  588  282  375  683  843  552  870  888  746  708  513
 1025  656  872  292  441  189  880  676  301  474  706  617  445  200
  592  566  514  296  244  610  834  639  501  846  560  596  600  373
  947  350  396  864  304  784  696  569  628  550  493  578  198  422
  228  526  525  908  499  508  694  874  164  402  515  286  603  900
  583  889  858  502  392  403  527  765  367  426  615  871  570  406
  590  612  650 1390  275  452  842  816  621  544  486  230  261  531
  393  774  749  364  627  260  256  478  442  562  512  839  330  711
 1134  416  779  702  567  832  326  551  606  739  408  475  704  983
  768  632  541  320  800  831  554  878  752  614  481  496  423  841
  895  412  865  630  605  602  618  444  397  455  409  820 1020  598
  857  595  433  776 1220  458  613  456  436  812  686  611  425  343
  479  619  902  574  523  414  738  354  483  327  756  690  284  833
  601  533  522  788  555  689  796  808  510  255  424  305  368  824
  328  160  437  665  290  912  905  542  716  586  467  582 1248 1043
  254  712  719  862  928  782  466  714 1052  225  234  324  306  830
  807  358  186  693  482  813  995  757 1356  459  701  322  315  668
  404  543  954  850  477  276  518 1014  753 1418  213  844  860  748
  248  287  825  647  342  770  663  377  804  936  722  208  662  754
  622  620  370 1069  372  923  192]
TotalBsmtSF :[ 856 1262  920  756 1145  796 1686 1107  952  991 1040 117
5  912 1494
 1253  832 1004    0 1114 1029 1158  637 1777 1060 1566  900 1704 1484
  520  649 1228 1234 1398 1561 1117 1097 1297 1057 1088 1350  840  938
 1150 1752 1434 1656  736  955  794  816 1842  384 1425  970  860 1410
  780  530 1370  576 1143 1947 1453  747 1304 2223  845 1086  462  672
 1768  440  896 1237 1563 1065 1288  684  612 1013  990 1235  876 1214
  824  680 1588  960  458  950 1610  741 1226 1053  641  789  793 1844
  994 1264 1809 1028  729 1092 1125 1673  728  732 1080 1199 1362 1078
  660 1008  924  992 1063 1267 1461 1907  928  864 1734  910 1490 1728
  715  884  969 1710  825 1602 1200  572  774 1392 1232 1572 1541  882
 1149  644 1617 1582  720 1064 1606 1202 1151 1052 2216  968  504 1188
 1593  853  725 1431  855 1726 1360  755 1713 1121 1196  617  848 1424
 1140 1100 1157 1212  689 1070 1436  686  798 1248 1498 1010  713 2392
  630 1203  483 1373 1194 1462  894 1414  996 1694  735  540  626  948
 1845 1020 1367 1444 1573 1302 1314  975 1604  963 1482  506  926 1422
  802  740 1095 1385 1152 1240 1560 2121 1160  807 1468 1575  625  858
  698 1079  768  795 1416 1003  702 1165 1470 2000  700  319  861 1896
  697  972 2136  716 1347 1372 1249 1136 1502 1162  710 1719 1383  844
```

```
        596 1056 3206 1358  943 1499 1922 1536 1208 1215  967  721 1684  536
        958 1478  764 1848 1869  616  624  940 1142 1062  888  883 1394 1099
       1268  953  744  608  847  683  870 1580 1856  982 1026 1293  939  784
       1256  658 1041 1682  804  788 1144  961 1260 1310 1141  806 1281 1034
       1276 1340 1344  988  651 1518  907  901  765  799  648 3094 1440 1258
        915 1517  930  813 1533  872 1242 1364  588  709  560 1375 1277 1626
       1488  808  547 1976 2153 1705 1833 1792 1216  999 1113 1073  954  264
       1269  190 3200  866 1501  777 1218 1368 1084 2006 1244 3138 1379 1257
       1452  528 2035  611  707  880 1051 1581 1838 1650  723  654 1204 1069
       1709  998  993 1374 1389 1163 1122 1496  846  372 1164 1050 2042 1868
       1437  742  770 1722 1814 1430 1058  908  600  965 1032 1299 1120  936
        783 1822 1522  980 1116  978 1156  636 1554 1386  811 1520 1952 1766
        981 1094 2109  525  776 1486 1629 1138 2077 1406 1021 1408  738 1477
       2046  923 1291 1195 1190  874  551 1419 2444 1210  927 1112 1391 1800
        360 1473 1643 1324  270  859  718 1176 1311  971 1742  941 1698 1584
       1595  868 1153  893 1349 1337 1720 1479 1030 1318 1252  983 1860  836
       1935 1614  761 1413  956  712  650  773 1926  731 1417 1024  849 1442
       1649 1568  778 1489 2078 1454 1516 1067 1559 1127 1390 1273  918 1763
       1090 1054 1039 1148 1002 1638  105  676 1184 1109  892 2217 1505 1059
        951 2330 1670 1623 1017 1105 1001  546  480 1134 1104 1272 1316 1126
       1181 1753  964 1466  925 1905 1500  585 1632  819 1616 1161  828  945
        979  561  696 1330  817 1098 1428  673 1241  944 1225 1266 1128  485
       1930 1396  916  822  750 1700 1007 1187  691 1574 1680 1346  985 1657
        602 1022 1082  810 1504 1220 1132 1565 1338 1654 1620 1055  800 1306
       1475 2524 1992 1193  973  854  662 1103 1154  942 1048  727  690 1096
       1459 1251 1247 1074 1271  290  655 1463 1836  803  833  408  533 1012
       1552 1005 1530  974 1567 1006 1042 1298  704  932 1219 1296 1198  959
       1261 1598 1683  818 1600 2396 1624  831 1224  663  879  815 1630 2158
        931 1660  559 1300 1702 1075 1361 1106 1476 1689 2076  792 2110 1405
       1192  746 1986  841 2002 1332  935 1019  661 1309 1328 1085 6110 1246
        771  976 1652 1278 1902 1274 1393 1622 1352  420 1795  544 1510  911
        693 1284 1732 2033  570 1980  814  873  757 1108 2633 1571  984 1205
        714 1746 1525  482 1356  862  839 1286 1485 1594  622  791  708 1223
        913  656 1319 1932  539 1221 1542]
1stFlrSF :[ 856 1262  920  961 1145  796 1694 1107 1022 1077 1040 1182
912 1494
       1253  854 1004 1296 1114 1339 1158 1108 1795 1060 1600  900 1704  520
        649 1228 1234 1700 1561 1132 1097 1297 1057 1152 1324 1328  884  938
       1150 1752 1518 1656  736  955  794  816 1842 1360 1425  983  860 1426
        780  581 1370  902 1143 2207 1479  747 1304 2223  845  885 1086  840
        526  952 1072 1768  682 1337 1563 1065  804 1301  684  612 1013  990
       1235  964 1260  905  680 1588  960  835 1225 1610  977 1535 1226 1053
       1047  789  997 1844 1216  774 1282 2259 1436  729 1092 1125 1699  728
        988  772 1080 1199 1586  958  660 1327 1721 1682 1214 1959  928  864
       1734  910 1501 1728  970  875  896  969 1710 1252 1200  572  991 1392
       1232 1572 1541  882 1149  808 1867 1707 1064 1362 1651 2158 1164 2234
        968  769  901 1340  936 1217 1224 1593 1549  725 1431  855 1726  929
       1713 1121 1279  865  848  720 1442 1696 1100 1180 1212  932  689 1236
        810 1137 1248 1498 1010  811 2392  630  483 1555 1194 1490  894 1414
       1014  798 1566  866  889  626 1222 1872  908 1375 1444 1306 1625 1302
       1314 1005 1604  963 1382 1482  926  764 1422  802 1052  778 1113 1095
       1363 1632 1560 2121 1156 1175 1468 1575  625 1085  858  698 1079 1148
       1644 1003  975 1041 1336 1210 1675 2000 1122 1035  861 1944  697  972
        793 2036  832  716 1153 1088 1372 1472 1249 1136 1553 1163 1898  803
       1719 1383 1445  596 1056 1629 1358  943 1619 1922 1536 1621 1215  993
        841 1684  536 1478 1848 1869 1453  616 1192 1167 1142 1352  495  790
        672 1394 1268 1287  953 1120  752 1319  847  904  914 1580 1856 1007
       1026  939  784 1269  658 1742  788  735 1144  876 1112 1288 1310 1165
        806 1620 1166 1071 1050 1276 1028  756 1344 1602 1470 1196  707  907
       1208 1412  765  827  734  694 2402 1440 1128 1258  933 1689 1888  956
```

```
 679  813 1533  888  786 1242  624 1663  833  979  575  849 1277 1634
1502 1161 1976 1652 1493 2069 1718 1131 1850 1792  916  999 1073 1484
1766  886 3228 1133  899 1801 1218 1368 2020 1378 1244 3138 1266 1476
 605 2515 1509  751  334  820  880 1159 1601 1838 1680  767  664 1377
 915  768  825 1069 1717 1126 1006 1048  897 1557 1389  996 1134 1496
 846  576  877 1320  703 1429 2042 1521  989 2028  838 1473  779  770
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1437  738 1839  792 2046  923 1291 1668 1195 1190  874  551 1419 2444
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1616 1146  948 1349 1464 1720 1038  742  757 1506 1836 1690 1220 1117
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1818 1992 1047  789 1517 1844 1855 1430 2696 2259 2320 1458 1092 1125
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1552 2392 1302 2520  987 1555 1194 2794  894 1960 1414 1744 1487 1566
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1969 1072 1976 1652  970 1493 2643 1131 1850 1826 1216  999 1073 1484
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1949  910 2610 2224 1155 1090 2230  892 1712 1393 2217 1683 1068  951
2240 2364 1670  902 1063 1636 2057 2274 1015 2002  480 1229 2127 2200
1617 1686 2374 1978 1788 2236 1466  925 1905 1500 2069 1971 1962 2403
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1940 2030 1851 1050  944  691 1504  985 1657 1522 1271 1022 1082 1132
2898 1264 3082 1654  954 1803 2329 2524 2868 1771  930 1977 1989 1523
1364 2184 1991 1338 2337 1103 1154 2260 1571 1611 2521  893 1240 1740
1459 1251 1247 1088  438  950 2622 2021 1690 1658 1964  833 1012  698
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1580 1876 1671 2108 3627 1261 3086 2345 1343 1124 2514 4476 1130 1221
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1490 1138 1933 1702 1507 2620 1190 1188 1784 1948 1141 1173 2076 1553
2058 1405  874 2167 1987 1166 1675 1889 2018 3447 1524 1357 1395 2447
1659 1970 2372 5642 1246 1983 2526 1708 1122 1274 2810 2599 2112 1787
1923  708  774 2792 1334  693 1861  872 2169 1913 2156 2634 3238 1865
1078 1980 2601 1738 1475 1374 2633  790 2117 1762 2784 1746 1584 1912
2482 1687 1513 1608 2093 1840 1848 1569 2450 2201  804 1537 1932 1725
2555 2007  913 1346 2073 2340 1256]
```

In [37]: `Y = dataset['SalePrice']`

In [38]: `Y.unique()`

```
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```

In [51]:
```python
from sklearn.model_selection import train_test_split
X_train,X_test,y_train,y_test = train_test_split(X,Y,test_size=0.3,random_state=1)
```

In [52]:
```python
X_train.shape
```

Out[52]: (1022, 9)

In [53]:
```python
X_test.shape
```

Out[53]: (438, 9)

In [54]:
```python
from sklearn.linear_model import LinearRegression
```

In [55]:
```python
lr = LinearRegression()
```

In [56]:
```python
lr.fit(X_train,y_train)
```

Out[56]: LinearRegression()

```
In [57]: predict = lr.predict(X_test)
         predict
```

Out[57]: array([215912.15610454, 164649.26897325, 104711.5601904 , 44484.7047188
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5,
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,
```

```
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      3,
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      6,
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      5,
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      7,
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      4,
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      8,
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      3,
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      2,
          131197.42219078,  31754.38454015, 179495.02458187,  80050.4653152
      2,
          364466.94056292, 246691.15006615, 249609.03833248, 185739.9962422
      ,
          189989.67444723, 256712.363197621)
```

In [58]:
```python
# regression coefficients
print('Coefficients: ', lr.coef_)

# variance score: 1 means perfect prediction
print('Variance score: {}'.format(lr.score(X_test, y_test)))
print(f"intercept: {lr.intercept_}")
```

```
Coefficients:  [1.94360621e+03 2.06169192e+04 3.96184109e+02 9.04891525
e+00
 2.05115150e+01 1.37056389e+01 1.67163988e+04 1.75274701e+03
 3.25620625e+01]
Variance score: 0.8122905206844774
intercept: -868120.1382704929
```

In [59]:
```python
from sklearn.metrics import mean_squared_error
import math
```

```
In [60]: mse = mean_squared_error(y_test,predict)
         print(f'Mean Square error is :{mse}')
```

```
Mean Square error is :1340302524.9994855
```

```
In [61]: rmse = math.sqrt(mse)
         print(f'Root Mean Square Error is: {rmse}')
```

```
Root Mean Square Error is: 36610.1423788475
```

```
In [62]: from sklearn.linear_model import Ridge
         rid = Ridge()
         rid.fit(X_train,y_train)
         y_pred = rid.predict(X_test)
         from sklearn.metrics import r2_score
         mse = mean_squared_error(y_test,y_pred)
         print(f'score is :{r2_score(y_test,y_pred)}')
         print(f'Mean Square error is :{mse}')
         rmse = math.sqrt(mse)
         print(f'Root Mean Square Error is: {rmse}')
```

```
score is :0.8123475599891272
Mean Square error is :1339895247.0914907
Root Mean Square Error is: 36604.57959178729
```

```
In [84]: X_Train_np= X_train.to_numpy()
         X_Test_np = X_test.to_numpy()
         Y_Train_np = y_train.to_numpy()
         Y_Test_np = y_test.to_numpy()
```

```
In [85]: X_Train_np.shape, X_Test_np.shape, Y_Train_np.shape, Y_Test_np.shape
```

```
Out[85]: ((1022, 9), (438, 9), (1022,), (438,))
```

```
In [86]: #Passes Training and Testing data with array valuue
         from sklearn.ensemble import RandomForestClassifier
         rf = RandomForestClassifier(max_depth=15)
         rf.fit(X_Train_np,Y_Train_np)
         preds = rf.predict(X_Test_np)
         print('Model Score: ', rf.score(X_Train_np,Y_Train_np))
         print('R2 Score:',r2_score(Y_Test_np,preds))
```

```
Model Score:  0.9882583170254403
R2 Score: 0.8107163827784275
```

```
In [87]: #Passes Training and Testing data without array valuue
         from sklearn.ensemble import RandomForestClassifier
         rf2 = RandomForestClassifier(max_depth=15)
         rf2.fit(X_train,y_train)
         preds = rf2.predict(X_test)
         print('Model Score: ', rf.score(X_train,y_train))
         print('R2 Score:',r2_score(y_test,preds))
```

```
Model Score:  0.9882583170254403
R2 Score: 0.7637655826712734
```

```
In [ ]:
```