Data Cleaning In SQL Project

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2024-01-04

Introduction

This is a data cleaning SQL based project using the Nashville Housing dataset. This purpose of this project is to showcase my data cleaning skills in SQL. Although this report and code chuncks are viewed in an`RMD` formating, this project had been previously executed in Microsoft SQL Server Management Studio.

Installing Packages and Libraries for the purpose of this project, certain packages and libraries will be loaded to make `R` compatible with `MSSQL` databases connections. For this project, the `DBI`, `odbc` and `RODBC` packages will be installed and their subsequent packages loaded.

```
library(DBI)
```

```
library(odbc)
```

```
library(RODBC)
```

Connecting to the datbase Server a database connection will be established by creating a `DSN` connection to SQL_Server locally hosted on my desktop. This connection will be named `con2`

```
con2 <- dbConnect(odbc :: odbc(), "SQL_Server_DSN")
```

viewiing the table to be worked with using a basic SQL query, I will preview the data provided in the database

```
Select *
From [NashvilleHousing2]
```

Table 1: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	SalesID	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath
53922	171 00 0 152.00	SINGLE FAMILY	5900 CLOVERLAND DR, BRENTWOOD	2016-09-20	300000	2016100060106043	N	CHANCEY, MATTHEW RAY & LEANN KAY & ET AL	5900 CLOVERLAND DR, BRENTWOOD, TN	1.10	URBAN SERVICES DISTRICT	82200	95400	177800	1931	3	1	0
25778	171 00 0 202.00	VACANT RESIDENTIAL LAND	CLOVERLAND DR, BRENTWOOD	2015-01-16	42900	2015012000005484	N	NA	0 CLOVERLAND DR, BRENTWOOD, TN	0.93	URBAN SERVICES DISTRICT	42900	0	42900	NA	NA	0	0
23390	171 02 0 013.00	SINGLE FAMILY	5672 OAKES DR, BRENTWOOD	2014-11-01	250000	2014110001030531	N	CARINI, KEVIN F.	5672 OAKES DR, BRENTWOOD, TN	1.36	URBAN SERVICES DISTRICT	163000	180700	227000	1984	3	2	0
7586	171 02 0A 002.00	RESIDENTIAL CONDO	103 VILLA VIEW CT, BRENTWOOD	2013-09-12	169000	2013091600097186	N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9419	171 02 0A 003.00	CONDO	105 VILLA VIEW CT, BRENTWOOD	2013-11-22	195000	2013112100126781	N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11405	171 02 0A 008.00	CONDO	115 VILLA VIEW CT, BRENTWOOD	2014-01-22	165000	2014012700007078	N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19129	171 02 0A 011.00	RESIDENTIAL CONDO	104 VILLA VIEW CT, BRENTWOOD	2014-08-28	190000	2014090400080767	N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
53923	171 02 0A 011.00	RESIDENTIAL CONDO	104 VILLA VIEW CT, BRENTWOOD	2016-09-09	255000	2016091500096930	N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath
38945	171 02 0A 014.00	RESIDENTIAL CONDO	0 VILLA VIEW CT, BRENTWOOD	2015-10-26	220000	20151029-0110208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
46197	171 02 0A 018.00	RESIDENTIAL CONDO	0 VILLA VIEW CT, BRENTWOOD	2016-04-27	232500	20160506-0045160	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

the next line of queries is to order the data by the land use type. The result is that the dataset is ordered by the land use type in alphabetical order.

```
Select *
From NashvilleHousing2
Order by LandUse
```

Table 2: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath
30479	092 04 0 308.00	APARTMENT: LOW RISE (BUILT SINCE 1960)	1613 HERMAN ST, NASHVILLE	2015-05-07	200000	20150508-0042350	E3 CONSTRUCTION SERVICES, LLC	1601 120 HERMAN ST, NASHVILLE, TN	1.21	URBAN SERVICES DISTRICT	72000	247900	324200	1958	0	0	0
30480	092 04 0 309.00	APARTMENT: LOW RISE (BUILT SINCE 1960)	1611 HERMAN ST, NASHVILLE	2015-05-07	200000	20150508-0042350	E3 CONSTRUCTION SERVICES, LLC	1601 101 HERMAN ST, NASHVILLE, TN	1.13	URBAN SERVICES DISTRICT	69000	589900	662400	1958	0	0	0
25424	106 00 0 028.00	CHURCH	938 HAVENHILL DR, NASHVILLE	2014-12-19	612500	20141223-0117321	OLIVE BRANCH MISSIONARY BAPTIST CHURCH	938 HAVENHILL DR, NASHVILLE, TN	5.67	URBAN SERVICES DISTRICT	102100	1020200	1530300	1965	3	1	1

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath
7684	092 13 0 020.00	CHURCH	3808 PARK AVE, NASHVILLE	2013-09-30	400000	20131003-0103801		3808 PARK AVENUE PARTNERS, LLC	3808 PARK AVE, NASHVILLE, TN	0.69	URBAN SERVICES DISTRICT	104000	285000	389000	1972	NA	0	0
2519	072 15 0 244.00	CHURCH	1530 RIVERSIDE DR, NASHVILLE	2014-12-16	750000	20141222-0116716		SNAPSHOT DEVELOPMENT, LLC	1530 RIVERSIDE DR, NASHVILLE, TN	0.39	URBAN SERVICES DISTRICT	169900	253600	423500	1937	NA	0	0
21185	159 00 0 079.00	CHURCH	5606 GRANNY WHITE PIKE, BRENTWOOD	2014-09-22	452500	20140925-0088131		YOUNG, ALAN	5606 GRANNY WHITE PIKE, BRENTWOOD, TN	1.37	GENERAL SERVICES DISTRICT	240000	249600	489600	1965	4	2	1
20130	073 00 0 042.00	CHURCH	2800 MCGAVOCK PIKE, NASHVILLE	2014-08-15	1235000	20140818-0074498		CATHOLIC DIOCESE OF NASHVILLE	2800 MCGAVOCK PIKE, NASHVILLE, TN	34.64	URBAN SERVICES DISTRICT	386400	2971800	3358200	1980	NA	0	0
54331	142 00 0 109.00	CHURCH	215 BELLEVUE RD, NASHVILLE	2016-09-30	950000	20161004-0104455		CRJ EVENT CENTER, LLC	215 BELLEVUE RD, NASHVILLE, TN	2.76	GENERAL SERVICES DISTRICT	345100	582600	927700	1971	NA	0	0
51686	105 13 0 416.00	CHURCH	2314 9TH AVE S, NASHVILLE	2016-07-15	460000	20160718-0073583		JONES, PETER & CATHERINE	2314 9TH AVE S, NASHVILLE, TN	0.38	URBAN SERVICES DISTRICT	140000	349000	489000	1950	NA	0	0
730	082 16 0 395.00	CHURCH	816 SHELBY AVE, NASHVILLE	2013-02-28	140000	20130228-0019975		BURT, STEVE C.	816 SHELBY AVE, NASHVILLE, TN	0.20	URBAN SERVICES DISTRICT	60000	136000	196000	1940	0	0	0

Changing the format of saledate in raw data from datetime format to date as time is not neccesary in this data, also, the presence of time makes the data hard to read.

```
Select
SaleDate, CONVERT(date, SaleDate) as NewSaleDate
from NashvilleHousing2
```

Table 3: Displaying records 1 - 10

SaleDate	NewSaleDate
2016-09-20	2016-09-20
2015-01-16	2015-01-16
2014-11-01	2014-11-01
2013-09-12	2013-09-12
2013-11-22	2013-11-22
2014-01-22	2014-01-22
2014-08-28	2014-08-28
2016-09-09	2016-09-09
2015-10-26	2015-10-26
2016-04-27	2016-04-27

We see the result of the query as two columns containing the NewSaleDate column

the `NashvilleHousing2 dataset will then be updated with the`update‘ function

```
Update NashvilleHousing2
Set SaleDate = CONVERT(Date, SaleDate)
```

a new column named `SaleDateConverted` is also added to allow for readability of the data

```
Alter Table NashvilleHousing2
Add SaleDateConverted Date;
```

the table will then be updated with the code chunk below and we can view the update of the table with the subsequent code chunk.

```
Update NashvilleHousing2
Set SaleDateConverted = Convert(date, SaleDate)
```

```
Select *
From NashvilleHousing2
```

Table 4: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted
53921	071 00 0 152.00	SINGLE FAMILY	5900 CLOVERLAND DR, BRENTWOOD	2016-09-20	300000	20161006-0106043	No	CHANCEY MATTHEW RAY & LEANN KAY & ET AL	5900 CLOVERLAND DR, BRENTWOOD, TN	1.10	URBAN SERVICES DISTRICT	82200	95400	177800	1031	3	1	0	2016-09-20

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted
25778	171 00 0 202.00	VACANT RESIDENTIAL LAND	CLOVERLAND DR, BRENTWOOD	2015-01-16	[illegible]	20150120-0005484	Yes	NA	0 CLOVERLAND DR, BRENTWOOD, TN	0.93	URBAN SERVICES DISTRICT	429000		429000	NA	NA	0	0	2015-01-16
23390	171 02 0 013.00	SINGLE FAMILY	5672 OAKES DR, BRENTWOOD	2014-11-01	250000	20141110-0103531	No	CARINI, KEVIN F.	5672 OAKES DR, BRENTWOOD, TN	1.36	URBAN SERVICES DISTRICT	463000	1807000	2270000	1984	3	2	0	2014-11-01
7586	171 02 0A 002.00	RESIDENTIAL CONDO	103 VILLA VIEW CT, BRENTWOOD	2013-09-12	169000	20130916-0097186	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2013-09-12
9419	171 02 0A 003.00	CONDO	105 VILLA VIEW CT, BRENTWOOD	2013-11-22	195000	20131216-0126781	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2013-11-22
11405	171 02 0A 008.00	CONDO	115 VILLA VIEW CT, BRENTWOOD	2014-01-22	165000	20140127-0007078	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2014-01-22
19129	171 02 0A 011.00	RESIDENTIAL CONDO	124 VILLA VIEW CT, BRENTWOOD	2014-08-28	190000	20140904-0080767	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2014-08-28
53923	171 02 0A 011.00	RESIDENTIAL CONDO	124 VILLA VIEW CT, BRENTWOOD	2016-09-09	255000	20160915-0096930	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-09-09
38945	171 02 0A 014.00	RESIDENTIAL CONDO	116 VILLA VIEW CT, BRENTWOOD	2015-10-26	220000	20151029-0110208	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2015-10-26

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted
46197	171 02 0A 018.00	RESIDENTIAL CONDO	118 VILLA VIEW CT, BRENTWOOD	2016-04-27	232500	20160506-0045160	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-04-27

The table has been confirmed updated with the neccesary column.

Next, I will like to see what datapoints have nulls in them and how they can be fixed.

```sql
Select *
From NashvilleHousing2
Where PropertyAddress is null
```

Table 5: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted
43076	025 07 0 031.00	SINGLE FAMILY	NA	2016-01-15	179900	20160120-0005776	No	COSTNER, FRED & CAROLYN	410 ROSEHILL CT, GOODLETTSVILLE, TN	0.96	CITY OF GOODLETTSVILLE	30000	70000	100000	1964	3	1	0	2016-01-15
39432	026 01 0 069.00	VACANT RESIDENTIAL LAND	NA	2015-10-23	153000	20151028-0109602	No	SHACKLEFORD, MICHAEL C., JR.	144 TWO MILE PIKE, GOODLETTSVILLE, TN	0.17	CITY OF GOODLETTSVILLE	21100	121600	142700	2015	3	2	0	2015-10-23
45290	026 05 0 017.00	SINGLE FAMILY	NA	2016-03-29	155000	20160330-0029941	No	TRIPP, MARVIN S. & DEBORAH YOUNG	208 EAST AVE, GOODLETTSVILLE, TN	0.20	CITY OF GOODLETTSVILLE	21100	130200	151300	2008	3	2	0	2016-03-29
53147	026 06 0A 038.00	RESIDENTIAL CONDO	NA	2016-08-25	144900	20160831-0091567	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-08-25
43080	033 06 0 041.00	SINGLE FAMILY	NA	2016-01-04	170000	20160107-0001526	No	FRANK, ZACHARY & NIKI	1129 CAMPBELL RD, GOODLETTSVILLE, TN	0.24	GENERAL SERVICES DISTRICT	35000	110500	145500	2000	3	2	0	2016-01-04

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted
45296	033 06 0A 002.00	SINGLE FAMILY	NA	2016-03-29	210000	20160331-0030709	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-03-29
48730	033 15 0 123.00	SINGLE FAMILY	NA	2016-05-05	199900	20160506-0045368	NA	COLEMAN AARON A. & CECIL, CORRIE J.	438 W CAMPBELL RD, GOODLETTSVILLE, TN	1.39	GENERAL SERVICES DISTRICT	44100	90300	135300	1954	2	1	0	2016-05-05
36530	034 03 0 059.00	SINGLE FAMILY	NA	2015-08-13	245000	20150819-0083759	NA	DILICK, JOHN MARK & ANNETTE A.	2117 PAULA DR, MADISON, TN	1.01	GENERAL SERVICES DISTRICT	32000	170000	228300	1964	4	3	0	2015-08-13
46910	034 07 0B 015.00	VACANT RESIDENTIAL LAND	NA	2016-04-27	40000	20160504-0020905	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-04-27
44260	034 16 0A 004.00	VACANT RESIDENTIAL LAND	NA	2016-02-04	130000	20160205-0011327	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-02-04

29 rows of data where found where the property address is null.

In ordr to figure out if the null data stemmed from simple ommisions, I use a join statement to check for identical parcelIDs and join them.

```
Select a.ParcelID, a.PropertyAddress, b.ParcelID, b.PropertyAddress
From Portfolio_Project..NashvilleHousing2 a
Join Portfolio_Project..NashvilleHousing2 b
On a.ParcelID = b.ParcelID
    And a.[UniqueID ] <> b.[UniqueID ]
    Where a.PropertyAddress is null
```

Table 6: Displaying records 1 - 10

ParcelID	PropertyAddress	ParcelID	PropertyAddress
025 07 0 031.00	NA	025 07 0 031.00	410 ROSEHILL CT, GOODLETTSVILLE
026 01 0 069.00	NA	026 01 0 069.00	141 TWO MILE PIKE, GOODLETTSVILLE

ParcelID	PropertyAddress	ParcelID	PropertyAddress
026 05 0 017.00	NA	026 05 0 017.00	208 EAST AVE, GOODLETTSVILLE
026 06 0A 038.00	NA	026 06 0A 038.00	109 CANTON CT, GOODLETTSVILLE
033 06 0 041.00	NA	033 06 0 041.00	1129 CAMPBELL RD, GOODLETTSVILLE
033 06 0A 002.00	NA	033 06 0A 002.00	1116 CAMPBELL RD, GOODLETTSVILLE
033 15 0 123.00	NA	033 15 0 123.00	438 W CAMPBELL RD, GOODLETTSVILLE
034 03 0 059.00	NA	034 03 0 059.00	2117 PAULA DR, MADISON
034 03 0 059.00	NA	034 03 0 059.00	2117 PAULA DR, MADISON
034 07 0B 015.00	NA	034 07 0B 015.00	2524 VAL MARIE DR, MADISON

The result is a table where property addresses have been parsed based on the parcel IDs found for properties in the dataset.

```
Select a.ParcelID, a.PropertyAddress, b.ParcelID, b.PropertyAddress, ISNULL(a.PropertyAddress, b.Proper
From Portfolio_Project..NashvilleHousing2 a
Join Portfolio_Project..NashvilleHousing2 b
On a.ParcelID = b.ParcelID
    And a.[UniqueID ] <> b.[UniqueID ]
    Where a.PropertyAddress is null
```

Table 7: Displaying records 1 - 10

ParcelID	PropertyAddress	ParcelID	PropertyAddress	
025 07 0 031.00	NA	025 07 0 031.00	410 ROSEHILL CT, GOODLETTSVILLE	410 ROSEHILL CT, GOODLETTSVILLE
026 01 0 069.00	NA	026 01 0 069.00	141 TWO MILE PIKE, GOODLETTSVILLE	141 TWO MILE PIKE, GOODLETTSVILLE
026 05 0 017.00	NA	026 05 0 017.00	208 EAST AVE, GOODLETTSVILLE	208 EAST AVE, GOODLETTSVILLE
026 06 0A 038.00	NA	026 06 0A 038.00	109 CANTON CT, GOODLETTSVILLE	109 CANTON CT, GOODLETTSVILLE
033 06 0 041.00	NA	033 06 0 041.00	1129 CAMPBELL RD, GOODLETTSVILLE	1129 CAMPBELL RD, GOODLETTSVILLE
033 06 0A 002.00	NA	033 06 0A 002.00	1116 CAMPBELL RD, GOODLETTSVILLE	1116 CAMPBELL RD, GOODLETTSVILLE
033 15 0 123.00	NA	033 15 0 123.00	438 W CAMPBELL RD, GOODLETTSVILLE	438 W CAMPBELL RD, GOODLETTSVILLE
034 03 0 059.00	NA	034 03 0 059.00	2117 PAULA DR, MADISON	2117 PAULA DR, MADISON
034 03 0 059.00	NA	034 03 0 059.00	2117 PAULA DR, MADISON	2117 PAULA DR, MADISON
034 07 0B 015.00	NA	034 07 0B 015.00	2524 VAL MARIE DR, MADISON	2524 VAL MARIE DR, MADISON

with the below code chunk, the dataset will be updated using the datapoints gotten using the unique ID

```
Update a
Set PropertyAddress = ISNULL(a.PropertyAddress, b.PropertyAddress)
From Portfolio_Project..NashvilleHousing2 a
Join Portfolio_Project..NashvilleHousing2 b
    On a.ParcelID = b.ParcelID
    and  a.[UniqueID ] <> b.[UniqueID ]
        WHEre a.PropertyAddress is null
```

I will then check to confirm the dataset has been cleaned

```
Select *
        From NashvilleHousing2
        Where PropertyAddress is null
```

Table 8: 0 records

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted

all null datapoints have been corrected for the property address.

Up next, I will break the property id into seperate columns for readability

```
Select PropertyAddress
From NashvilleHousing2
```

Table 9: Displaying records 1 - 10

PropertyAddress
5900 CLOVERLAND DR, BRENTWOOD
CLOVERLAND DR, BRENTWOOD
5672 OAKES DR, BRENTWOOD
103 VILLA VIEW CT, BRENTWOOD
105 VILLA VIEW CT, BRENTWOOD
115 VILLA VIEW CT, BRENTWOOD
104 VILLA VIEW CT, BRENTWOOD
104 VILLA VIEW CT, BRENTWOOD
110 VILLA VIEW CT, BRENTWOOD
118 VILLA VIEW CT, BRENTWOOD

I will seperate the address into seperate columns using the comma seperator in the `CHARINDEX` function

```
Select
SUBSTRING (PropertyAddress, 1, CHARINDEX(',', PropertyAddress)) as Address
From NashvilleHousing2
```

Table 10: Displaying records 1 - 10

Address
5900 CLOVERLAND DR,
CLOVERLAND DR,
5672 OAKES DR,
103 VILLA VIEW CT,
105 VILLA VIEW CT,
115 VILLA VIEW CT,
104 VILLA VIEW CT,
104 VILLA VIEW CT,
110 VILLA VIEW CT,
118 VILLA VIEW CT,

the above chunk splits just the first part of the address line

the next code chunk will split the address line by two places

```
Select
SUBSTRING (PropertyAddress, 1, CHARINDEX(',', PropertyAddress)-1) as Address,
Substring (PropertyAddress, CharIndex(',', PropertyAddress) + 1, Len(PropertyAddress)) as Address
From NashvilleHousing2
```

Table 11: Displaying records 1 - 10

Address	Address
5900 CLOVERLAND DR	BRENTWOOD
CLOVERLAND DR	BRENTWOOD
5672 OAKES DR	BRENTWOOD
103 VILLA VIEW CT	BRENTWOOD
105 VILLA VIEW CT	BRENTWOOD
115 VILLA VIEW CT	BRENTWOOD
104 VILLA VIEW CT	BRENTWOOD
104 VILLA VIEW CT	BRENTWOOD
110 VILLA VIEW CT	BRENTWOOD
118 VILLA VIEW CT	BRENTWOOD

I will then update the table with the next code chunks `nvarchar` specifies the formatting of the data in the column that is being created.

```
Alter Table NashvilleHousing2
Add PropertySplitAddress nvarchar(225);
```

```
Update NashvilleHousing2
Set PropertySplitAddress = SUBSTRING (PropertyAddress, 1, CHARINDEX(',', PropertyAddress)-1)
```

```
Alter Table NashvilleHousing2
Add PropertyCity nvarchar(225);
```

```sql
Update NashvilleHousing2
Set PropertyCity = Substring (PropertyAddress, CharIndex(',', PropertyAddress) + 1, Len(PropertyAddress)
```

```sql
Select *
From NashvilleHousing
```

Table 12: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	SalePrice	LegalReference	SoldAsVacant	OwnerName	Acreage	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted	PropertySplitAddress	PropertySplitCity	OwnerSplitAddress	OwnerSplitCity	OwnerSplitState
2045	007 00 0 125.00	SINGLE FAMILY	240000	20130412-0036474	No	FRAZIER, CYRENTHA LYNETTE	2.30	50000	168200	235700	1986	3	3	0	2013-04-09	1808 FOX CHASE DR	GOODLETTSVILLE	1808 FOX CHASE DR	GOODLETTSVILLE	
16918	007 00 0 130.00	SINGLE FAMILY	366000	20140619-0053768	No	BONER, CHARLES & LESLIE	3.50	50000	264100	319000	1998	3	3	2	2014-06-10	1832 FOX CHASE DR	GOODLETTSVILLE	1832 FOX CHASE DR	GOODLETTSVILLE	
54582	007 00 0 138.00	SINGLE FAMILY	435000	20160927-0101718	No	WILSON, JAMES E. & JOANNE	2.90	50000	216200	298000	1987	4	3	0	2016-09-26	1864 FOX CHASE DR	GOODLETTSVILLE	1864 FOX CHASE DR	GOODLETTSVILLE	
43070	007 00 0 143.00	SINGLE FAMILY	255000	20160129-0008913	No	BAKER, JAY K. & SUSAN E.	2.60	50000	147300	197300	1985	3	3	0	2016-01-29	1853 FOX CHASE DR	GOODLETTSVILLE	1853 FOX CHASE DR	GOODLETTSVILLE	
22714	007 00 0 149.00	SINGLE FAMILY	278000	20141015-0095255	No	POST, CHRISTOPHER M. & SAMANTHA C.	2.00	50000	152300	202300	1984	4	3	0	2014-10-10	1829 FOX CHASE DR	GOODLETTSVILLE	1829 FOX CHASE DR	GOODLETTSVILLE	
18367	007 00 0 151.00	SINGLE FAMILY	267000	20140718-0063802	No	FIELDS, KAREN L. & BRENT A.	2.00	50000	190400	259800	1980	3	3	0	2014-07-16	1821 FOX CHASE DR	GOODLETTSVILLE	1821 FOX CHASE DR	GOODLETTSVILLE	
19804	007 14 0 002.00	SINGLE FAMILY	171000	20140903-0080214	No	HINTON, MICHAEL R. & CYNTHIA M. MOORE	1.03	40000	137900	177900	1976	3	2	0	2014-08-28	2005 SADIE LN	GOODLETTSVILLE	2005 SADIE LN	GOODLETTSVILLE	
54583	007 14 0 024.00	SINGLE FAMILY	262000	20161005-0105441	No	BAILOR, DARRELL & TAMMY	1.03	40000	157900	197900	1978	3	2	0	2016-09-27	1917 GRACELAND DR	GOODLETTSVILLE	1917 GRACELAND DR	GOODLETTSVILLE	

36500	007 14 0 026.00	SINGLE FAMILY	285000	20150819-0083440	No	ROBERTS, MISTY L. & ROBERT M.	1.67 45400 76900 223200 00	3	2	1	2015-08-14	1428 SPRINGFIELD HWY	GOODLETTSVILLE	1428 SPRINGFIELD HWY	GOODLETTSVILLE
19805	007 14 0 034.00	SINGLE FAMILY	340000	20140909-0082348	No	LEE, JEFFREY & NANCY	1.30 40000 179600 219600 1995	5	3	0	2014-08-29	1420 SPRINGFIELD HWY	GOODLETTSVILLE	1420 SPRINGFIELD HWY	GOODLETTSVILLE

The same operation that was performed with property address above will also be performed on the owner address, but with the `PARSENAME` function.

```
Select OwnerAddress
From NashvilleHousing2
```

Table 13: Displaying records 1 - 10

OwnerAddress
5900 CLOVERLAND DR, BRENTWOOD, TN
0 CLOVERLAND DR, BRENTWOOD, TN
5672 OAKES DR, BRENTWOOD, TN
NA
NA
NA
NA
NA
NA
NA

```
Select
PARSENAME(Replace(OwnerAddress, ',', '.'), 3),
PARSENAME(Replace(OwnerAddress, ',', '.'), 2) ,
PARSENAME(Replace(OwnerAddress, ',', '.'), 1)
From NashvilleHousing2
```

Table 14: Displaying records 1 - 10

5900 CLOVERLAND DR	BRENTWOOD	TN
0 CLOVERLAND DR	BRENTWOOD	TN
5672 OAKES DR	BRENTWOOD	TN
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA
NA	NA	NA

NA	NA	NA

Now that the effect of the above functions is known, the table will then be updated

```sql
Alter Table NashvilleHousing2
Add OwnerAddressSplit nvarchar(225);
```

```sql
Update NashvilleHousing2
Set OwnerAddressSplit = PARSENAME(Replace(OwnerAddress, ',', '.'), 3)
```

```sql
Alter Table NashvilleHousing2
Add OwnerAddressCity nvarchar(225);
```

```sql
Update NashvilleHousing2
Set OwnerAddressCity = PARSENAME(Replace(OwnerAddress, ',', '.'), 2)
```

```sql
Alter Table NashvilleHousing2
Add OwnerAddressState nvarchar(225);
```

```sql
Update NashvilleHousing2
Set OwnerAddressState= PARSENAME(Replace(OwnerAddress, ',', '.'), 1)
```

```sql
Select *
From NashvilleHousing
```

Table 15: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	SalePrice	LegalReference	SoldAsVacant	OwnerName	Acreage	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted	PropertySplitAddress	PropertySplitCity	OwnerAddressSplit	OwnerAddressCity	OwnerAddressState
2045	007 00 0 125.00	SINGLE FAMILY	240000	20130412-0036474	No	FRAZIER, CYRENTHA LYNETTE	2.30	50000	168200	235700	1986	3	3	0	2013-04-09	1808 FOX CHASE DR	GOODLETTSVILLE	1808 FOX CHASE DR	GOODLETTSVILLE	
16918	007 00 0 130.00	SINGLE FAMILY	366000	20140619-0053768	No	BONER, CHARLES & LESLIE	3.50	50000	264100	319000	1998	3	3	2	2014-06-10	1832 FOX CHASE DR	GOODLETTSVILLE	1832 FOX CHASE DR	GOODLETTSVILLE	
54582	007 00 0 138.00	SINGLE FAMILY	435000	20160927-0101718	No	WILSON, JAMES E. & JOANNE	2.90	50000	216200	298000	1987	4	3	0	2016-09-26	1864 FOX CHASE DR	GOODLETTSVILLE	1864 FOX CHASE DR	GOODLETTSVILLE	
43070	007 00 0 143.00	SINGLE FAMILY	255000	20160129-0008913	No	BAKER, JAY K. & SUSAN E.	2.60	50000	147300	197300	1985	3	3	0	2016-01-29	1853 FOX CHASE DR	GOODLETTSVILLE	1853 FOX CHASE DR	GOODLETTSVILLE	

UniqueID	ParcelID	LandUse	SalePrice	LegalReference	SoldAsVacant	OwnerName	Acreage	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted	PropertySplitAddress	PropertySplitCity	OwnerSplitAddress	OwnerSplitCity	OwnerSplitState
22710	407 00 0 149.00	SINGLE FAMILY	278000	20141015-0095255	No	POST, CHRISTOPHER M. & SAMANTHA C.	2.00	50000	152300	202300	1984	4	3	0	2014-10-10	1829 FOX CHASE DR	GOODLETTSVILLE	1829 FOX CHASE DR	GOODLETTSVILLE	
18367	707 00 0 151.00	SINGLE FAMILY	267000	20140718-0063802	No	FIELDS, KAREN L. & BRENT A.	2.00	50000	209400	259800	1980	3	3	0	2014-07-16	1821 FOX CHASE DR	GOODLETTSVILLE	1821 FOX CHASE DR	GOODLETTSVILLE	
19804	407 14 0 002.00	SINGLE FAMILY	171000	20140903-0080214	No	HINTON, MICHAEL R. & CYNTHIA M. MOORE	1.03	40000	137900	177900	1976	3	2	0	2014-08-28	2005 SADIE LN	GOODLETTSVILLE	2005 SADIE LN	GOODLETTSVILLE	
54583	307 14 0 024.00	SINGLE FAMILY	262000	20161005-0105441	No	BAILOR, DARRELL & TAMMY	1.03	40000	157900	197900	1978	3	2	0	2016-09-27	1917 GRACELAND DR	GOODLETTSVILLE	1917 GRACELAND DR	GOODLETTSVILLE	
36500	007 14 0 026.00	SINGLE FAMILY	285000	20150819-0083440	No	ROBERTS, MISTY L. & ROBERT M.	1.67	45400	176900	222300	2000	3	2	1	2015-08-14	1428 SPRINGFIELD HWY	GOODLETTSVILLE	1428 SPRINGFIELD HWY	GOODLETTSVILLE	
19805	507 14 0 034.00	SINGLE FAMILY	340000	20140909-0082348	No	LEE, JEFFREY & NANCY	1.30	40000	179600	219600	1995	5	3	0	2014-08-29	1420 SPRINGFIELD HWY	GOODLETTSVILLE	1420 SPRINGFIELD HWY	GOODLETTSVILLE	

Investigating the Data further, I found in the SoldAsVacant column some entries are in the forms yes, no, Y and N, to not skew the data, or have errors, I changed them to a consistent form Yes and No

```
Select Distinct (SoldAsVacant), Count(SoldAsVacant)
From NashvilleHousing2
Group by SoldAsVacant
Order by 2
```

Table 16: 4 records

SoldAsVacant	
Y	52
N	399
Yes	4623
No	51403

```
Select
SoldAsVacant
, Case WHEN SoldAsVacant = 'Y' Then 'Yes'
        when SoldAsVacant = 'N' then 'No'
        Else SoldAsVacant
        END
from NashvilleHousing2
```

Table 17: Displaying records 1 - 10

SoldAsVacant	
No	No
Yes	Yes
No	No
No	No
No	No
No	No
No	No
No	No
No	No
No	No

```
Update
NashvilleHousing2
Set SoldAsVacant = Case WHEN SoldAsVacant = 'Y' Then 'Yes'
        when SoldAsVacant = 'N' then 'No'
        Else SoldAsVacant
        END
```

The table has been updated with the corrections that were needed.

Next up I will be removing duplicates within the dataset and creating a Common Table Expression `CTE`

```
With RowNumCTE As(
Select *,
    ROW_NUMBER () Over (
    Partition By ParcelID,
                 PropertyAddress,
                 SalePrice,
                 SaleDate,
                 LegalReference
                 Order by
                     UniqueID) row_num
From
NashvilleHousing2
--Order by ParcelID
)
--
Select *
from RowNumCTE
Where row_num > 1
Order by PropertyAddress
```

Table 18: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDate	PropertySplitAddress	PropertySplitCity	OwnerSplitAddress	OwnerSplitCity	State
[illegible]	[illegible] 14 0 157.00	SINGLE FAMILY	1003 BRILEY PKWY, NASHVILLE	2015-02-12	[illegible]	20150219-0014347	No	GREEN, KASSANDRA	1003 BRILEY PKWY, NASHVILLE, TN	0.22	URBAN SERVICES DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2	0	2015-02-12	1003 BRILEY PKWY	NASHVILLE	1003 BRILEY PKWY	NASHVILLE	2
[illegible]	[illegible] 04 0 144.00	SINGLE FAMILY	1005 ESTURBRIDGE CT, ANTIOCH	2015-02-13	[illegible]	20150213-0013547	No	FINNEY, STUE	1005 ESTURBRIDGE CT, ANTIOCH, TN	0.31	URBAN SERVICES DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3	0	2015-02-13	1005 ESTURBRIDGE CT	ANTIOCH	1005 ESTURBRIDGE CT	ANTIOCH	2
[illegible]	[illegible] 16 0 084.00	DUPLEX	1006 DRUMMOND DR, NASHVILLE	2015-02-17	[illegible]	20150218-0014086	No	POST, KEVIN	1006 DRUMMOND DR, NASHVILLE, TN	0.99	URBAN SERVICES DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3	0	2015-02-17	1006 DRUMMOND DR	NASHVILLE	1006 DRUMMOND DR	NASHVILLE	2
[illegible]	[illegible] 08 0 056.00	SINGLE FAMILY	1011 43RD AVE N, NASHVILLE	2015-02-23	[illegible]	20150227-0017102	No	MENDING HEARTS, INC.	1011 43RD AVE N, NASHVILLE, TN	0.17	URBAN SERVICES DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2	0	2015-02-23	1011 43RD AVE N	NASHVILLE	1011 43RD AVE N	NASHVILLE	2
[illegible]	[illegible] 10 0E 020.00	RESIDENTIAL CONDO	1023 CAPITAL FUNDS CT, NASHVILLE	2015-02-06	[illegible]	20150210-0012380	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2015-02-06	1023 CAPITAL FUNDS CT	NASHVILLE	NA	NA	2
[illegible]	[illegible] 10 0E 021.00	RESIDENTIAL CONDO	1025 CAPITAL FUNDS CT, NASHVILLE	2015-02-06	[illegible]	20150210-0012389	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2015-02-06	1025 CAPITAL FUNDS CT	NASHVILLE	NA	NA	2
[illegible]	[illegible] 04 0 046.00	SINGLE FAMILY	1038 40TH AVE N, NASHVILLE	2015-02-23	[illegible]	20150227-0016978	No	DAVIS, CRYSTAL ANN	1038 40TH AVE N, NASHVILLE, TN	0.14	URBAN SERVICES DISTRICT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	0	2015-02-23	1038 40TH AVE N	NASHVILLE	1038 40TH AVE N	NASHVILLE	2

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	PropertyAddress	PropertySplitCity	OwnerAddress	OwnerSplitCity	OwnerSplitState
27350	098 09 0B 009.00	SINGLE FAMILY	108 WINDCHASE RUN, HERMITAGE	2015-02-18	210000	20150225 0016199	NA	NA	NA	NA	NA	NA	NA	NA	2015	3	2	1	108 WINDCHASE RUN	HERMITAGE	NA	NA	2
27361	135 10 0E 014.00	RESIDENTIAL CONDO	1129 RANSOM WAY, NASHVILLE	2015-02-13	182000	20150224 0015807	NA	NA	NA	NA	NA	NA	NA	NA	2015	3	2	1	1129 RANSOM WAY	NASHVILLE	NA	NA	2
27350	098 06 0B 137.00	RESIDENTIAL CONDO	1207 CHICKADEE CIR, HERMITAGE	2015-02-26	197000	20150227 0017053	NA	NA	NA	NA	NA	NA	NA	NA	2015	3	2	1	1207 CHICKADEE CIR	HERMITAGE	NA	NA	2

```
With RowNumCTE As(
Select *,
    ROW_NUMBER () Over (
    Partition By ParcelID,
                 PropertyAddress,
                 SalePrice,
                 SaleDate,
                 LegalReference
                 Order by
                     UniqueID) row_num
From
NashvilleHousing2
--Order by ParcelID
)


DELETE
from RowNumCTE
Where row_num > 1
```

Finally as part of the data cleaning, unwanted columns will be removed from the table such as `OwnerName` to anonymize the data and protect privacy of owners, and the OwnerAddress and OwnerAddressCity

```
Select *
From NashvilleHousing2
```

Table 19: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted	PropertySplitAddress	PropertySplitCity	OwnerSplitAddress	OwnerSplitCity	OwnerSplitState
53922	171 00 0 152.00	SINGLE FAMILY	5900 CLOVERLAND DR, BRENTWOOD	2016-09-20	300000	20160920-0106043	No	CHANEY, MATTHEW RAY & LEANNE KAY & ET AL	5900 CLOVERLAND DR, BRENTWOOD, TN	1.10	URBAN SERVICES DISTRICT	82900	95400	178300	1993	3	1	0	2016-09-20	5900 CLOVERLAND DR	BRENTWOOD	5900 CLOVERLAND DR	BRENTWOOD	
25778	171 00 0 202.00	VACANT RESIDENTIAL LAND	CLOVERLAND DR, BRENTWOOD	2015-01-16	49000	20150120-0005484	Yes	NA	0 CLOVERLAND DR, BRENTWOOD, TN	0.93	URBAN SERVICES DISTRICT	42900	0	42900	NA	NA	0	0	2015-01-16	CLOVERLAND DR	BRENTWOOD	0 CLOVERLAND DR	BRENTWOOD	
23390	171 02 0 013.00	SINGLE FAMILY	5672 OAKES DR, BRENTWOOD	2014-11-01	250000	20141110-0103531	No	CARINI, KEVIN F.	5672 OAKES DR, BRENTWOOD, TN	1.36	URBAN SERVICES DISTRICT	46300	180700	227000	1984	3	2	0	2014-11-01	5672 OAKES DR	BRENTWOOD	5672 OAKES DR	BRENTWOOD	
7586	171 02 0A 002.00	RESIDENTIAL CONDO	103 VILLA VIEW CT, BRENTWOOD	2013-09-12	169000	20130916-0097186	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2013-09-12	103 VILLA VIEW CT	BRENTWOOD	NA	NA	
9419	171 02 0A 003.00	CONDO	105 VILLA VIEW CT, BRENTWOOD	2013-11-22	195000	20131126-0126781	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2013-11-22	105 VILLA VIEW CT	BRENTWOOD	NA	NA	
11405	171 02 0A 008.00	CONDO	115 VILLA VIEW CT, BRENTWOOD	2014-01-22	165000	20140127-0007078	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2014-01-22	115 VILLA VIEW CT	BRENTWOOD	NA	NA	
19129	171 02 0A 011.00	RESIDENTIAL CONDO	104 VILLA VIEW CT, BRENTWOOD	2014-08-28	190000	20140904-0080767	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2014-08-28	104 VILLA VIEW CT	BRENTWOOD	NA	NA	

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDate	PropertyCity	PropertySplitAddress	PropertySplitCity	OwnerAddressSplit	OwnerAddressCity	OwnerAddressState
53921	071 02 0A 011.00	RESIDENTIAL CONDO	1045 VILLA VIEW CT, BRENTWOOD	2016-09-09	255000	20160915-0096930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-09-09	BRENTWOOD	1045 VILLA VIEW CT	BRENTWOOD	NA	NA	NA
38947	071 02 0A 014.00	RESIDENTIAL CONDO	1026 VILLA VIEW CT, BRENTWOOD	2015-10-26	200000	20151029-0110208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2015-10-26	BRENTWOOD	1026 VILLA VIEW CT	BRENTWOOD	NA	NA	NA
46197	071 02 0A 018.00	RESIDENTIAL CONDO	1044 VILLA VIEW CT, BRENTWOOD	2016-04-27	232500	20160506-0045160	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-04-27	BRENTWOOD	1044 VILLA VIEW CT	BRENTWOOD	NA	NA	NA

```
ALTER TABle
NashvilleHousing2
drop column OwnerAddress, OwnerName, OwnerAddressCity, OwnerAddressSplit
```

I have now come to the end of the operation, and the cleaned data can then be viewed with the code chunk below

```
Select *
From NashvilleHousing2
```

Table 20: Displaying records 1 - 10

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	OwnerName	OwnerAddress	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDate	PropertyCity	PropertySplitAddress	PropertySplitCity	OwnerAddressSplit	OwnerAddressCity	OwnerAddressState
53921	071 00 0 152.00	SINGLE FAMILY	5900 CLOVERLAND DR, BRENTWOOD	2016-09-20	300000	20161006-0106043	No	1.10	URBAN SERVICES DISTRICT	22000	54000	177800	10313	1	0	2016-09-20	5900 CLOVERLAND DR	BRENTWOOD							
25778	071 00 0 202.00	VACANT RESIDENTIAL LAND	CLOVERLAND DR, BRENTWOOD	2015-01-16	190000	20150120-0005484	Yes	0.93	URBAN SERVICES DISTRICT	29000	42900	NA	NA	0	0	2015-01-16	CLOVERLAND DR	BRENTWOOD							
23390	071 02 0 013.00	SINGLE FAMILY	5672 OAKES DR, BRENTWOOD	2014-11-01	250000	20141106-0103531	No	1.36	URBAN SERVICES DISTRICT	36300	80700	227000	19843	2	0	2014-11-01	5672 OAKES DR	BRENTWOOD							

UniqueID	ParcelID	LandUse	PropertyAddress	SaleDate	SalePrice	LegalReference	SoldAsVacant	Acreage	TaxDistrict	LandValue	BuildingValue	TotalValue	YearBuilt	Bedrooms	FullBath	HalfBath	SaleDateConverted	PropertySplitAddress	PropertySplitCity	OwnerSplitAddressState
7586	171 02 0A 002.00	RESIDENTIAL CONDO	103 VILLA VIEW CT, BRENTWOOD	2013-09-12	169000	20130916-0097186	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	2013-09-12	103 VILLA VIEW CT	BRENTWOOD	NA
9419	171 02 0A 003.00	CONDO	105 VILLA VIEW CT, BRENTWOOD	2013-11-22	195000	20131126-0126781	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	2013-11-22	105 VILLA VIEW CT	BRENTWOOD	NA
11405	171 02 0A 008.00	CONDO	115 VILLA VIEW CT, BRENTWOOD	2014-01-22	165000	20140127-0007078	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	2014-01-22	115 VILLA VIEW CT	BRENTWOOD	NA
19129	171 02 0A 011.00	RESIDENTIAL CONDO	104 VILLA VIEW CT, BRENTWOOD	2014-08-28	190000	20140904-0080767	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	2014-08-28	104 VILLA VIEW CT	BRENTWOOD	NA
53923	171 02 0A 011.00	RESIDENTIAL CONDO	104 VILLA VIEW CT, BRENTWOOD	2016-09-09	255000	20160915-0096930	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-09-09	104 VILLA VIEW CT	BRENTWOOD	NA
38945	171 02 0A 014.00	RESIDENTIAL CONDO	110 VILLA VIEW CT, BRENTWOOD	2015-10-26	220000	20151029-0110208	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	2015-10-26	110 VILLA VIEW CT	BRENTWOOD	NA
46197	171 02 0A 018.00	RESIDENTIAL CONDO	118 VILLA VIEW CT, BRENTWOOD	2016-04-27	232500	20160506-0045160	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	2016-04-27	118 VILLA VIEW CT	BRENTWOOD	NA