DC Properties

Catalin Banu

January 2010

Abstract

The residential property descriptions and address point information is current as of July 2018 and is provided by D.C. Geographic Information System

Eda

At first look:

- there are some columns that can't be used directly : FULLADRESS, CENSUS_BLOCK, SQUARE, X, Y (the last two are the same with latitude and longitude)
- Some fields need processing. Like sell date into year and zipcode into categorical
- few columnns have NA VALUEs

Types of data

```
table(sapply(df, class))
```

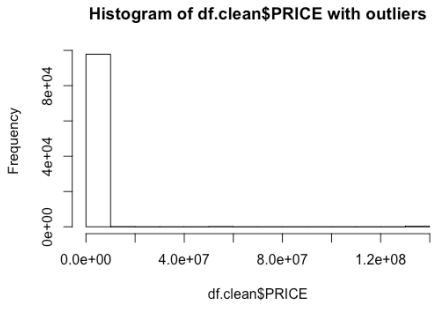
factor	integer	numeric
23	11	15

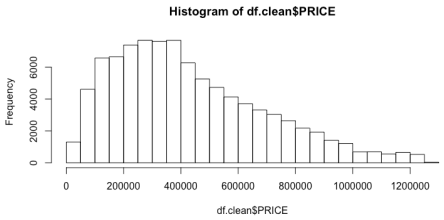
Looking at the target feature

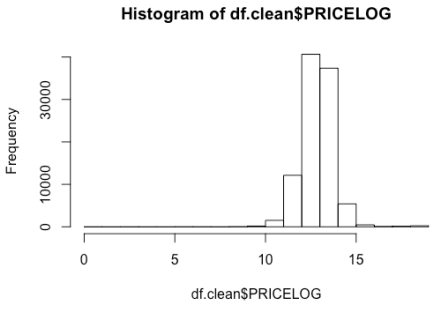
There are 4655 outlier values. (what should with do with them?). First I removed it

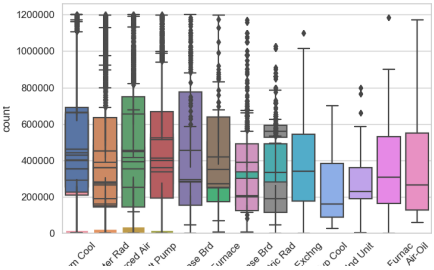
What type of variation occurs within my variables?

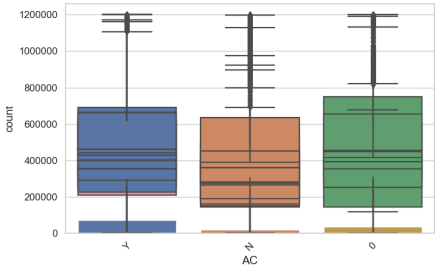
First we look at the price column, the value that I try to predict

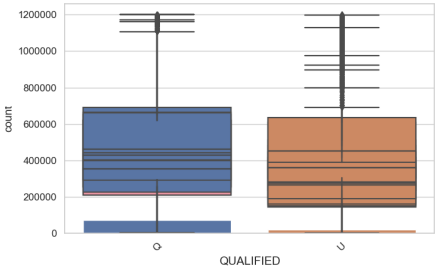












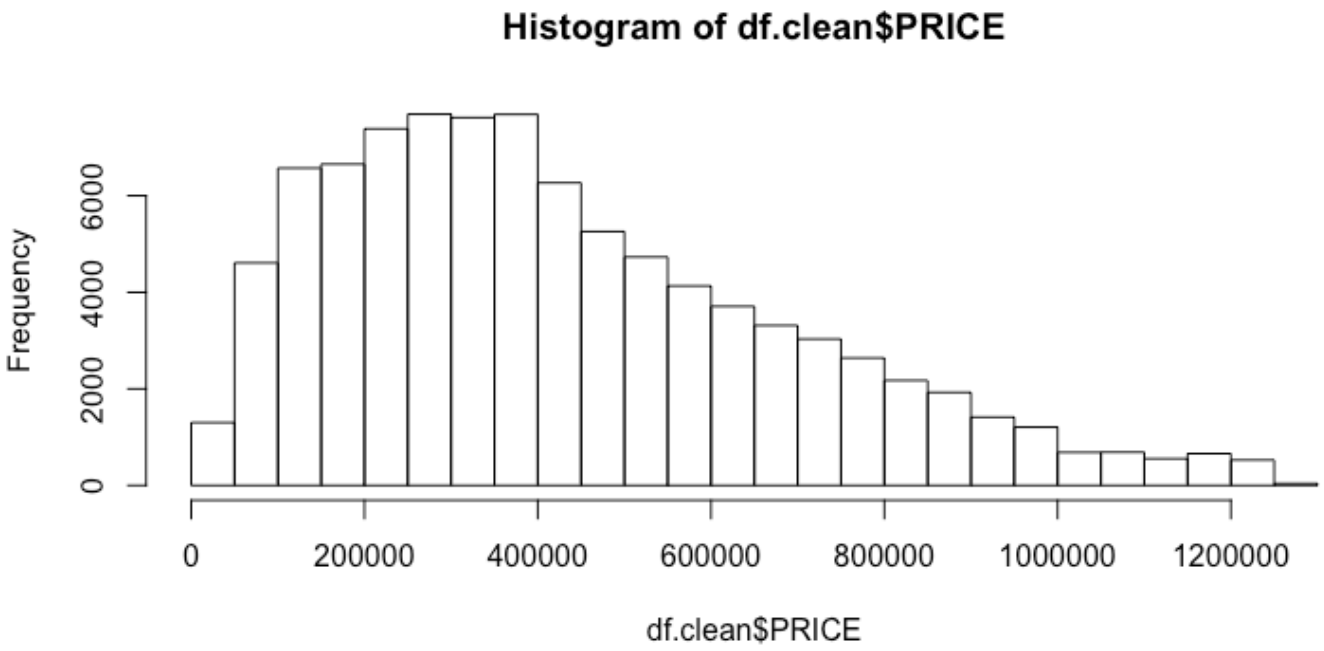
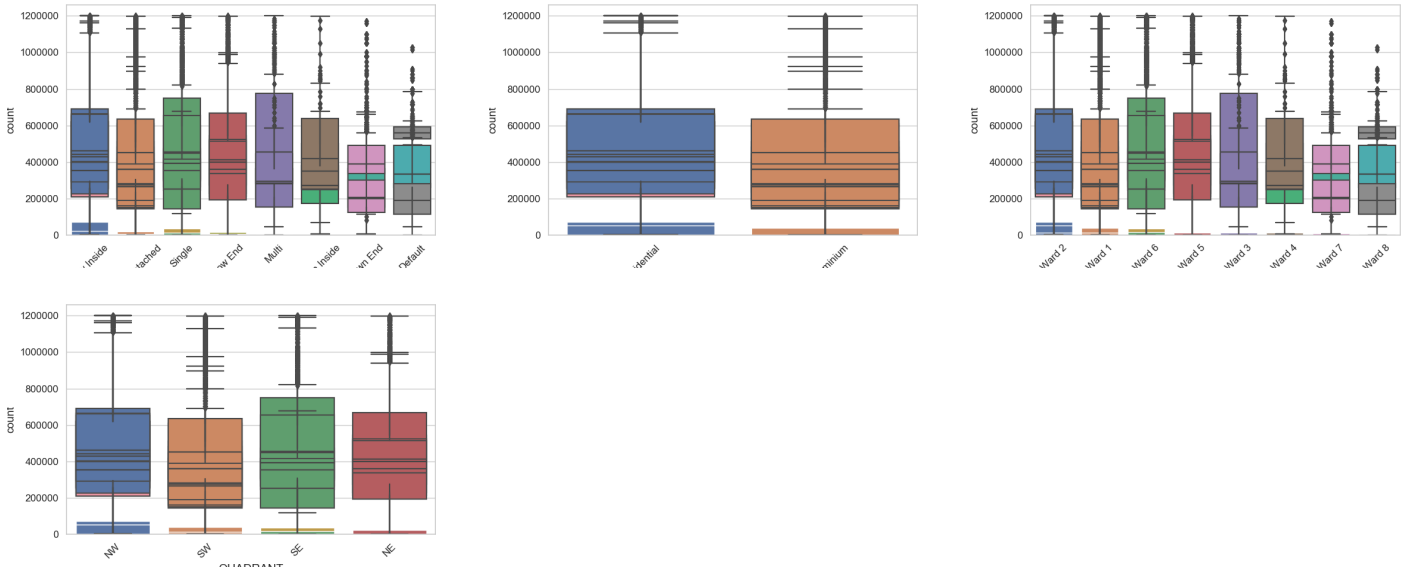


Figure 1: price hist



What type of covariation occurs between my variables?

Missing Values

We are looking to the columns that are missing most of the values

Column	Percentage
NUM_UNITS	**41.048**
AYB	**0.114**
YR_RMDL	**41.278**
STORIES	41.082
SALEDATE	**0.001**
GBA	41.048
STYLE	41.048

Column	Percentage
STRUCT	41.048
GRADE	41.048
CNDTN	41.048
EXTWALL	41.048
ROOF	41.048
INTWALL	41.048
KITCHENS	**41.049**
CMPLX_NUM	58.952
LIVING_GBA	58.952
CITY	41.385
STATE	41.385
NATIONALGRID	41.385
ASSESSMENT_SUBNBHD	20.623
QUADRANT	**0.103**

From the columns with missed values I will keep only the following columns:

- AYB, SALEDATE, QUADRANT (they miss only few values and I can drop the rows)
- KITCHEN,NUM_UNITS - can be imputed
- YR_RMDL - can be calculated from AYB
- LIVING_GBA - can be imputed from GBA
- GBA - can be imputed from LIVING_GBA

Covariation

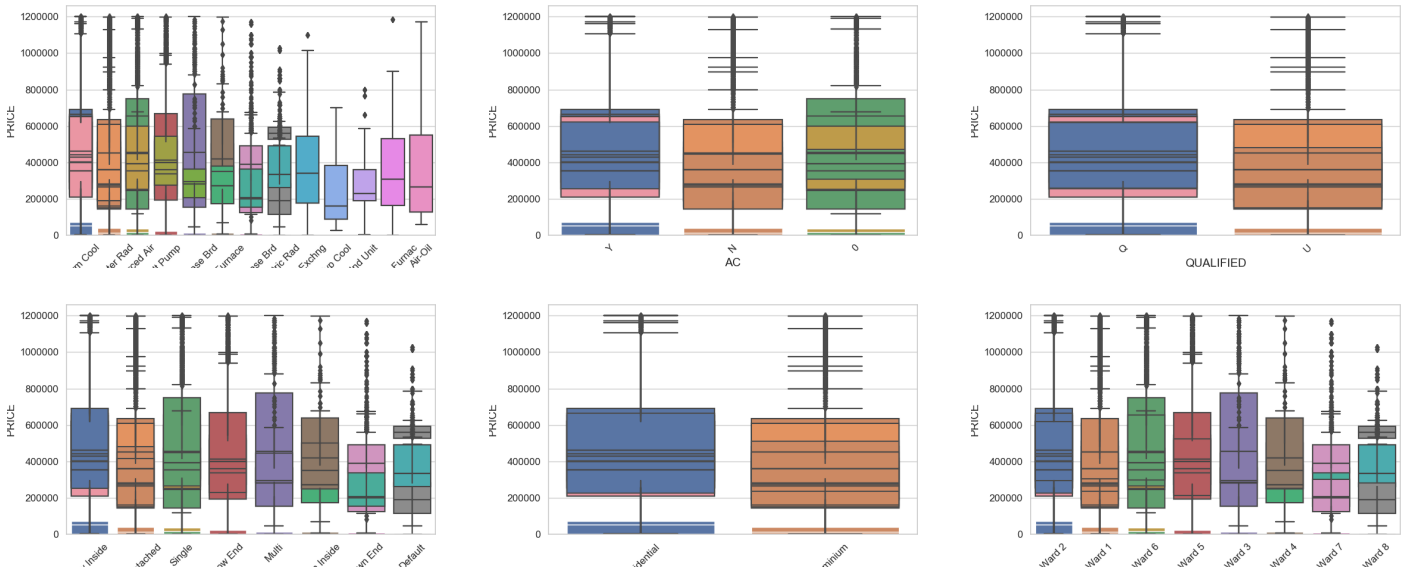
Varianta between columns can be seen in the figure below

** With target predictor: PRICE **

** Continouse

** Categorical **

Let's see how categorical columns coralate with PRICE column



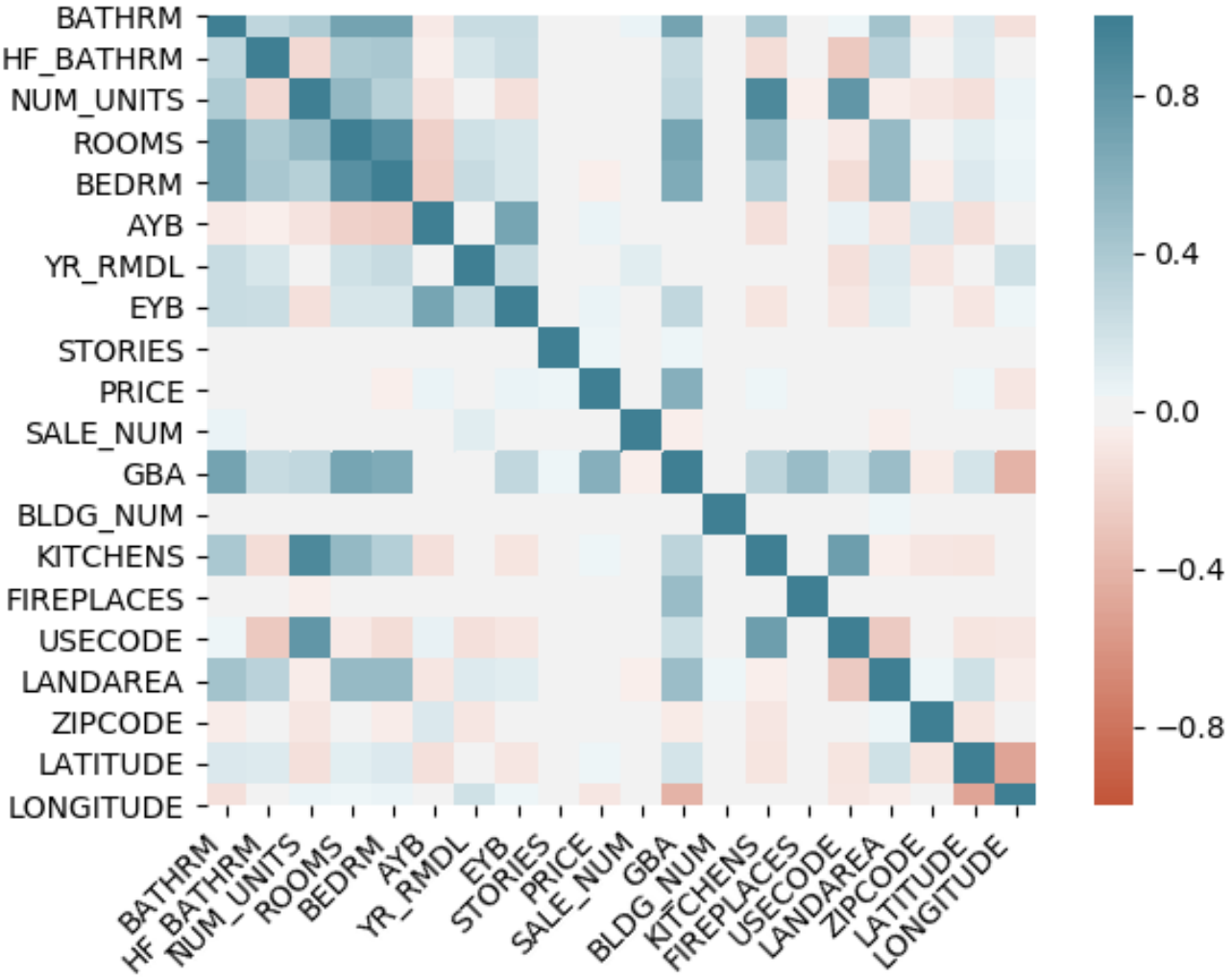
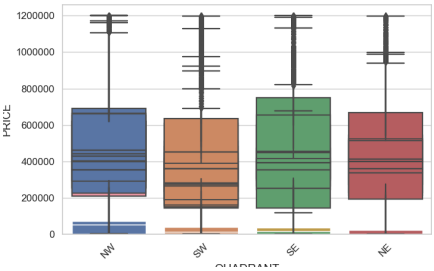


Figure 2: corr



Data processing

From 158957 properties, only 98216 had price so all the analysis was made starting with this subset of data