

1. Data Loading

```
In [2]: import pandas as pd
```

```
In [3]: df=pd.read_csv("data.csv")
```

```
In [4]: df.head(5)
```

```
Out[4]:      date    price  bedrooms  bathrooms  sqft_living  sqft_lot  floors  waterfront  view
0  5/2/2014  313000.0        3       1.50     1340.0    7912.0     1.5       0.0       C
1  5/2/2014  2384000.0       5       2.50     3650.0   9050.0     2.0       0.0       4
2  5/2/2014  342000.0        3       2.00     1930.0   11947.0     1.0       0.0       C
3  5/2/2014  420000.0        3       2.25     2000.0   8030.0     1.0       0.0       C
4  5/2/2014  550000.0        4       NaN      NaN      NaN      NaN      NaN      NaN      C
```



```
In [10]: df.tail()
```

Out[10]:

| | | date | price | bedrooms | bathrooms | sqft_living | sqft_lot | floors | waterfront |
|-------------|--|-------------------|--------------|-----------------|------------------|--------------------|-----------------|---------------|-------------------|
| 4595 | | 7/9/2014 0:00 | 308166.6667 | 3 | 1.75 | 1510.0 | 6360.0 | 1.0 | (|
| 4596 | | 7/9/2014 0:00 | 534333.3333 | 3 | 2.50 | 1460.0 | 7573.0 | 2.0 | (|
| 4597 | | 7/9/2014 0:00 | 416904.1667 | 3 | 2.50 | 3010.0 | 7014.0 | 2.0 | (|
| 4598 | | 7/10/2014 0:00 | 203400.0000 | 4 | 2.00 | 2090.0 | 6630.0 | 1.0 | (|
| 4599 | | 7/10/2014 0:00 | 220600.0000 | 3 | 2.50 | 1490.0 | 8102.0 | 2.0 | (|



1. Data Exploration

In [5]: `df.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 4600 entries, 0 to 4599
Data columns (total 18 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   date             4600 non-null   object 
 1   price            4600 non-null   float64
 2   bedrooms         4600 non-null   int64  
 3   bathrooms        4553 non-null   float64
 4   sqft_living      4553 non-null   float64
 5   sqft_lot          4553 non-null   float64
 6   floors            4553 non-null   float64
 7   waterfront        4553 non-null   float64
 8   view              4552 non-null   float64
 9   condition         4552 non-null   float64
 10  sqft_above        4552 non-null   float64
 11  sqft_basement    4552 non-null   float64
 12  yr_builtin       4552 non-null   float64
 13  yr_renovated     4552 non-null   float64
 14  street            4552 non-null   object 
 15  city              4600 non-null   object 
 16  statezip          4600 non-null   object 
 17  country           4600 non-null   object 
dtypes: float64(12), int64(1), object(5)
memory usage: 647.0+ KB
```

```
In [7]: df.shape
```

```
Out[7]: (4600, 18)
```

```
In [8]: df.describe()
```

| | price | bedrooms | bathrooms | sqft_living | sqft_lot | floors |
|--------------|--------------|-------------|-------------|--------------|--------------|-------------|
| count | 4.600000e+03 | 4600.000000 | 4553.000000 | 4553.000000 | 4.553000e+03 | 4553.000000 |
| mean | 5.519630e+05 | 3.400870 | 2.161871 | 2140.734900 | 1.485242e+04 | 1.513068 |
| std | 5.638347e+05 | 0.908848 | 0.785562 | 965.330337 | 3.602707e+04 | 0.538393 |
| min | 0.000000e+00 | 0.000000 | 0.000000 | 370.000000 | 6.380000e+02 | 1.000000 |
| 25% | 3.228750e+05 | 3.000000 | 1.750000 | 1460.000000 | 5.000000e+03 | 1.000000 |
| 50% | 4.609435e+05 | 3.000000 | 2.250000 | 1980.000000 | 7.680000e+03 | 1.500000 |
| 75% | 6.549625e+05 | 4.000000 | 2.500000 | 2620.000000 | 1.100000e+04 | 2.000000 |
| max | 2.659000e+07 | 9.000000 | 8.000000 | 13540.000000 | 1.074218e+06 | 3.500000 |



```
In [9]: df.isnull().sum()
```

```
Out[9]: date          0
price         0
bedrooms      0
bathrooms     47
sqft_living    47
sqft_lot       47
floors        47
waterfront     47
view           48
condition      48
sqft_above     48
sqft_basement   48
yr_built       48
yr_renovated    48
street          48
city            0
statezip        0
country         0
dtype: int64
```

```
In [11]: df.count()
```

```
Out[11]: date      4600  
          price     4600  
          bedrooms   4600  
          bathrooms  4553  
          sqft_living 4553  
          sqft_lot    4553  
          floors     4553  
          waterfront  4553  
          view       4552  
          condition   4552  
          sqft_above   4552  
          sqft_basement 4552  
          yr_built    4552  
          yr_renovated 4552  
          street      4552  
          city        4600  
          statezip    4600  
          country     4600  
          dtype: int64
```