practice

September 5, 2023

[1]:
```
# This Python 3 environment comes with many helpful analytics libraries␣
 ↪installed
# It is defined by the kaggle/python Docker image: https://github.com/kaggle/
 ↪docker-python
# For example, here's several helpful packages to load

import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)

# Input data files are available in the read-only "../input/" directory
# For example, running this (by clicking run or pressing Shift+Enter) will list␣
 ↪all files under the input directory

import os
for dirname, _, filenames in os.walk('/kaggle/input'):
    for filename in filenames:
        print(os.path.join(dirname, filename))

# You can write up to 20GB to the current directory (/kaggle/working/) that␣
 ↪gets preserved as output when you create a version using "Save & Run All"
# You can also write temporary files to /kaggle/temp/, but they won't be saved␣
 ↪outside of the current session
```

```
/kaggle/input/house-price/House Price India.csv
```

[3]:
```
import warnings
warnings.filterwarnings('ignore')

import matplotlib.pyplot as plt
import seaborn as sns
```

[4]:
```
data=pd.read_csv("/kaggle/input/house-price/House Price India.csv")
```

[5]:
```
data.head(5)
```

[5]:

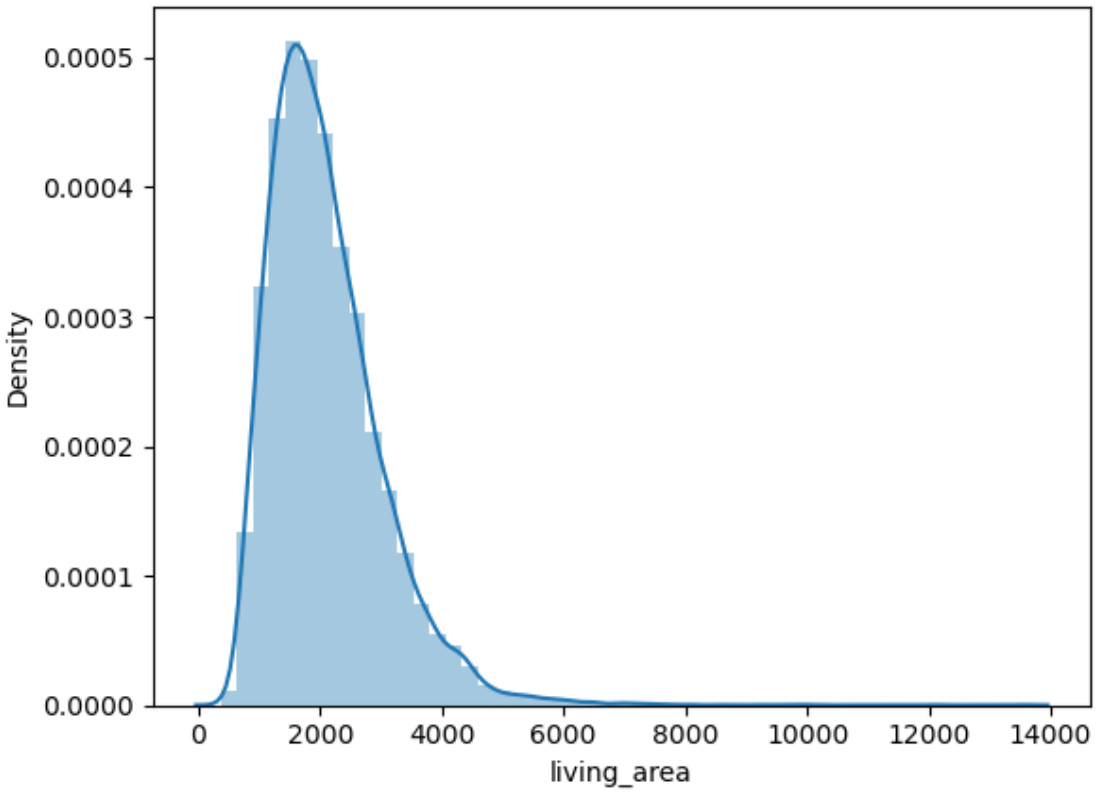
	id	Date	number_of_bedrooms	number_of_bathrooms	living_area	\
0	6762810145	42491	5	2.50	3650	

```
1  6762810635  42491                 4                 2.50         2920
2  6762810998  42491                 5                 2.75         2910
3  6762812605  42491                 4                 2.50         3310
4  6762812919  42491                 3                 2.00         2710

   lot_area  number_of_floors  waterfront_present  number_of_views  \
0      9050               2.0                   0                4
1      4000               1.5                   0                0
2      9480               1.5                   0                0
3     42998               2.0                   0                0
4      4500               1.5                   0                0

   condition_of_the_house  …  Built_Year  Renovation_Year  Postal_Code  \
0                       5  …        1921                0       122003
1                       5  …        1909                0       122004
2                       3  …        1939                0       122004
3                       3  …        2001                0       122005
4                       4  …        1929                0       122006

   Lattitude  Longitude  living_area_renov  lot_area_renov  \
0    52.8645   -114.557               2880            5400
1    52.8878   -114.470               2470            4000
2    52.8852   -114.468               2940            6600
3    52.9532   -114.321               3350           42847
4    52.9047   -114.485               2060            4500

   Number_of_schools_nearby  Distance_from_the_airport    Price
0                         2                         58  2380000
1                         2                         51  1400000
2                         1                         53  1200000
3                         3                         76   838000
4                         1                         51   805000

[5 rows x 23 columns]
```

[6]:
```
#Perform the Below Visualizations.  Univariate Analysis  Bi - Variate Analysis␣
↪ Multivariate
#Analysis
```

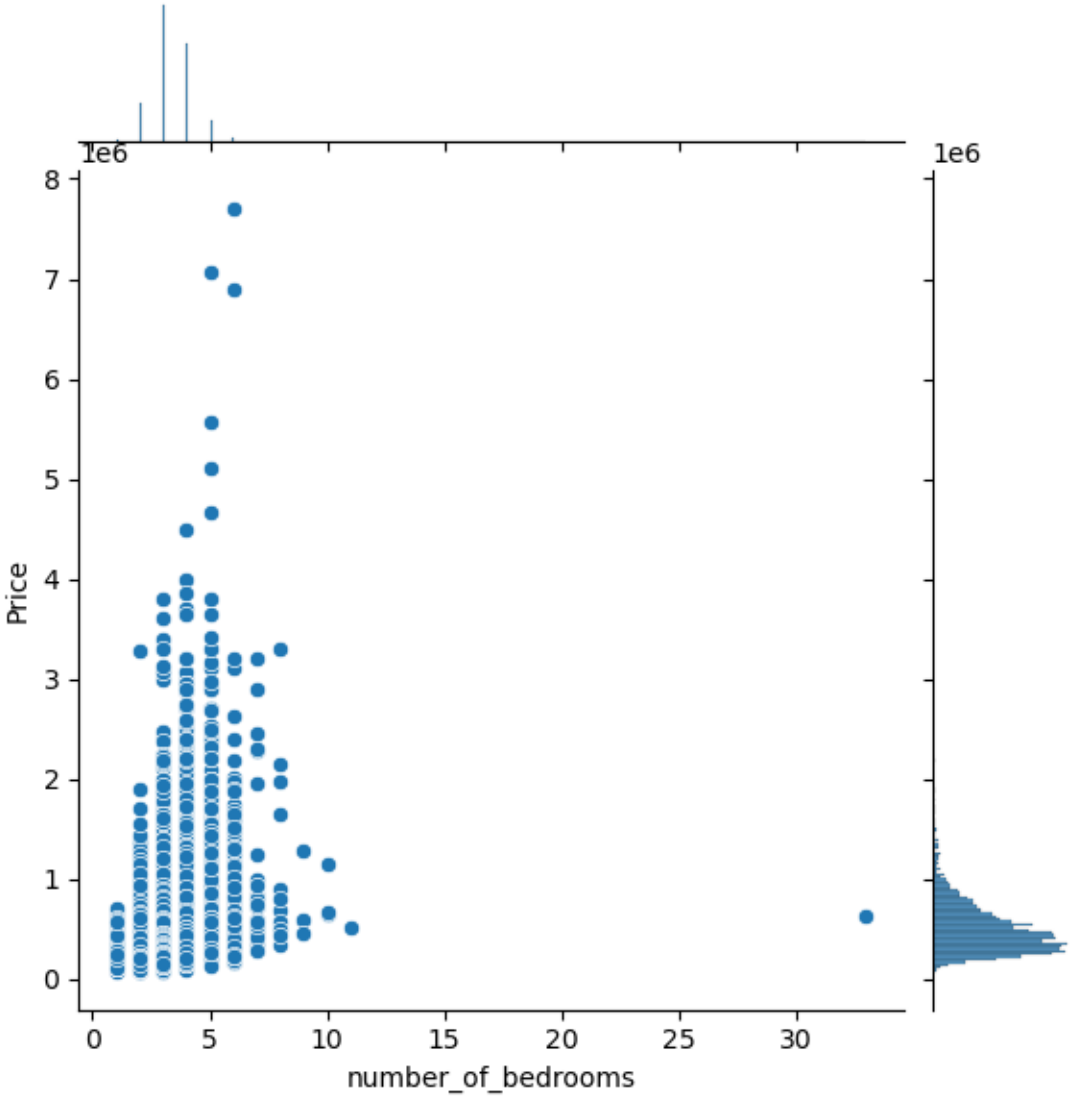
[8]:
```
sns.distplot(data['living_area'])
```

[8]:
```
<Axes: xlabel='living_area', ylabel='Density'>
```



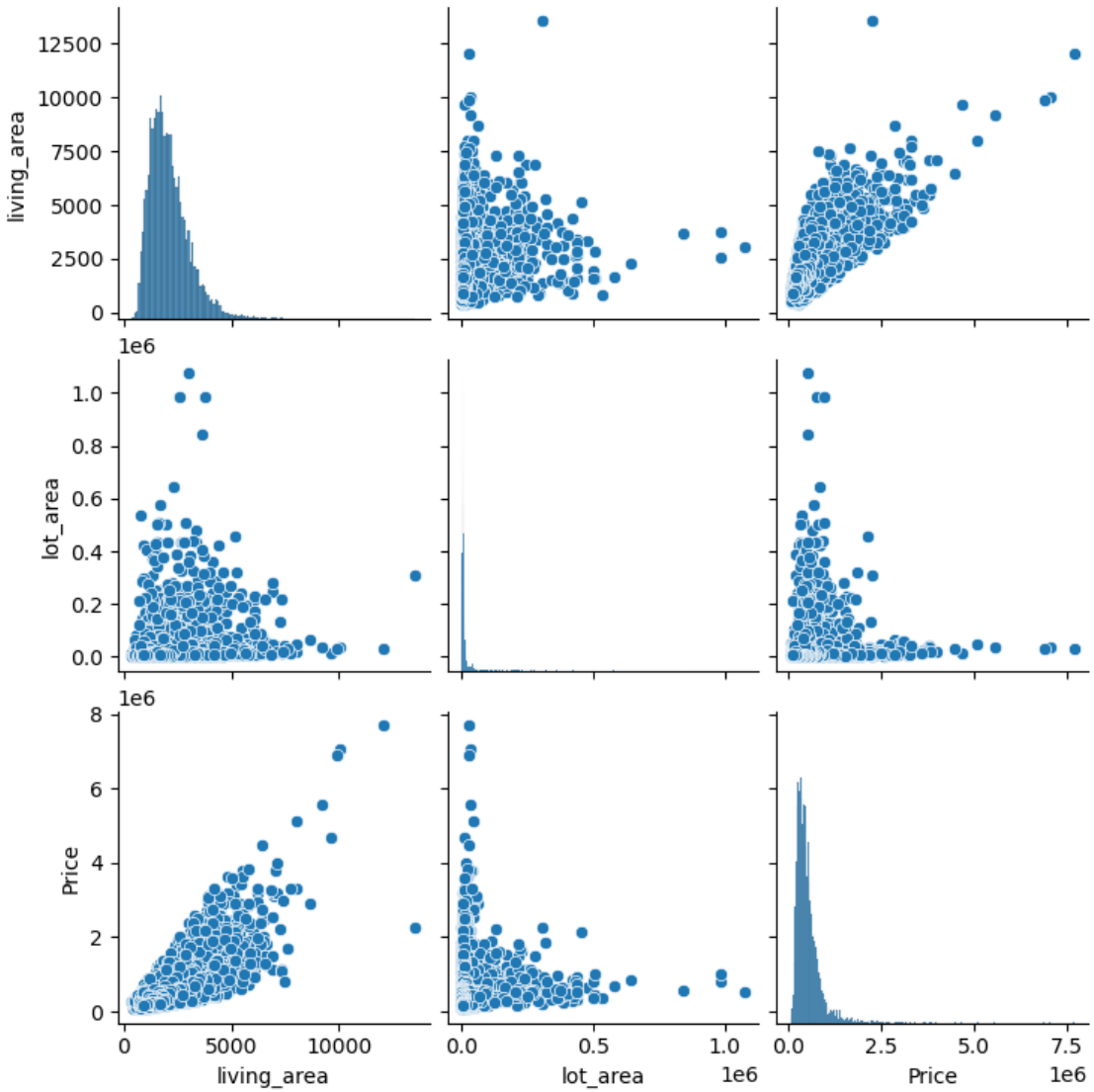
[9]:
```
# Bivariate Analysis (Comparision between 'lot_area' feature and 'Price')
sns.jointplot(x='number_of_bedrooms',y='Price',data=data)
```

[9]: <seaborn.axisgrid.JointGrid at 0x79caddf95690>



[12]:
```
# Multivariate analysis
columns=['living_area','lot_area','Price']
sns.pairplot(data[columns])
```

[12]: <seaborn.axisgrid.PairGrid at 0x79cab58df760>



[13]:
```
#Perform descriptive statistics on the dataset.
```

[14]:
```
data.describe()
```

[14]:

	id	Date	number_of_bedrooms	number_of_bathrooms	\
count	1.462000e+04	14620.000000	14620.000000	14620.000000	
mean	6.762821e+09	42604.538646	3.379343	2.129583	
std	6.237575e+03	67.347991	0.938719	0.769934	
min	6.762810e+09	42491.000000	1.000000	0.500000	
25%	6.762815e+09	42546.000000	3.000000	1.750000	
50%	6.762821e+09	42600.000000	3.000000	2.250000	
75%	6.762826e+09	42662.000000	4.000000	2.500000	
max	6.762832e+09	42734.000000	33.000000	8.000000	

	living_area	lot_area	number_of_floors	waterfront_present	\
count	14620.000000	1.462000e+04	14620.000000	14620.000000	
mean	2098.262996	1.509328e+04	1.502360	0.007661	
std	928.275721	3.791962e+04	0.540239	0.087193	
min	370.000000	5.200000e+02	1.000000	0.000000	
25%	1440.000000	5.010750e+03	1.000000	0.000000	
50%	1930.000000	7.620000e+03	1.500000	0.000000	
75%	2570.000000	1.080000e+04	2.000000	0.000000	
max	13540.000000	1.074218e+06	3.500000	1.000000	

	number_of_views	condition_of_the_house	…	Built_Year	\
count	14620.000000	14620.000000	…	14620.000000	
mean	0.233105	3.430506	…	1970.926402	
std	0.766259	0.664151	…	29.493625	
min	0.000000	1.000000	…	1900.000000	
25%	0.000000	3.000000	…	1951.000000	
50%	0.000000	3.000000	…	1975.000000	
75%	0.000000	4.000000	…	1997.000000	
max	4.000000	5.000000	…	2015.000000	

	Renovation_Year	Postal_Code	Lattitude	Longitude	\
count	14620.000000	14620.000000	14620.000000	14620.000000	
mean	90.924008	122033.062244	52.792848	-114.404007	
std	416.216661	19.082418	0.137522	0.141326	
min	0.000000	122003.000000	52.385900	-114.709000	
25%	0.000000	122017.000000	52.707600	-114.519000	
50%	0.000000	122032.000000	52.806400	-114.421000	
75%	0.000000	122048.000000	52.908900	-114.315000	
max	2015.000000	122072.000000	53.007600	-113.505000	

	living_area_renov	lot_area_renov	Number_of_schools_nearby	\
count	14620.000000	14620.000000	14620.000000	
mean	1996.702257	12753.500068	2.012244	
std	691.093366	26058.414467	0.817284	
min	460.000000	651.000000	1.000000	
25%	1490.000000	5097.750000	1.000000	
50%	1850.000000	7620.000000	2.000000	
75%	2380.000000	10125.000000	3.000000	
max	6110.000000	560617.000000	3.000000	

	Distance_from_the_airport	Price
count	14620.000000	1.462000e+04
mean	64.950958	5.389322e+05
std	8.936008	3.675324e+05
min	50.000000	7.800000e+04
25%	57.000000	3.200000e+05

```
50%                    65.000000  4.500000e+05
75%                    73.000000  6.450000e+05
max                    80.000000  7.700000e+06

[8 rows x 23 columns]
```

[15]:
```
#Checking is there any null values in our dataset
```

[16]:
```
data.isnull().sum()
```

[16]:
```
id                                      0
Date                                    0
number_of_bedrooms                      0
number_of_bathrooms                     0
living_area                             0
lot_area                                0
number_of_floors                        0
waterfront_present                      0
number_of_views                         0
condition_of_the_house                  0
grade_of_the_house                      0
Area_of_the_house(excluding basement)   0
Area_of_the_basement                    0
Built_Year                              0
Renovation_Year                         0
Postal_Code                             0
Lattitude                               0
Longitude                               0
living_area_renov                       0
lot_area_renov                          0
Number_of_schools_nearby                0
Distance_from_the_airport               0
Price                                   0
dtype: int64
```

[17]:
```
#No Null Values
```

[ ]:
```

```