ASSIGNMENT - 1

Data Visualization

Assignment Date	21 April , 2023
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Maximum marks	2 Mark

1. Download the dataset:

https://www.kaggle.com/datasets/mohamedafsal007/house-price-dataset-of-india?resource=download

2. Load the dataset:

```
In [1]: import pandas as pd

In [2]: import matplotlib.pyplot as plt
```

Load the dataset

```
In [3]: #reading the csv data set

In [7]: dataset=pd.read_csv(r"C:\Users\indira\Downloads\archive.zip")

In [9]: dataset
```

Out[9]:

	id	Date	number of bedrooms	number of bathrooms	living area	lot area	number of floors	waterfront present	number of views	condition of the house	...	Built Year	Renovation Year	Postal Code	Lattitude	Longitude	li
0	6762810145	42491	5	2.50	3650	9050	2.0	0	4	5	...	1921	0	122003	52.8645	-114.557	
1	6762810635	42491	4	2.50	2920	4000	1.5	0	0	5	...	1909	0	122004	52.8878	-114.470	
2	6762810998	42491	5	2.75	2910	9480	1.5	0	0	3	...	1939	0	122004	52.8852	-114.468	
3	6762812605	42491	4	2.50	3310	42998	2.0	0	0	3	...	2001	0	122005	52.9532	-114.321	
4	6762812919	42491	3	2.00	2710	4500	1.5	0	0	4	...	1929	0	122006	52.9047	-114.485	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14615	6762830250	42734	2	1.50	1556	20000	1.0	0	0	4	...	1957	0	122066	52.6191	-114.472	
14616	6762830339	42734	3	2.00	1680	7000	1.5	0	0	4	...	1968	0	122072	52.5075	-114.393	
14617	6762830618	42734	2	1.00	1070	6120	1.0	0	0	3	...	1962	0	122056	52.7289	-114.507	
14618	6762830709	42734	4	1.00	1030	6621	1.0	0	0	4	...	1955	0	122042	52.7157	-114.411	
14619	6762831463	42734	3	1.00	900	4770	1.0	0	0	3	...	1969	2009	122018	52.5338	-114.552	

14620 rows × 23 columns

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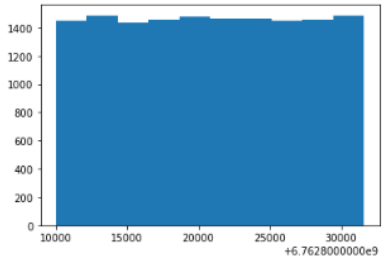
3.Perform the Below Visualizations:

Visualizations

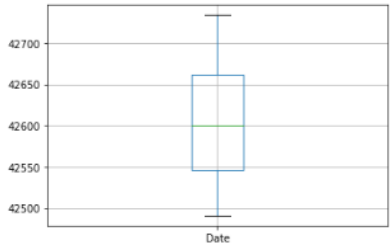
Univariate Analysis

```
In [29]: plt.hist(dataset['id'])

Out[29]: (array([1448., 1487., 1432., 1459., 1479., 1460., 1466., 1449., 1457.,
                 1483.]),
          array([6.76281002e+09, 6.76281218e+09, 6.76281434e+09, 6.76281650e+09,
                 6.76281866e+09, 6.76282082e+09, 6.76282298e+09, 6.76282514e+09,
                 6.76282730e+09, 6.76282946e+09, 6.76283162e+09]),
          <BarContainer object of 10 artists>)
```



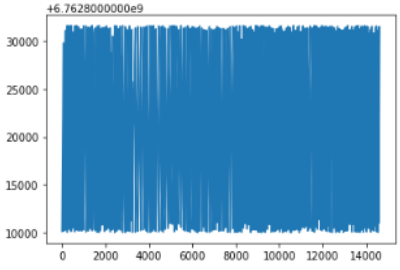
Bi variate Analysis

```
In [16]: dataset.boxplot(column="Date")

Out[16]: <AxesSubplot:>
```



Multi variate Analysis

```
In [30]: plt.plot(dataset['id'])

Out[30]: [<matplotlib.lines.Line2D at 0x23594fd45e0>]
```



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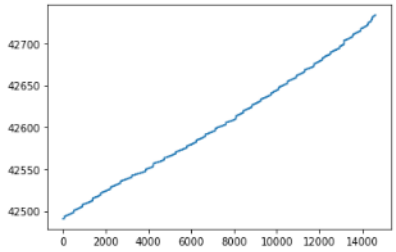
```
In [37]: plt.plot(dataset['Date'])
Out[37]: [<matplotlib.lines.Line2D at 0x235951ec400>]
```



4.Perform descriptive statistics on the dataset:

```
In [38]: dataset.describe()
```

Out[38]:

	id	Date	number of bedrooms	number of bathrooms	living area	lot area	number of floors	waterfront present	number of views	condition of the house	...	B
count	1.462000e+04	14620.000000	14620.000000	14620.000000	14620.000000	1.462000e+04	14620.000000	14620.000000	14620.000000	14620.000000	...	1462
mean	6.762821e+09	42604.538646	3.379343	2.129583	2098.262996	1.509328e+04	1.502360	0.007661	0.233105	3.430506	...	197
std	6.237575e+03	67.347991	0.938719	0.769934	928.275721	3.791962e+04	0.540239	0.087193	0.766259	0.664151	...	2
min	6.762810e+09	42491.000000	1.000000	0.500000	370.000000	5.200000e+02	1.000000	0.000000	0.000000	1.000000	...	190
25%	6.762815e+09	42546.000000	3.000000	1.750000	1440.000000	5.010750e+03	1.000000	0.000000	0.000000	3.000000	...	195
50%	6.762821e+09	42600.000000	3.000000	2.250000	1930.000000	7.620000e+03	1.500000	0.000000	0.000000	3.000000	...	197
75%	6.762826e+09	42662.000000	4.000000	2.500000	2570.000000	1.080000e+04	2.000000	0.000000	0.000000	4.000000	...	199
max	6.762832e+09	42734.000000	33.000000	8.000000	13540.000000	1.074218e+06	3.500000	1.000000	4.000000	5.000000	...	201

8 rows × 23 columns

```
In [39]: dataset["id"].mean()
Out[39]: 6762820830.52565

In [41]: dataset["number of views"].median()
Out[41]: 0.0

In [44]: dataset["Price"].mode()
Out[44]: 0    450000
         Name: Price, dtype: int64
```

5. Handle the Missing values:

Handle the missing values

```
In [45]: dataset.isnull().any()
Out[45]: id                                    False
         Date                                  False
         number of bedrooms                    False
         number of bathrooms                   False
         living area                           False
         lot area                              False
         number of floors                      False
         waterfront present                    False
         number of views                       False
         condition of the house                False
         grade of the house                    False
         Area of the house(excluding basement) False
         Area of the basement                  False
         Built Year                            False
         Renovation Year                       False
         Postal Code                           False
         Lattitude                             False
         Longitude                             False
         living_area_renov                     False
         lot_area_renov                        False
         Number of schools nearby              False
         Distance from the airport             False
         Price                                 False
         dtype: bool
```

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In [46]:
```
dataset.isnull().sum()
```

Out[46]:
```
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
```

In [47]:
```
dataset.skew()
```

Out[47]:
```
id                                    -0.000802
Date                                   0.143747
number of bedrooms                     2.663257
number of bathrooms                    0.556663
living area                            1.538337
lot area                              10.155206
number of floors                       0.586158
waterfront present                    11.294672
number of views                        3.409219
condition of the house                 1.018018
grade of the house                     0.777584
Area of the house(excluding basement)     1.436446
Area of the basement                   1.609744
Built Year                            -0.472049
Renovation Year                        4.359764
Postal Code                            0.227735
Lattitude                             -0.523831
Longitude                              0.873803
living_area_renov                      1.081959
lot_area_renov                         7.774206
Number of schools nearby              -0.022519
Distance from the airport              0.006114
Price                                  4.269298
dtype: float64
```

In [ ]:
```

```

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