In [1]:
```
# import libaries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [2]:
```
x=pd.read_csv(r"C:\Users\user\Downloads\10_USA_Housing - 10_USA_Housing.csv")
```

Out[2]:

	Avg. Area Income	Avg. Area House Age	Avg. Area Number of Rooms	Avg. Area Number of Bedrooms	Area Population	Price	Addr
0	79545.45857	5.682861	7.009188	4.09	23086.80050	1.059034e+06	208 Michael Ferry A 674\nLaurabury, 370
1	79248.64245	6.002900	6.730821	3.09	40173.07217	1.505891e+06	188 Johnson Vi Suite 079\nL Kathleen, C
2	61287.06718	5.865890	8.512727	5.13	36882.15940	1.058988e+06	9127 Elizab Stravenue\nDanielto WI 064
3	63345.24005	7.188236	5.586729	3.26	34310.24283	1.260617e+06	USS Barnett\nFPO 44
4	59982.19723	5.040555	7.839388	4.23	26354.10947	6.309435e+05	USNS Raymond\nF AE 09
...	...	...	...	...	...	...	
4995	60567.94414	7.830362	6.137356	3.46	22837.36103	1.060194e+06	USNS Williams\nF AP 30153-7
4996	78491.27543	6.999135	6.576763	4.02	25616.11549	1.482618e+06	PSC 9258, 8489\nAPO 42991-3
4997	63390.68689	7.250591	4.805081	2.13	33266.14549	1.030730e+06	4215 Tracy Gar Suite 076\nJoshuala VA 0
4998	68001.33124	5.534388	7.130144	5.44	42625.62016	1.198657e+06	USS Wallace\nFPO 73
4999	65510.58180	5.992305	6.792336	4.07	46501.28380	1.298950e+06	37778 George Rid Apt. 509\nEast H NV

5000 rows × 7 columns

In [3]:

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 5000 entries, 0 to 4999
Data columns (total 7 columns):
 #   Column                        Non-Null Count  Dtype  
---  ------                        --------------  -----  
 0   Avg. Area Income              5000 non-null   float64
 1   Avg. Area House Age           5000 non-null   float64
 2   Avg. Area Number of Rooms     5000 non-null   float64
 3   Avg. Area Number of Bedrooms  5000 non-null   float64
 4   Area Population               5000 non-null   float64
 5   Price                         5000 non-null   float64
 6   Address                       5000 non-null   object 
dtypes: float64(6), object(1)
memory usage: 273.6+ KB
```

In [4]:

Out[4]:

```
Index(['Avg. Area Income', 'Avg. Area House Age', 'Avg. Area Number of Rooms
',
       'Avg. Area Number of Bedrooms', 'Area Population', 'Price', 'Address
'],
      dtype='object')
```

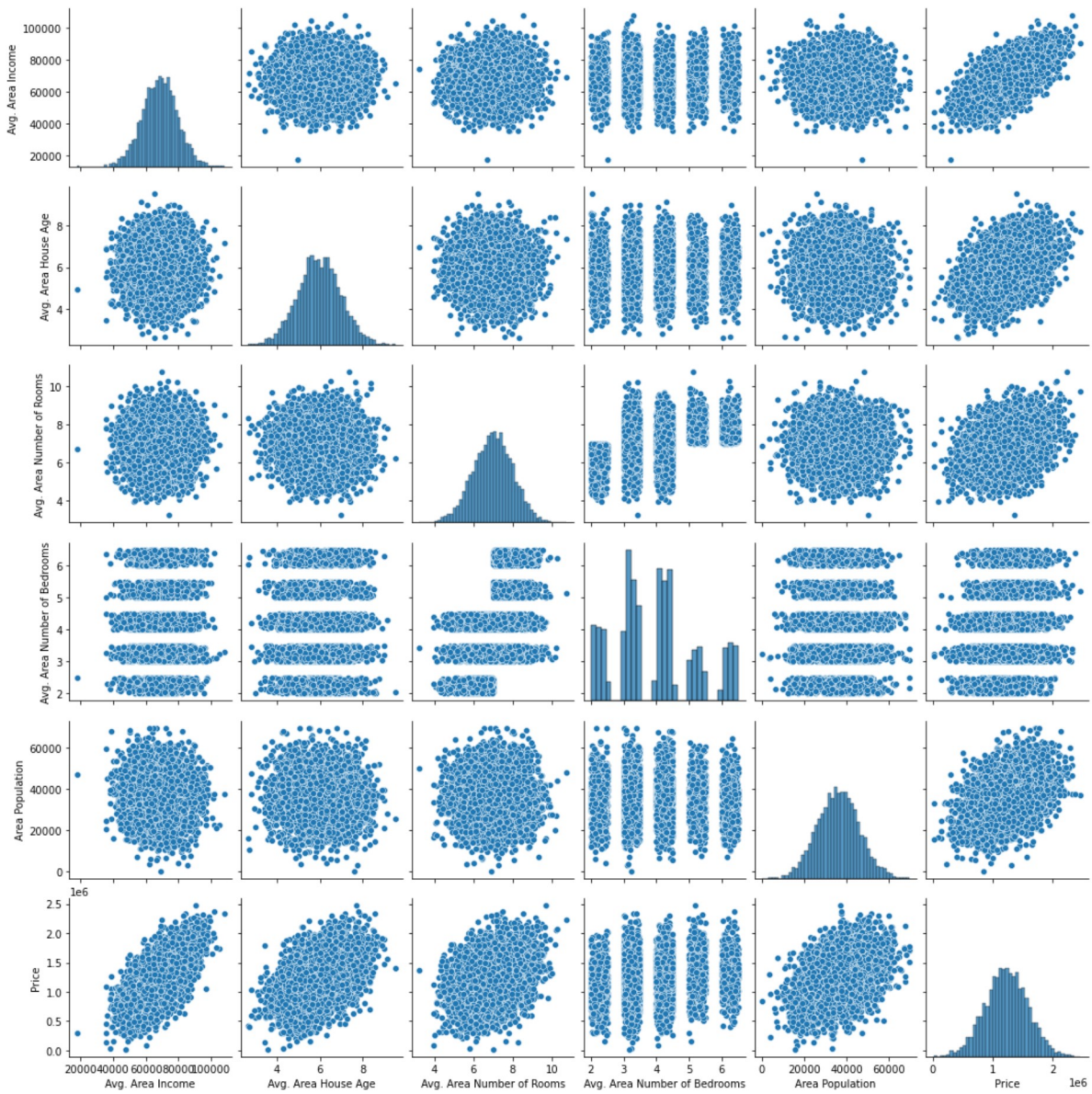
In [5]:

Out[5]:

	Avg. Area Income	Avg. Area House Age	Avg. Area Number of Rooms	Avg. Area Number of Bedrooms	Area Population	Price
count	5000.000000	5000.000000	5000.000000	5000.000000	5000.000000	5.000000e+03
mean	68583.108984	5.977222	6.987792	3.981330	36163.516039	1.232073e+06
std	10657.991214	0.991456	1.005833	1.234137	9925.650114	3.531176e+05
min	17796.631190	2.644304	3.236194	2.000000	172.610686	1.593866e+04
25%	61480.562390	5.322283	6.299250	3.140000	29403.928700	9.975771e+05
50%	68804.286405	5.970429	7.002902	4.050000	36199.406690	1.232669e+06
75%	75783.338665	6.650808	7.665871	4.490000	42861.290770	1.471210e+06
max	107701.748400	9.519088	10.759588	6.500000	69621.713380	2.469066e+06

In [6]:

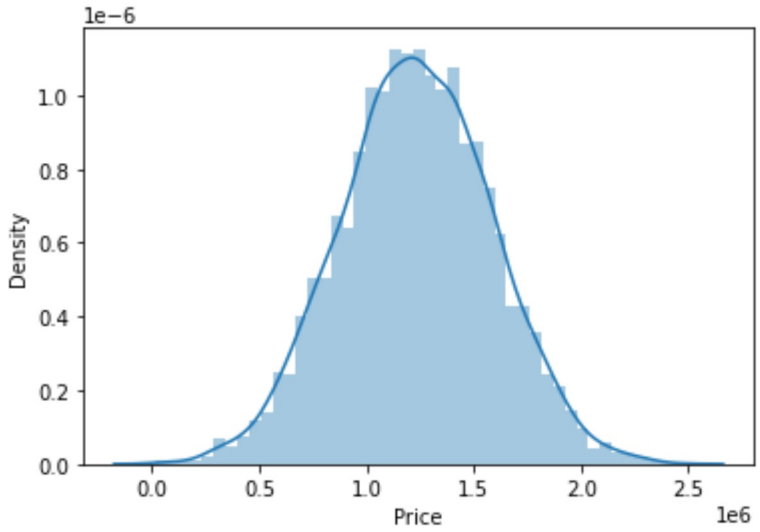
Out[6]: <seaborn.axisgrid.PairGrid at 0x2134af37040>



In [7]:

```
C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2557: Fut
ureWarning: `distplot` is a deprecated function and will be removed in a futu
re version. Please adapt your code to use either `displot` (a figure-level fu
nction with similar flexibility) or `histplot` (an axes-level function for hi
stograms).
  warnings.warn(msg, FutureWarning)
```

Out[7]: <AxesSubplot:xlabel='Price', ylabel='Density'>

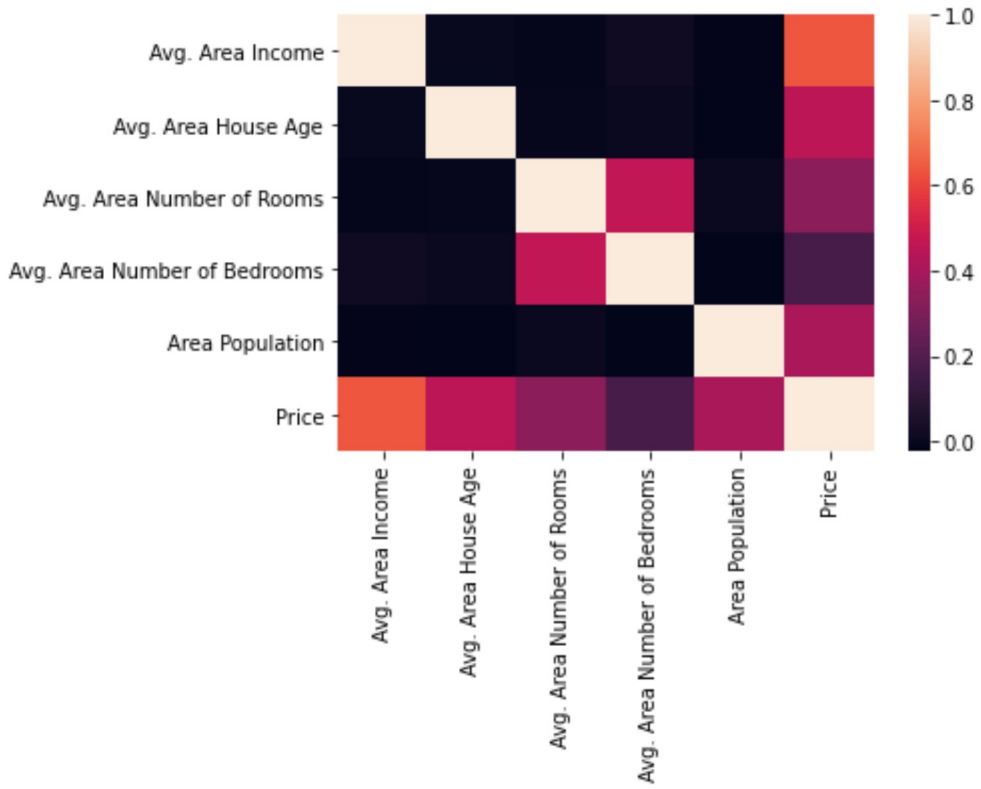


In [8]:

```
x1=x[['Avg. Area Income', 'Avg. Area House Age', 'Avg. Area Number of Rooms',
```

In [9]:

Out[9]: <AxesSubplot:>



In [10]:
```
x=x1[['Avg. Area Income', 'Avg. Area House Age', 'Avg. Area Number of Rooms',
       'Avg. Area Number of Bedrooms', 'Area Population']]
```

In [11]:
```
# to split my dataset into traning and test date

from sklearn.model_selection import train_test_split
```

In [12]:
```
from sklearn.linear_model import LinearRegression

lr=LinearRegression()
```

Out[12]: LinearRegression()

In [13]:

```
-2652152.122905781
```

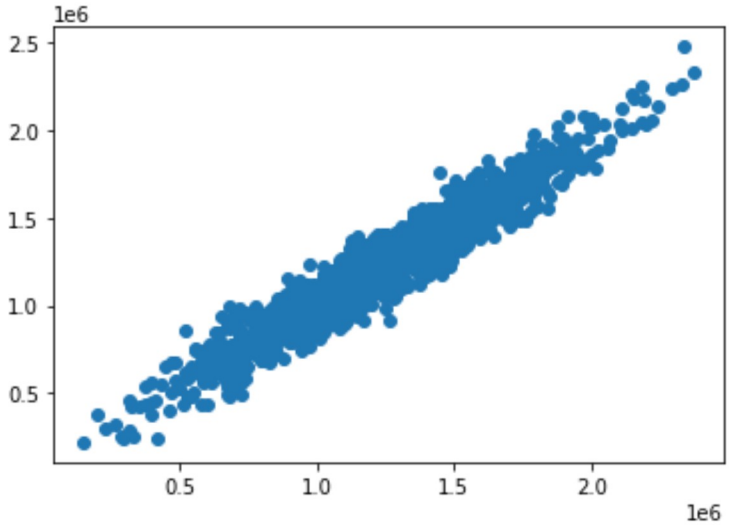
In [14]:
```
coeff=pd.DataFrame(lr.coef_,x.columns,columns=['Co-efficient'])
```

Out[14]:

	Co-efficient
Avg. Area Income	21.707317
Avg. Area House Age	165316.673665
Avg. Area Number of Rooms	121674.881555
Avg. Area Number of Bedrooms	2585.757551
Area Population	15.047110

In [15]:
```
prediction=lr.predict(x_test)
```

Out[15]:
```
<matplotlib.collections.PathCollection at 0x2134df07e20>
```



In [16]:

Out[16]:
```
0.9162638169773845
```

In [17]:

Out[17]:
```
0.9184307773610804
```

In [18]:

In [19]:
```
rr=Ridge(alpha=10)
rr.fit(x_train,y_train)
```

Out[19]:
```
0.9162701485046496
```

In [20]:
```
la=Lasso(alpha=10)
```

Out[20]:
```
Lasso(alpha=10)
```

In [21]:

Out[21]: 0.9162646337280531

In [ ]: