```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
```

```
HouseDF=pd.read_csv('USA_Housing.csv')
```

```
HouseDF.head(10)
```

	Avg. Area Income	Avg. Area House Age	Avg. Area Number of Rooms	Avg. Area Number of Bedrooms	Area Population	Price	Address
0	79545.458574	5.682861	7.009188	4.09	23086.800503	1.059034e+06	208 Michael Ferry Apt. 674\nLaurabury, NE 3701...
1	79248.642455	6.002900	6.730821	3.09	40173.072174	1.505891e+06	188 Johnson Views Suite 079\nLake Kathleen, CA
2	61287.067179	5.865890	8.512727	5.13	36882.159400	1.058988e+06	9127 Elizabeth Stravenue\nDanieltown 064
3	63345.240046	7.188236	5.586729	3.26	34310.242831	1.260617e+06	USS Barnett\nFPO AP 4
4	59982.197226	5.040555	7.839388	4.23	26354.109472	6.309435e+05	USNS Raymond\nFPO AE 0
5	80175.754159	4.988408	6.104512	4.04	26748.428425	1.068138e+06	06039 Jennifer Islands Apt. 443\nTracy KS...
6	64698.463428	6.025336	8.147760	3.41	60828.249085	1.502056e+06	4759 Daniel Shoals Suite 442\nNguyenburgh, CO ...
7	78394.339278	6.989780	6.620478	2.42	36516.358972	1.573937e+06	972 Joyce Viaduct\nLake William, TN 17778-6483

```
HouseDF.tail(10)
```

	Avg. Area Income	Avg. Area House Age	Avg. Area Number of Rooms	Avg. Area Number of Bedrooms	Area Population	Price	Address
4990	52723.876555	5.452237	8.124571	6.39	14802.088438	4.795006e+05	86727 Kelly Plaza\nLake Veronica, IL 04474
4991	74102.191890	5.657841	7.683993	3.13	24041.270592	1.263721e+06	2871 John Lodge\nAmychester, GU 61734-5597
4992	87499.125743	6.403473	4.836091	4.02	40815.199679	1.568701e+06	Unit 2096 Box 9559\nDPO AE 80983-8797
4993	69639.140896	5.007510	7.778375	6.05	54056.128430	1.381831e+06	5259 David Causeway Apt. 975\nSouth Alexstad, ...
4994	73060.846226	5.293682	6.312253	4.16	22695.695480	9.053549e+05	5224 Lamb Passage\nNancystad, GA 16579
4995	60567.944140	7.830362	6.137356	3.46	22837.361035	1.060194e+06	USNS Williams\nFPO AP 30153-7653
4996	78491.275435	6.999135	6.576763	4.02	25616.115489	1.482618e+06	PSC 9258, Box 8489\nAPO AA 42991-3352

4215 Tracy Garden Suite

```
HouseDF.info()
```

```
<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
```

```
HouseDF.describe()
```

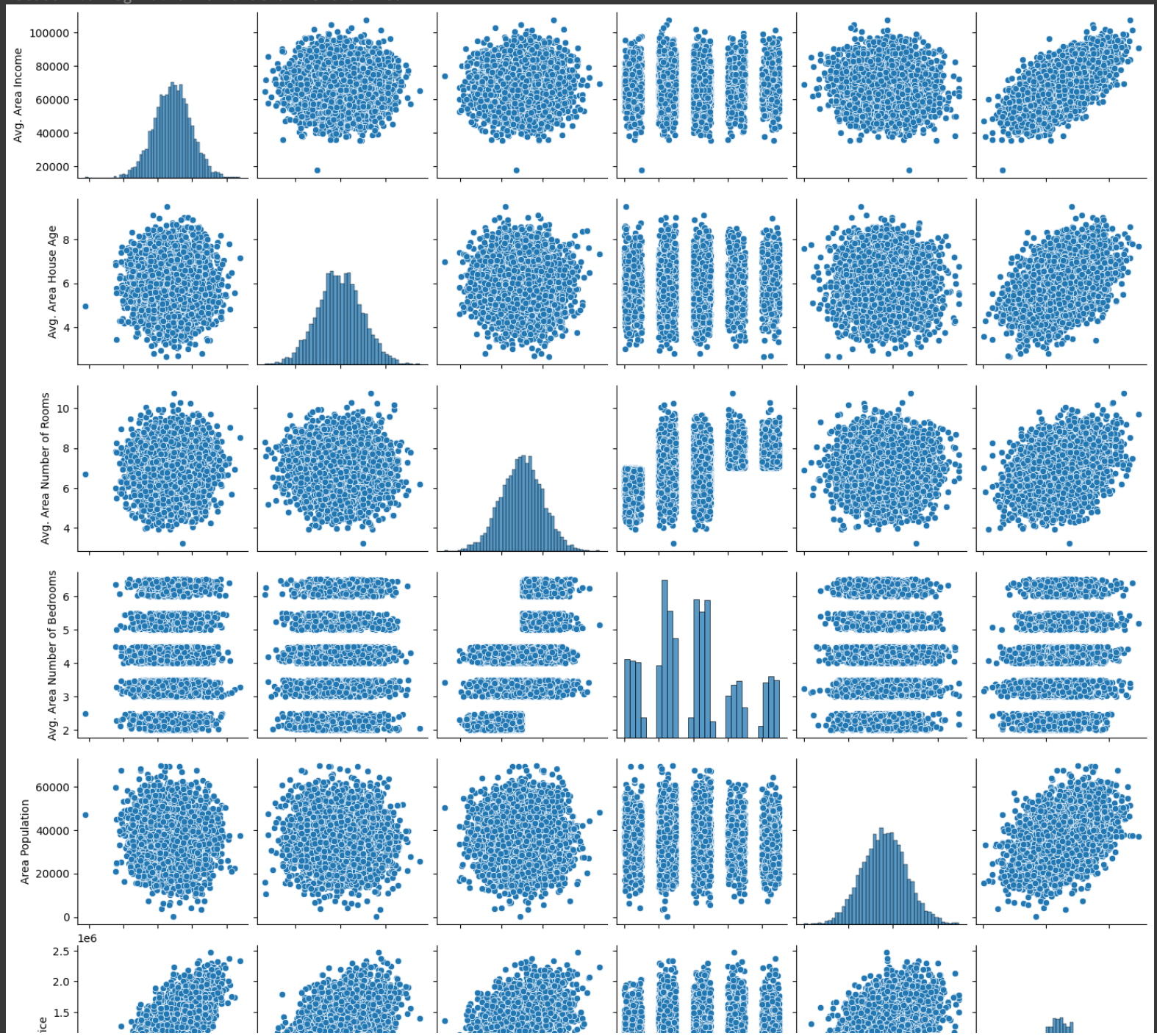
	Avg. Area Income	Avg. Area House Age	Avg. Area Number of Rooms	Avg. Area Number of Bedrooms	Area Population	Price
count	5000.000000	5000.000000	5000.000000	5000.000000	5000.000000	5.000000e+03
mean	68583.108984	5.977222	6.987792	3.981330	36163.516039	1.232073e+06
std	10657.991214	0.991456	1.005833	1.234137	9925.650114	3.531176e+05
min	17796.631190	2.644304	3.236194	2.000000	172.610686	1.593866e+04
25%	61480.562388	5.322283	6.299250	3.140000	29403.928702	9.975771e+05
50%	68804.286404	5.970429	7.002902	4.050000	36199.406689	1.232669e+06
75%	75783.338666	6.650808	7.665871	4.490000	42861.290769	1.471210e+06
max	107701.748378	9.519088	10.759588	6.500000	69621.713378	2.469066e+06

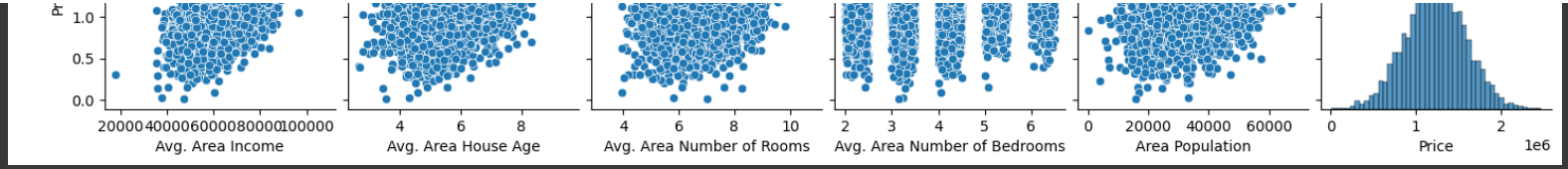
```
HouseDF.columns
```

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

```
sns.pairplot(HouseDF)
```

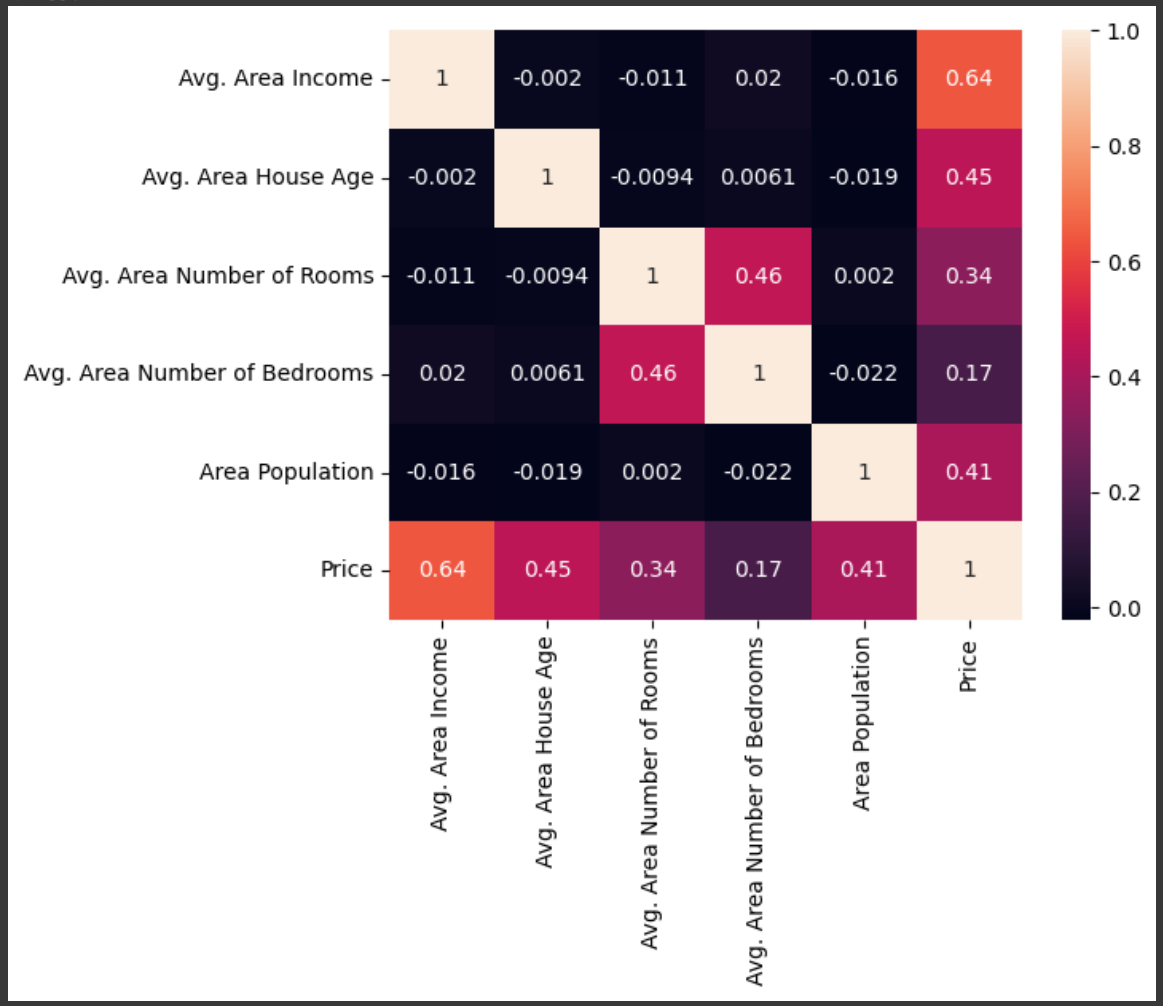
```
<seaborn.axisgrid.PairGrid at 0x7f37073291c0>
```





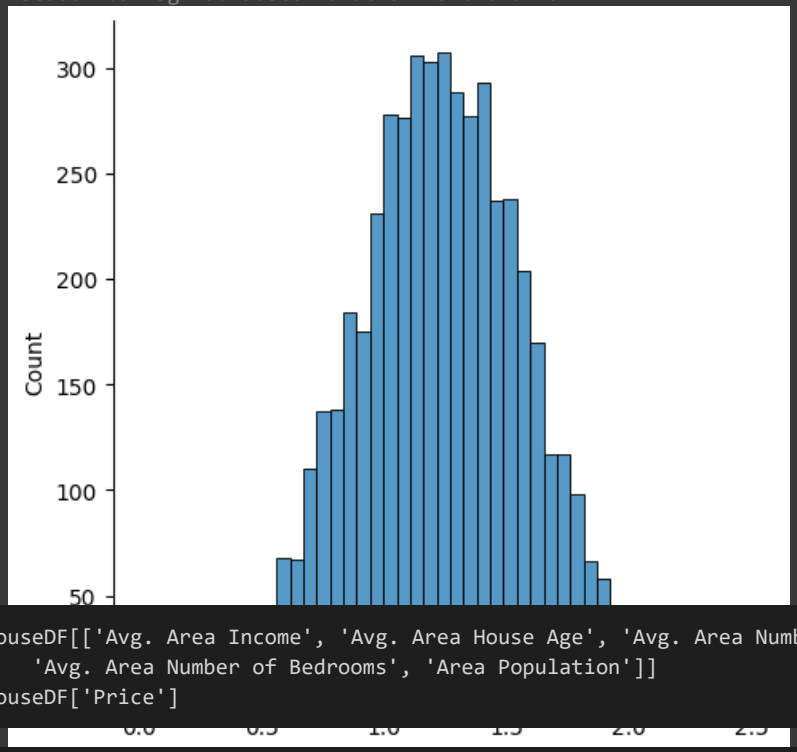

```
sns.heatmap(HouseDF.corr(),annot=True)
```

```
<ipython-input-11-8cf50b268fbb>:1: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a future
  sns.heatmap(HouseDF.corr(),annot=True)
<Axes: >
```




```
sns.displot(HouseDF['Price'])
```

```
<seaborn.axisgrid.FacetGrid at 0x7f3702b4b4f0>
```




```
X=HouseDF[['Avg. Area Income', 'Avg. Area House Age', 'Avg. Area Number of Rooms',
       'Avg. Area Number of Bedrooms', 'Area Population']]
y=HouseDF['Price']
```

```
from sklearn.model_selection import train_test_split
X_train,X_test,y_train,y_test = train_test_split(X,y,test_size=0.4,random_state=101)
```

```
from sklearn.linear_model import LinearRegression
lm=LinearRegression()
lm.fit(X_train,y_train)
```

```
▾ LinearRegression
LinearRegression()
```

```
predictions=lm.predict(X_test)
```

```
plt.scatter(y_test,predictions)
```

```
<matplotlib.collections.PathCollection at 0x7f36fd5830a0>
```