In [20]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
```

In [2]:
```
usahousingdata=pd.read_csv('USA_Housing.csv')
```

In [21]:
```
#usahousingdata.columns

#usahousingdata.head()
#sns.pairplot(usahousingdata)
#sns.heatmap(usahousingdata.corr())

x=usahousingdata[['Avg. Area Income', 'Avg. Area House Age', 'Avg. Area Number of Rooms
       'Avg. Area Number of Bedrooms', 'Area Population']]
y=usahousingdata['Price']
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.4,random_state=101)

lm=LinearRegression()
lm.fit(x_train,y_train)
```

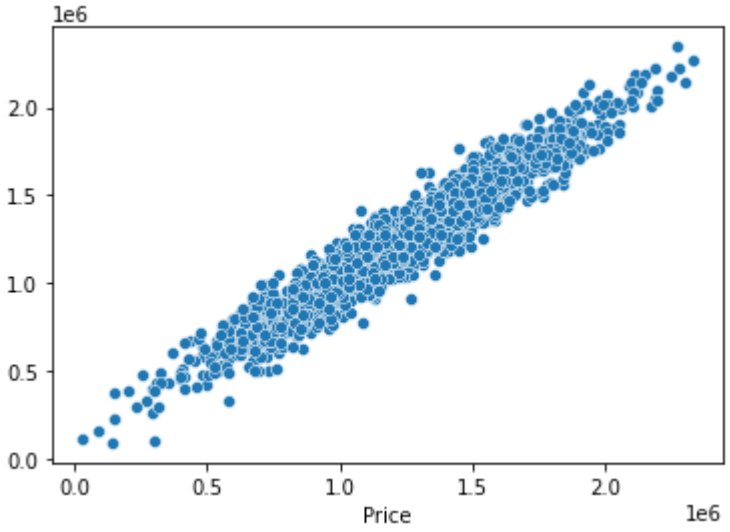
Out[21]:
```
LinearRegression()
```

In [22]:
```
prediction =lm.predict(x_test)
```

In [26]:
```
sns.scatterplot(y_test,prediction)
#sns.distplot(y_test-prediction,bins=50)
```

```
C:\Users\admin\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pas
s the following variables as keyword args: x, y. From version 0.12, the only valid posit
ional argument will be `data`, and passing other arguments without an explicit keyword w
ill result in an error or misinterpretation.
  warnings.warn(
```

Out[26]:
```
<AxesSubplot:xlabel='Price'>
```




In [32]:
```
from sklearn import metrics
```

```
print('mean absolute error : ' , metrics.mean_absolute_error(y_test,prediction))
print('mean squuare error : ' , metrics.mean_squared_error(y_test,prediction))
print('root mean absolute error : ' , np.sqrt(metrics.mean_absolute_error(y_test,predic
```

```
mean absolute error :  82288.22251914951
mean squuare error :  10460958907.208992
root mean absolute error :  286.85923816246446
```

In [36]:
```
lm.intercept_
#lm.coef_
```

Out[36]:
```
-2640159.796852678
```

In [34]:
```
coeff_df=pd.DataFrame(lm.coef_,x_test.columns,columns=['coefficient'])
```

In [35]:
```
coeff_df
```

Out[35]:

| | coefficient |
|---|---|
| **Avg. Area Income** | 21.528276 |
| **Avg. Area House Age** | 164883.282027 |
| **Avg. Area Number of Rooms** | 122368.678027 |
| **Avg. Area Number of Bedrooms** | 2233.801864 |
| **Area Population** | 15.150420 |

In [ ]:
```

```