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

df_index = pd.read_csv('Houseprices.csv')

df_index.head()
```

	Price	Living Area	Bathrooms	Bedrooms	Lot Size	Age	Fireplace
0	142212	1982	1.0	3	2.00	133	0
1	134865	1676	1.5	3	0.38	14	1
2	118007	1694	2.0	3	0.96	15	1
3	138297	1800	1.0	2	0.48	49	1
4	129470	2088	1.0	3	1.84	29	1

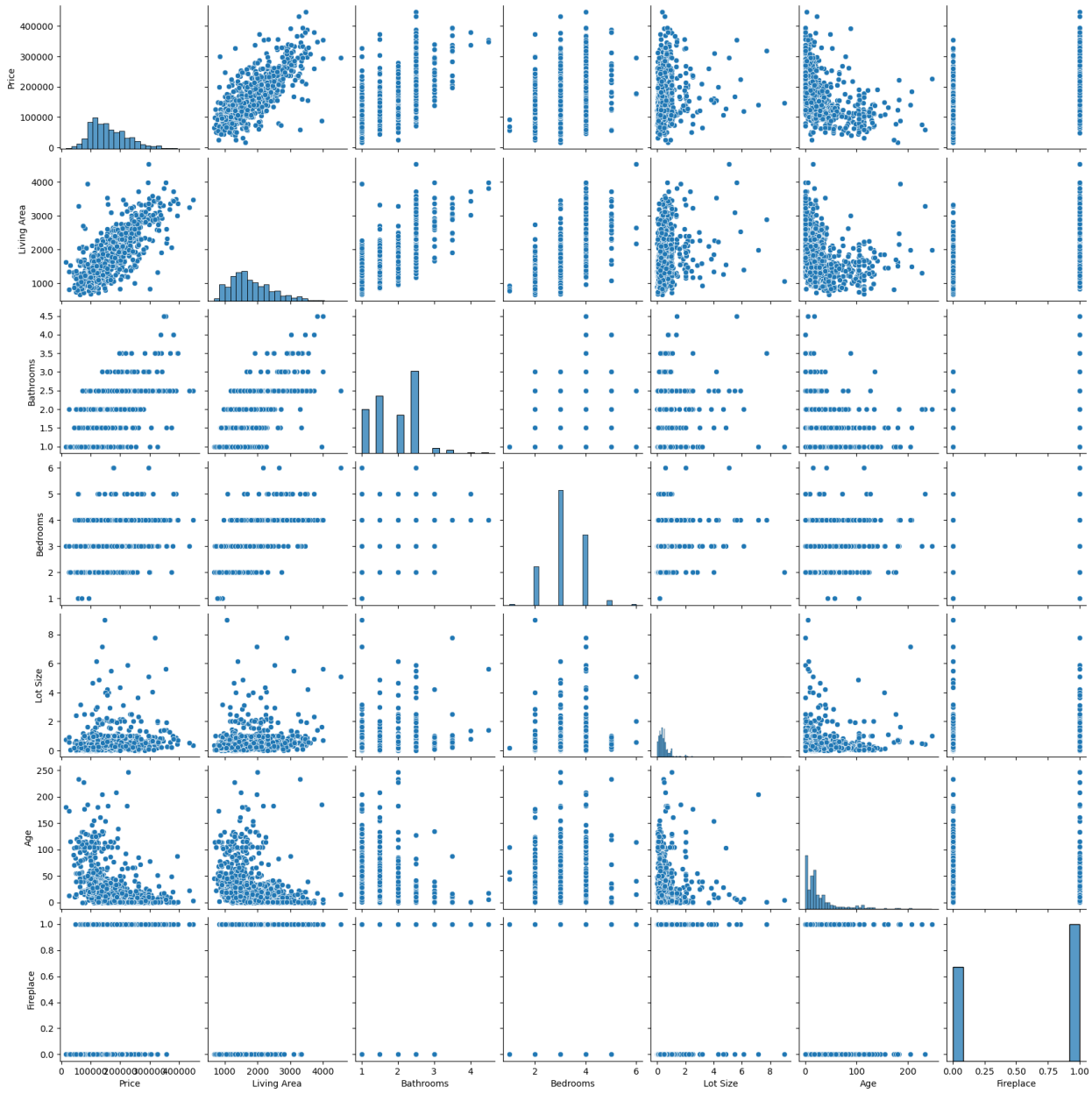
```
df_index.isnull().sum()
```

```
Price          0
Living Area    0
Bathrooms      0
Bedrooms       0
Lot Size       0
Age            0
Fireplace      0
dtype: int64
```

```
sns.pairplot(df_index)
```

```
C:\Users\abyji\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118:
UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

```
<seaborn.axisgrid.PairGrid at 0x1f05a42d610>
```




```
df_index.corr()
```

	Price	Living Area	Bathrooms	Bedrooms	Lot Size	Age
Price	1.000000	0.776396	0.670189	0.471074	0.155284	-0.363354
Living Area	0.776396	1.000000	0.722649	0.664347	0.200180	-0.263168
Bathrooms	0.670189	0.722649	1.000000	0.491798	0.100993	-0.443830
Bedrooms	0.471074	0.664347	0.491798	1.000000	0.140682	-0.060598

```
Lot Size     0.155284     0.200180   0.100993  0.140682  1.000000
0.015135
Age         -0.363354    -0.263168  -0.443830 -0.060598  0.015135
1.000000
Fireplace    0.460237     0.481436   0.444700  0.295873  0.052765 -
0.248794
```

```
             Fireplace
Price         0.460237
Living Area   0.481436
Bathrooms     0.444700
Bedrooms      0.295873
Lot Size      0.052765
Age          -0.248794
Fireplace     1.000000
```

```
df_index.columns
```

```
Index(['Price', 'Living Area', 'Bathrooms', 'Bedrooms', 'Lot Size',
'Age',
       'Fireplace'],
      dtype='object')
```

```
df_index.head()
```

```
    Price  Living Area  Bathrooms  Bedrooms  Lot Size  Age  Fireplace
0  142212         1982        1.0         3      2.00  133          0
1  134865         1676        1.5         3      0.38   14          1
2  118007         1694        2.0         3      0.96   15          1
3  138297         1800        1.0         2      0.48   49          1
4  129470         2088        1.0         3      1.84   29          1
```

```
x = df_index.drop(['Price'], axis=1)
```

```
from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x, y,
test_size=0.3, random_state=0)
```

```
from sklearn.linear_model import LinearRegression
lr = LinearRegression()
lr.fit(x_train, y_train)
```

```
LinearRegression()
```

```
c = lr.intercept_
m = lr.coef_
```

```
c
```

```
20113.272534176678
```

```
m
```

```
array([   64.44236734, 16105.35718602, -1822.46594072,  2796.63968465,
        -225.9014113 ,  9243.54056637])
```

```
y_pred = lr.predict(x_test)
```

```
from sklearn.metrics import mean_squared_error, r2_score
mse = mean_squared_error(y_test, y_pred)
r2 = r2_score(y_test, y_pred)
print("Mean Squared Error:", mse)
print("R-squared:", r2)
```

```
Mean Squared Error: 1980406867.1799626
R-squared: 0.594507172395651
```

```
x_new = pd.DataFrame({
    'Living Area': [600],
    'Bathrooms': [1],
    'Bedrooms': [1],
    'Lot Size': [0.2],
    'Age': [2],
    'Fireplace': [0],
 })
```

```
y_new_pred = lr.predict(x_new)
print("Predicted price for new data:", y_new_pred[0])
```

```
Predicted price for new data: 73169.1092973751
```