In [1]:

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

df=pd.read_csv("bhp (1).csv")
df
```

Out[1]:

	location	size	total_sqft	bath	price	bhk	price_per_sqft
0	Electronic City Phase II	2 BHK	1056.0	2	39.07	2	3699
1	Chikka Tirupathi	4 Bedroom	2600.0	5	120.00	4	4615
2	Uttarahalli	3 BHK	1440.0	2	62.00	3	4305
3	Lingadheeranahalli	3 BHK	1521.0	3	95.00	3	6245
4	Kothanur	2 BHK	1200.0	2	51.00	2	4250
...	...	...	...	...	...	...	...
13195	Whitefield	5 Bedroom	3453.0	4	231.00	5	6689
13196	other	4 BHK	3600.0	5	400.00	4	11111
13197	Raja Rajeshwari Nagar	2 BHK	1141.0	2	60.00	2	5258
13198	Padmanabhanagar	4 BHK	4689.0	4	488.00	4	10407
13199	Doddathoguru	1 BHK	550.0	1	17.00	1	3090

13200 rows × 7 columns

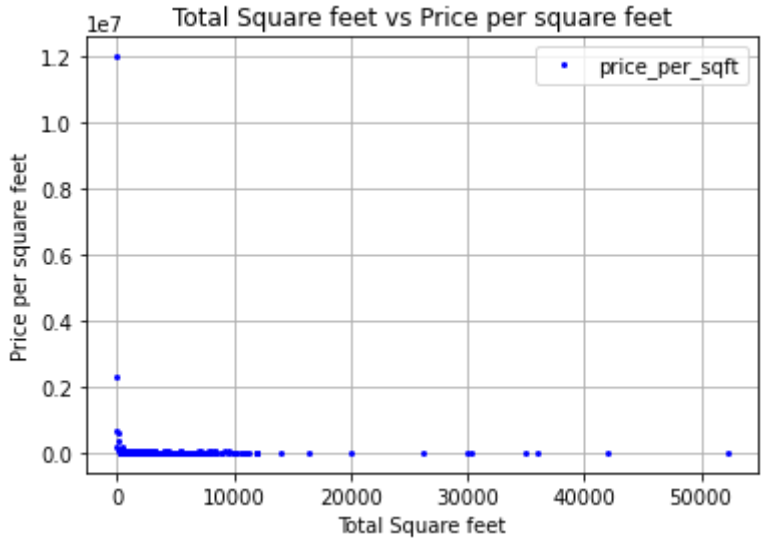
In [2]:

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 13200 entries, 0 to 13199
Data columns (total 7 columns):
 #   Column          Non-Null Count  Dtype  
---  ------          --------------  -----  
 0   location        13200 non-null  object 
 1   size            13200 non-null  object 
 2   total_sqft      13200 non-null  float64
 3   bath            13200 non-null  int64  
 4   price           13200 non-null  float64
 5   bhk             13200 non-null  int64  
 6   price_per_sqft  13200 non-null  int64  
dtypes: float64(2), int64(3), object(2)
memory usage: 722.0+ KB
```

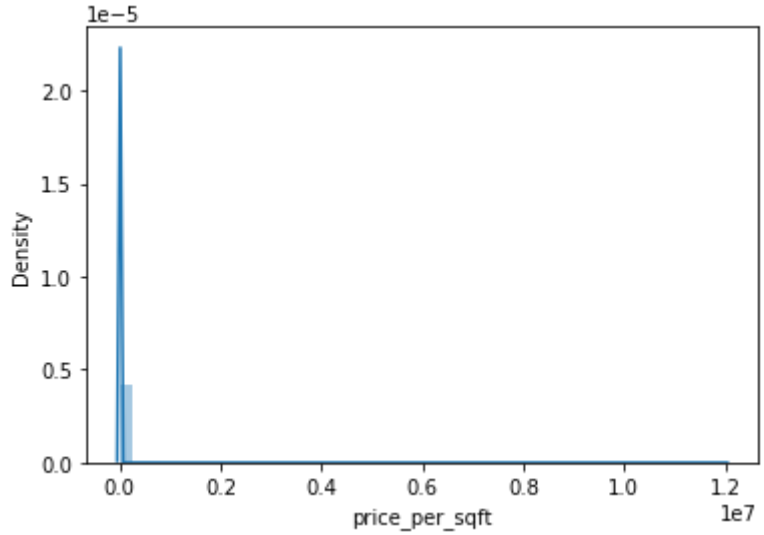
In [3]:

```
df.plot(x="total_sqft",y="price_per_sqft",style="o",color="blue",markersize=2)
plt.title("Total Square feet vs Price per square feet")
plt.xlabel("Total Square feet")
plt.ylabel("Price per square feet")
plt.grid()
plt.show()
```



In [4]:
```
sns.distplot(df["price_per_sqft"])
plt.show()
```

```
C:\Users\Lakshya Singh Bisht\anaconda3\lib\site-packages\seaborn\distributions.py:2619: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```



In [ ]:
```
```

In [5]:
```
round(df.price_per_sqft.mean(),2)
```

Out[5]:
```
7920.34
```

In [6]:
```
round(df.price_per_sqft.std(),2)
```

Out[6]:
```
106727.16
```

In [7]:
```
df['zscore']=(df.price_per_sqft-df.price_per_sqft.mean())/df.price_per_sqft.std()
```

In [8]:
```
```

```
df.head(10)
```

Out[8]:

	location	size	total_sqft	bath	price	bhk	price_per_sqft	zscore
0	Electronic City Phase II	2 BHK	1056.0	2	39.07	2	3699	-0.039553
1	Chikka Tirupathi	4 Bedroom	2600.0	5	120.00	4	4615	-0.030970
2	Uttarahalli	3 BHK	1440.0	2	62.00	3	4305	-0.033875
3	Lingadheeranahalli	3 BHK	1521.0	3	95.00	3	6245	-0.015697
4	Kothanur	2 BHK	1200.0	2	51.00	2	4250	-0.034390
5	Whitefield	2 BHK	1170.0	2	38.00	2	3247	-0.043788
6	Old Airport Road	4 BHK	2732.0	4	204.00	4	7467	-0.004248
7	Rajaji Nagar	4 BHK	3300.0	4	600.00	4	18181	0.096139
8	Marathahalli	3 BHK	1310.0	3	63.25	3	4828	-0.028974
9	other	6 Bedroom	1020.0	6	370.00	6	36274	0.265665

In [9]:
```
df[(df.zscore<-3)|(df.zscore>3)]
```

Out[9]:

	location	size	total_sqft	bath	price	bhk	price_per_sqft	zscore
345	other	3 Bedroom	11.0	3	74.0	3	672727	6.229030
1106	other	5 Bedroom	24.0	2	150.0	5	625000	5.781843
4044	Sarjapur Road	4 Bedroom	1.0	4	120.0	4	12000000	112.362023
4924	other	7 BHK	5.0	7	115.0	7	2300000	21.476067
11447	Whitefield	4 Bedroom	60.0	4	218.0	4	363333	3.330105

In [10]:
```
df_noutliers=df[(df.zscore>-3)&(df.zscore<3)]
```

In [11]:
```
df.shape
```

Out[11]:
```
(13200, 8)
```

In [12]:
```
df_noutliers.shape
```

Out[12]:
```
(13195, 8)
```

In [13]:
```
round(df_noutliers.price_per_sqft.describe(),2)
```

Out[13]:
```
count     13195.00
mean       6713.71
std        4876.73
min         267.00
25%        4266.50
50%        5434.00
75%        7313.00
max      200000.00
Name: price_per_sqft, dtype: float64
```

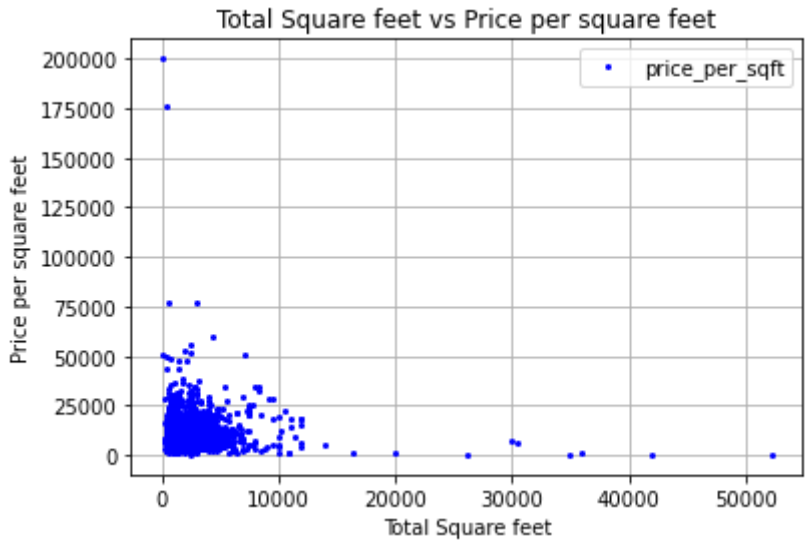
In [14]:
```
df_noutliers
```

Out[14]:

	location	size	total_sqft	bath	price	bhk	price_per_sqft	zscore
0	Electronic City Phase II	2 BHK	1056.0	2	39.07	2	3699	-0.039553
1	Chikka Tirupathi	4 Bedroom	2600.0	5	120.00	4	4615	-0.030970
2	Uttarahalli	3 BHK	1440.0	2	62.00	3	4305	-0.033875
3	Lingadheeranahalli	3 BHK	1521.0	3	95.00	3	6245	-0.015697
4	Kothanur	2 BHK	1200.0	2	51.00	2	4250	-0.034390
...	...	...	...	...	...	...	...	...
13195	Whitefield	5 Bedroom	3453.0	4	231.00	5	6689	-0.011537
13196	other	4 BHK	3600.0	5	400.00	4	11111	0.029896
13197	Raja Rajeshwari Nagar	2 BHK	1141.0	2	60.00	2	5258	-0.024945
13198	Padmanabhanagar	4 BHK	4689.0	4	488.00	4	10407	0.023299
13199	Doddathoguru	1 BHK	550.0	1	17.00	1	3090	-0.045259

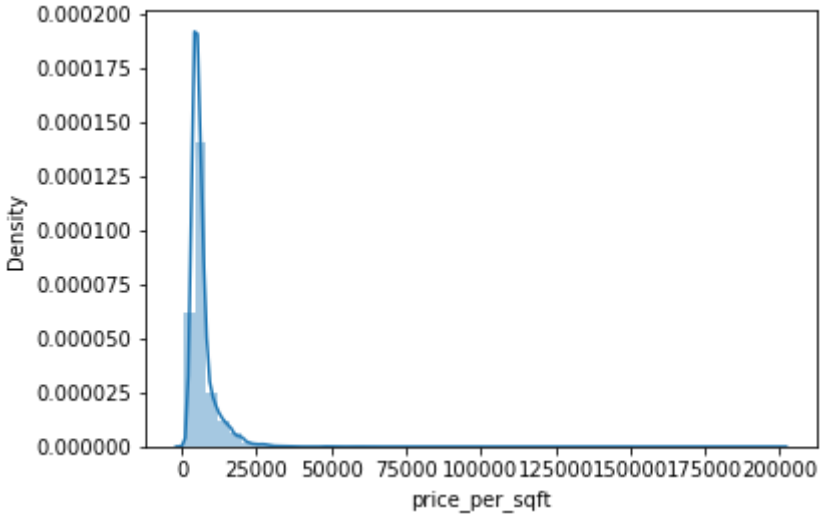
13195 rows × 8 columns

In [15]:
```
df_noutliers.plot(x="total_sqft",y="price_per_sqft",style="o",color="blue",markersiz
plt.title("Total Square feet vs Price per square feet")
plt.xlabel("Total Square feet")
plt.ylabel("Price per square feet")
plt.grid()
plt.show()
```



In [16]:
```
sns.distplot(df_noutliers["price_per_sqft"])
plt.show()
```

```
C:\Users\Lakshya Singh Bisht\anaconda3\lib\site-packages\seaborn\distributions.py:26
19: FutureWarning: `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 function
with similar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```


0.000200
0.000175
0.000150
0.000125
0.000100
0.000075
0.000050
0.000025
0.000000
Density
0
25000
50000
75000
100000
125000
150000
175000
200000
price_per_sqft

In [ ]: