ROLL NO. 412039

AIM: To Study Visualization using Matplotlib Library of Python

CODE & OUTPUT :

In [2]:

```
import pandas as pd
import numpy as np
```

In [5]:

```
import matplotlib.pyplot as plt
from sklearn.datasets import fetch_california_housing
```

In [10]:

```
f = pd.read_csv('Downloads/housing.csv')
```

In [11]:

```
f.head()
```

Out[11]:

	longitude	latitude	housing_median_age	total_rooms	total_bedrooms	population	househo
0	-122.23	37.88	41.0	880.0	129.0	322.0	1
1	-122.22	37.86	21.0	7099.0	1106.0	2401.0	11
2	-122.24	37.85	52.0	1467.0	190.0	496.0	1
3	-122.25	37.85	52.0	1274.0	235.0	558.0	2
4	-122.25	37.85	52.0	1627.0	280.0	565.0	2

In [12]:

```
f.tail()
```

Out[12]:

	longitude	latitude	housing_median_age	total_rooms	total_bedrooms	population	hou
20635	-121.09	39.48	25.0	1665.0	374.0	845.0	
20636	-121.21	39.49	18.0	697.0	150.0	356.0	
20637	-121.22	39.43	17.0	2254.0	485.0	1007.0	
20638	-121.32	39.43	18.0	1860.0	409.0	741.0	
20639	-121.24	39.37	16.0	2785.0	616.0	1387.0	

In [13]:

```
f.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 20640 entries, 0 to 20639
Data columns (total 10 columns):
 #   Column              Non-Null Count  Dtype  
---  ------              --------------  -----  
 0   longitude           20640 non-null  float64
 1   latitude            20640 non-null  float64
 2   housing_median_age  20640 non-null  float64
 3   total_rooms         20640 non-null  float64
 4   total_bedrooms      20433 non-null  float64
 5   population          20640 non-null  float64
 6   households          20640 non-null  float64
 7   median_income       20640 non-null  float64
 8   median_house_value  20640 non-null  float64
 9   ocean_proximity     20640 non-null  object 
dtypes: float64(9), object(1)
memory usage: 1.6+ MB
```

In [14]:

```
f.dtypes
```

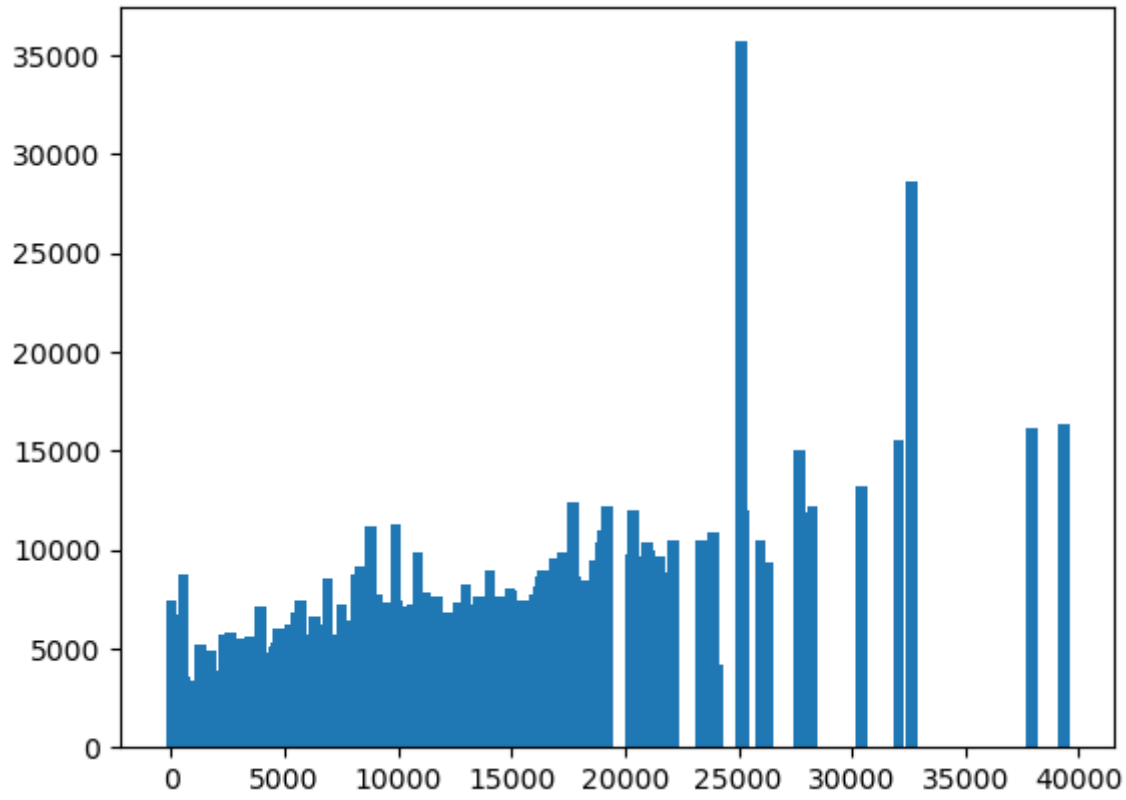
Out[14]:

```
longitude             float64
latitude              float64
housing_median_age    float64
total_rooms           float64
total_bedrooms        float64
population            float64
households            float64
median_income         float64
median_house_value    float64
ocean_proximity        object
dtype: object
```

In [15]:

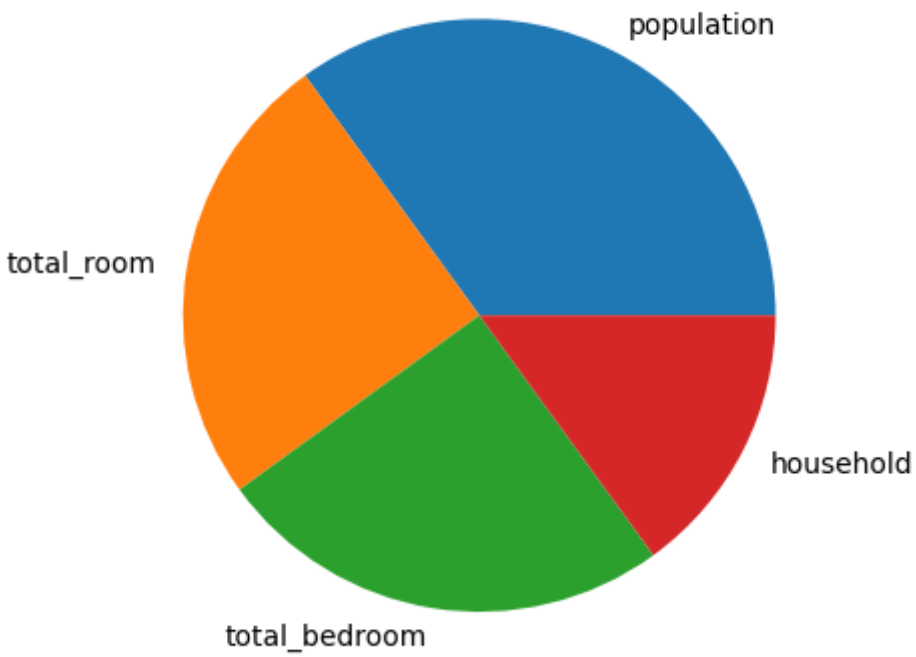
```
# fig = plt.figure(figsize =(10, 7))
plt.bar(f['total_rooms'] , f['population'] ,width=500)

plt.show()
```



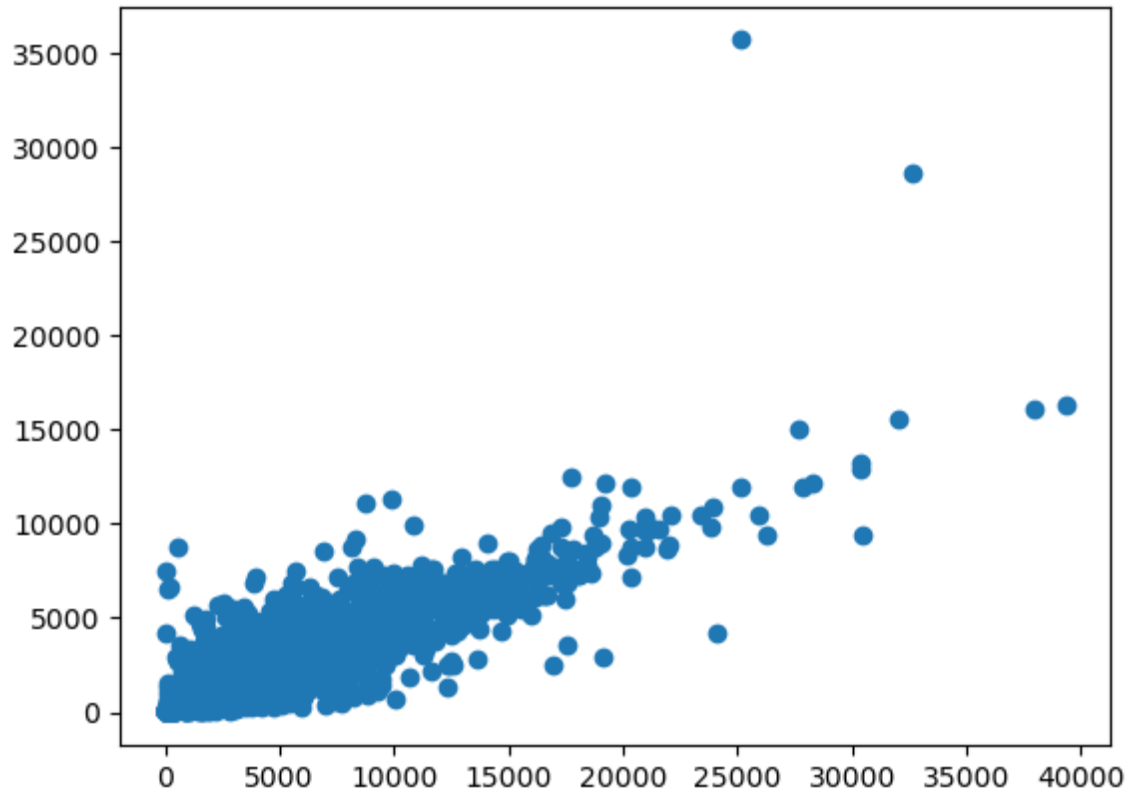
In [21]:

```
y = np.array([35, 25, 25, 15])
mylabels = ["population", "total_room", "total_bedroom", "household"]
plt.pie(y,labels=mylabels)
plt.show()
```



In [17]:

```
plt.scatter(f['total_rooms'] , f['population'] )
plt.show()
```



In [18]:

```
plt.hist(f['total_bedrooms'])
plt.show()
```