In [2]:
```python
import pandas as pd
import matplotlib.pyplot as plt
df=pd.read_csv("Dataset.csv")
df.head()
```

Out[2]:

|	Date	BTC	NYSE	NASDAQ	LSE	BTC_Volume	NYSE_Volume	NASDA
0	1/2/2018	14982.09961	12902.71973	7006.899902	3742.0	1.684660e+10	3397430000	1
1	1/3/2018	15201.00000	12957.28027	7065.529785	3749.0	1.687190e+10	3544030000	2
2	1/4/2018	15599.20020	13028.45996	7077.910156	3749.0	2.178320e+10	3697340000	2
3	1/5/2018	17429.50000	13103.23047	7136.560059	3758.0	2.384090e+10	3239280000	2
4	1/8/2018	15170.09961	13114.34961	7157.390137	3744.0	1.841390e+10	3246160000	2

In [4]:
```python
ds=df.loc[:,['BTC','BTC_Volume']]
plt.figure(figsize=(10,7))
plt.scatter(ds[['BTC']],ds[['BTC_Volume']],s=50)
```

Out[4]: <matplotlib.collections.PathCollection at 0x208831415d0>
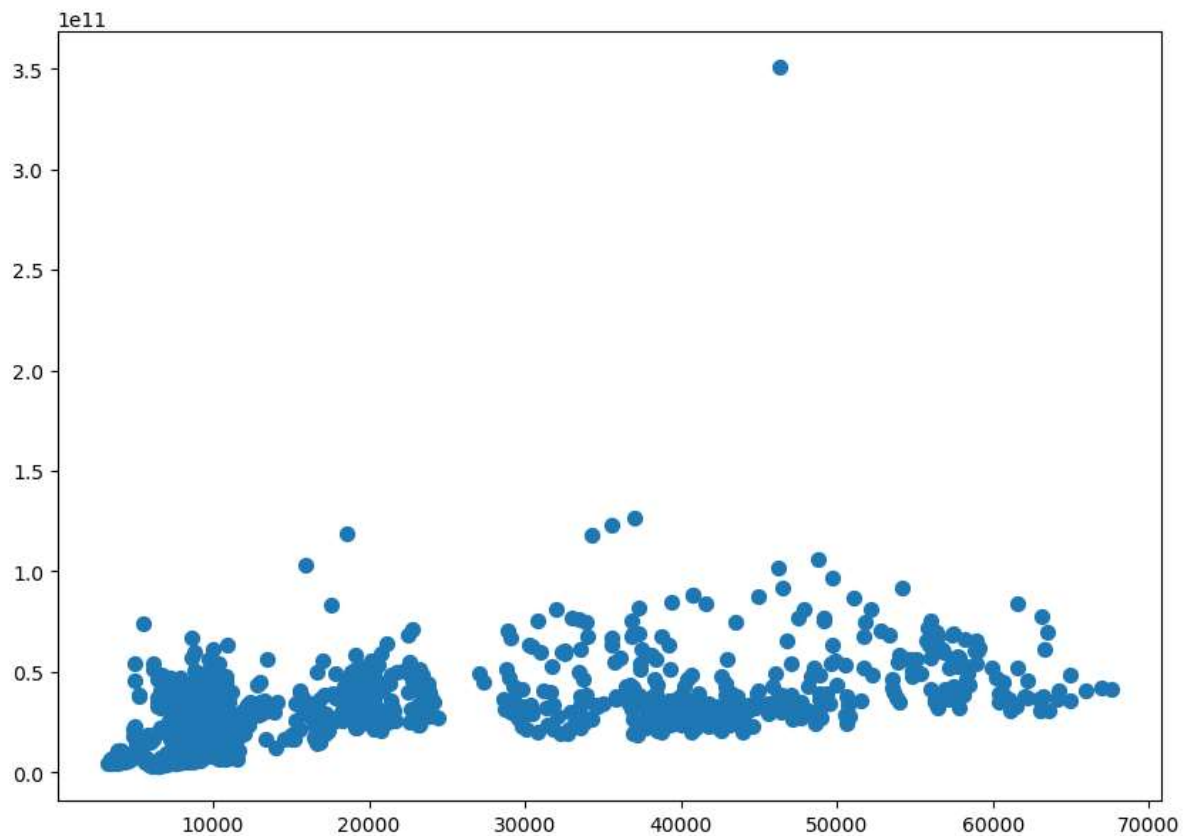
In [5]:
```python
import scipy.cluster.hierarchy as sch
plt.figure(figsize=(10,7))
dendrogram=sch.dendrogram(sch.linkage(ds,method="ward"))
plt.title("Dendrogram")
plt.xlabel('dataset')
plt.ylabel('bitcoin')
plt.show()
```
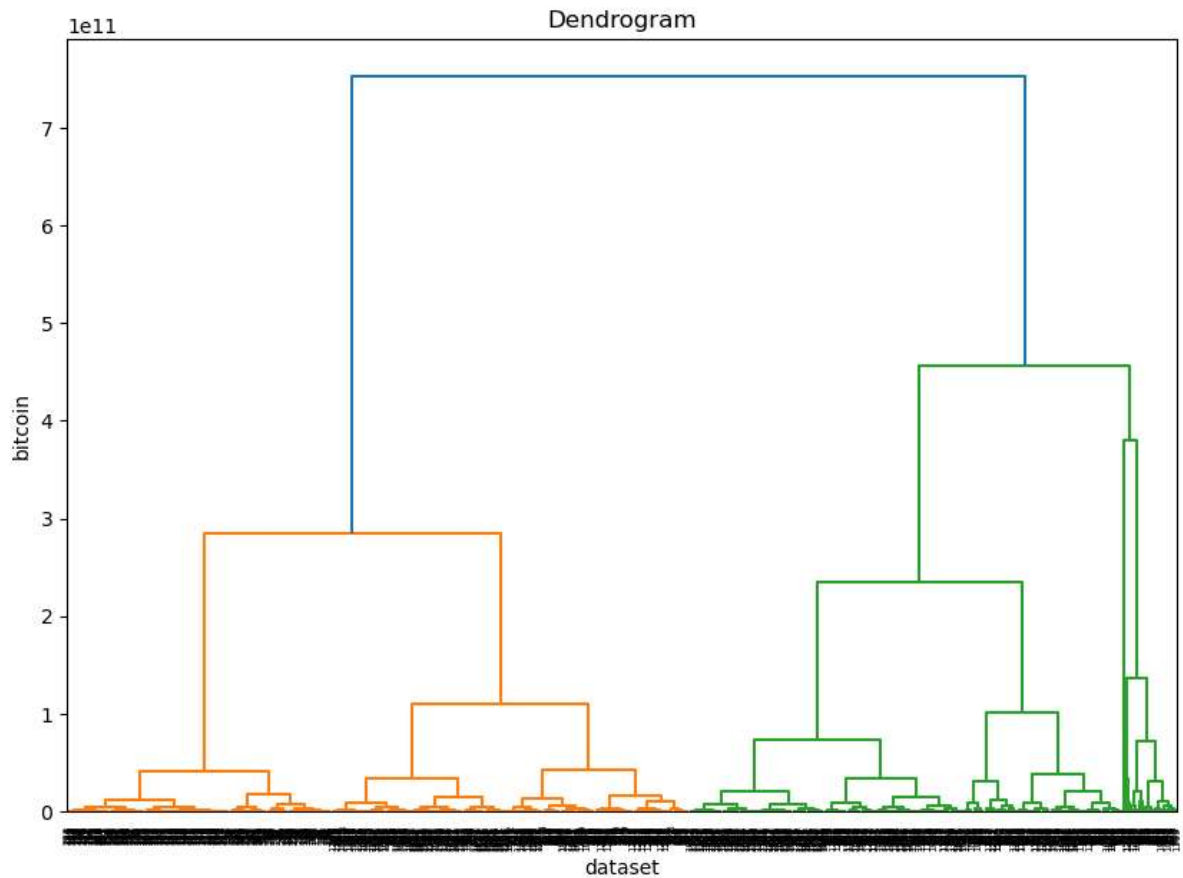

In [7]:
```python
from sklearn.cluster import AgglomerativeClustering
cluster=AgglomerativeClustering(n_clusters=2,affinity="euclidean",linkage="war
cluster.fit_predict(ds)
```

```
C:\Users\kasinathan\anaconda3\ds\lib\site-packages\sklearn\cluster\_agglomera
tive.py:983: FutureWarning: Attribute `affinity` was deprecated in version 1.
2 and will be removed in 1.4. Use `metric` instead
  warnings.warn(
```
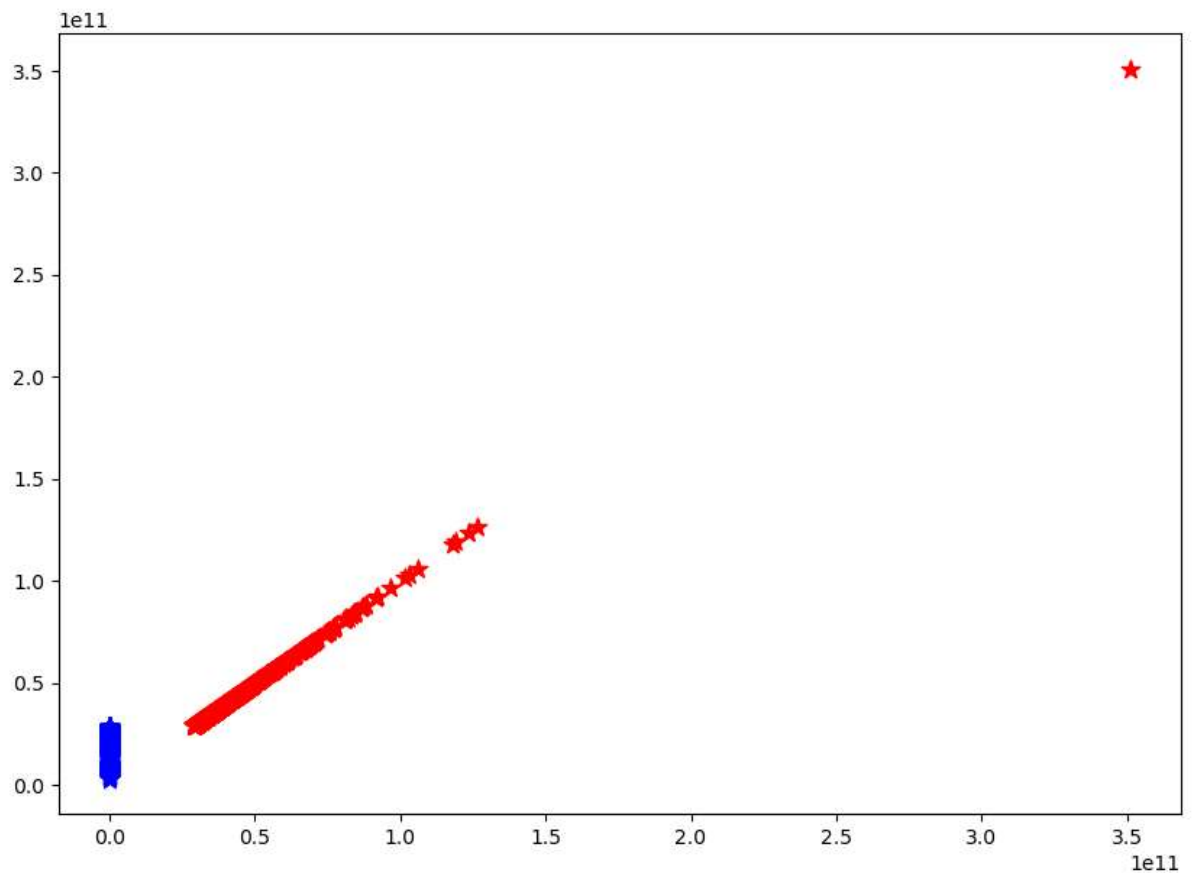
Out[7]: array([1, 1, 1, ..., 1, 1, 1], dtype=int64)

In [8]:
```python
c1=cluster.fit_predict(ds)
from sklearn.metrics import silhouette_score
silhouette_score(ds,c1)
```

C:\Users\kasinathan\anaconda3\ds\lib\site-packages\sklearn\cluster_agglomera
tive.py:983: FutureWarning: Attribute `affinity` was deprecated in version 1.
2 and will be removed in 1.4. Use `metric` instead
  warnings.warn(

Out[8]: 0.545566128650739

In [12]:
```python
x=ds.values
plt.figure(figsize=(10,7))
plt.scatter(x[c1==0,1],x[c1==0,1],c='r',s=90,label="cluster1",marker="*")
plt.scatter(x[c1==1,0],x[c1==1,1],c='b',s=90,label="cluster1",marker="*")
plt.show()
```


In [ ]: