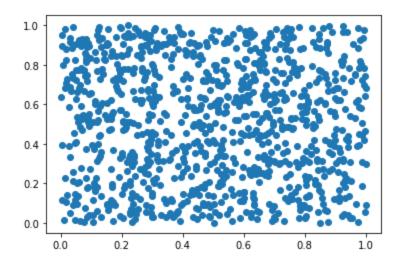
```
In [1]: import numpy as np
import pandas as pd
from sklearn.cluster import KMeans
import seaborn as sns
import matplotlib.pyplot as plt
```

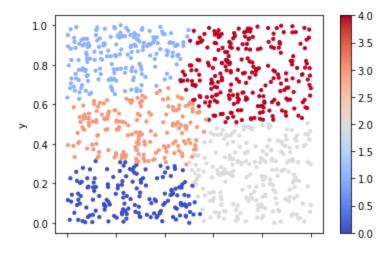
```
In [2]: x=np.random.uniform(0,1,1000)
y=np.random.uniform(0,1,1000)
df=pd.DataFrame(columns=["x","y"])
df.x=x
df.y=y
plt.scatter(x,y)
```

Out[2]: <matplotlib.collections.PathCollection at 0x223d8cdef40>



```
In [3]: model=KMeans(n_clusters=5).fit(df)
df.plot(x='x',y='y',c=model.labels_,s=10,kind='scatter',cmap=plt.cm.coolwarm)
```

Out[3]: <matplotlib.axes.\_subplots.AxesSubplot at 0x223d8ddad30>



Out[4]: array([4, 4, 4, 3, 4, 0, 0, 2, 4, 1, 1, 2, 3, 2, 4, 1, 2, 1, 3, 0, 2, 2, 3, 1, 2, 3, 3, 2, 4, 2, 0, 4, 4, 2, 2, 2, 2, 2, 2, 4, 2, 4, 4, 4, 2, 3, 3, 4, 4, 2, 0, 0, 0, 3, 1, 4, 1, 3, 3, 1, 3, 2, 2, 2, 4, 4, 2, 4, 2, 0, 3, 0, 0, 2, 1, 4, 4, 2, 0, 0, 0, 3, 3, 2, 2, 2, 0, 1, 2, 3, 4, 4, 3, 4, 2, 1, 1, 2, 0, 4, 4, 0, 3, 4, 0, 3, 0, 4, 0, 2, 0, 4, 0, 0, 1, 0, 2, 1, 4, 1, 1, 0, 4, 3, 2, 2, 2, 4, 1, 0, 2, 4, 4, 2, 1, 4, 1, 3, 1, 3, 0, 3, 1, 2, 0, 2, 4, 3, 1, 1, 2, 2, 4, 2, 0, 2, 1, 2, 0, 2, 3, 0, 4, 4, 1, 0, 4, 3, 2, 4, 3, 3, 2, 2, 4, 2, 1, 4, 3, 4, 2, 0, 0, 0, 1, 4, 1, 4, 4, 0, 2, 4, 3, 0, 4, 2, 0, 2, 0, 3, 4, 4, 2, 2, 1, 0, 3, 2, 3, 2, 2, 1, 3, 2, 0, 2, 1, 0, 2, 2, 1, 4, 4, 1, 4, 2, 1, 0, 4, 0, 2, 0, 2, 4, 4, 0, 4, 4, 3, 3, 1, 0, 4, 0, 4, 2, 4, 2, 2, 1, 4, 3, 3, 4, 0, 2, 4, 2, 3, 3, 3, 0, 0, 3, 2, 1, 1, 2, 2, 4, 3, 0, 2, 0, 1, 3, 1, 3, 4, 1, 3, 3, 2, 1, 3, 3, 0, 4, 4, 1, 1, 2, 1, 1, 4, 0, 4, 2, 2, 2, 1, 1, 3, 2, 1, 0, 1, 2, 4, 4, 4, 3, 0, 3, 1, 3, 4, 0, 0, 1, 0, 2, 2, 2, 3, 0, 3, 0, 4, 2, 1, 4, 2, 3, 1, 2, 1, 4, 4, 2, 0, 2, 2, 2, 2, 3, 3, 4, 1, 0, 3, 1, 2, 4, 1, 2, 1, 1, 4, 0, 1, 1, 4, 1, 1, 1, 4, 4, 0, 2, 0, 4, 2, 0, 1, 1, 1, 4, 2, 4, 4, 2, 4, 2, 4, 3, 0, 4, 2, 4, 4, 3, 4, 4, 1, 4, 1, 3, 1, 0, 4, 3, 4, 1, 3, 4, 3, 4, 4, 4, 2, 4, 0, 3, 2, 0, 2, 3. 2, 4, 3, 3, 4, 3, 2, 2, 4, 4, 0, 0, 4, 2, 4, 4, 4, 1, 0, 3, 2, 2, 3, 3, 3, 3, 2, 4, 3, 2, 3, 2, 3, 4, 3, 3, 2, 2, 3, 3, 3, 1, 1, 2, 4, 0, 2, 0, 3, 4, 4, 3, 2, 3, 3, 3, 1, 4, 1, 3, 1, 2, 2, 3, 4, 0, 1, 1, 3, 0, 4, 2, 4, 3, 2, 1, 2, 3, 1, 1, 4, 4, 4, 1, 2, 2, 4, 4, 2, 4, 3, 1, 2, 3, 3, 4, 2, 3, 4, 3, 2, 3, 1, 3, 3, 1, 2, 4, 2, 2, 0, 1, 3, 3, 2, 2, 2, 0, 4, 4, 0, 2, 4, 1, 0, 4, 4, 0, 2, 2, 4, 2, 3, 1, 2, 0, 0, 4, 0, 1, 2, 0, 3, 1, 3, 1, 4, 2, 2, 0, 4, 4, 3, 4, 0, 3, 4, 4, 2, 3, 3, 4, 3, 4, 3, 2, 4, 4, 3, 3, 4, 2, 4, 4, 0, 2, 2, 2, 4, 4, 3, 2, 2, 3, 2, 2, 0, 1, 1, 4, 3, 4, 4, 4, 0, 4, 4, 1, 0, 3, 0, 2, 3, 1, 4, 3, 2, 2, 2, 2, 0, 4, 4, 2, 0, 3, 0, 4, 2, 4, 4, 1, 1, 0, 3, 3, 0, 4, 1, 4, 4, 1, 0, 1, 2, 0, 4, 2, 0, 4, 1, 3, 0, 0, 4, 1, 2, 3, 2, 4, 4, 2, 0, 2, 4, 2, 0, 1, 4, 2, 1, 4, 4, 4, 0, 2, 0, 3, 4, 0, 1, 1, 0, 3, 4, 1, 2, 3, 1, 4, 0, 4, 3, 2, 2, 3, 3, 4, 2, 1, 4, 4, 1, 1, 0, 4, 4, 1, 4, 1, 2, 1, 2, 1, 0, 2, 1, 1, 1, 1, 0, 4, 2, 3, 0, 0, 3, 3, 0, 1, 3, 2, 1, 3, 2, 3, 0, 2, 2, 2, 2, 3, 1, 4, 2, 1, 1, 4, 4, 1, 1, 4, 3, 2, 1, 4, 0, 3, 0, 0, 0, 3, 4, 3, 4, 2, 3, 3, 4, 3, 1, 4, 4, 1, 2, 3, 1, 2, 1, 2, 3, 4, 1, 4, 4, 1, 4, 0, 2, 2, 4, 1, 1, 4, 2, 1, 2, 1, 4, 4, 2, 1, 1, 3, 4, 4, 2, 4, 3, 4, 4, 3, 0, 3, 4, 3, 4, 4, 4, 3, 2, 4, 0, 0, 2, 3, 3, 2, 1, 2, 4, 4, 2, 3, 3, 2, 2, 1, 1, 0, 1, 1, 3, 4, 2, 3, 1, 2, 3, 2, 2, 2, 2, 0, 2, 3, 3, 3, 1, 0, 4, 4, 1, 4, 0, 0, 4, 3, 4, 4, 0, 1, 4, 2, 4, 1, 0, 1, 4, 4, 0, 0, 3, 4, 4, 4, 4, 0, 4, 4, 0, 4, 2, 4, 1, 3, 2, 0, 1, 2, 0, 1, 1, 2, 4, 4, 4, 0, 1, 1, 4, 3, 0, 0, 2, 3, 3, 0, 1, 2, 3, 3, 1, 2, 3, 4, 0, 1, 2, 1, 1, 4, 0, 0, 0, 2, 1, 4, 1, 1, 1, 0, 2, 2, 4, 1, 1, 1, 1, 3, 1, 1, 2, 3, 3, 2, 4, 1, 4, 1, 0, 3, 1, 4, 4, 1, 1, 1, 3, 2, 1, 2, 2, 4, 3, 2, 3, 2,

0, 1, 1, 0, 0, 1, 2, 0, 2, 0])