In [1]:
```
import os
```

In [3]:
```
# Set the environment variable to avoid memory leak warning
os.environ['OMP_NUM_THREADS'] = '1'
```

In [4]:
```
# Load the dataset
import pandas as pd
```

In [5]:
```
df=pd.read_csv('Mall_Customers.csv')
```

In [6]:
```
#show dataset info
df
```

Out[6]:

	CustomerID	Gender	Age	Annual Income (k$)	Spending Score (1-100)
0	1	Male	19	15	39
1	2	Male	21	15	81
2	3	Female	20	16	6
3	4	Female	23	16	77
4	5	Female	31	17	40
...	...	...	...	...	...
195	196	Female	35	120	79
196	197	Female	45	126	28
197	198	Male	32	126	74
198	199	Male	32	137	18
199	200	Male	30	137	83

200 rows × 5 columns

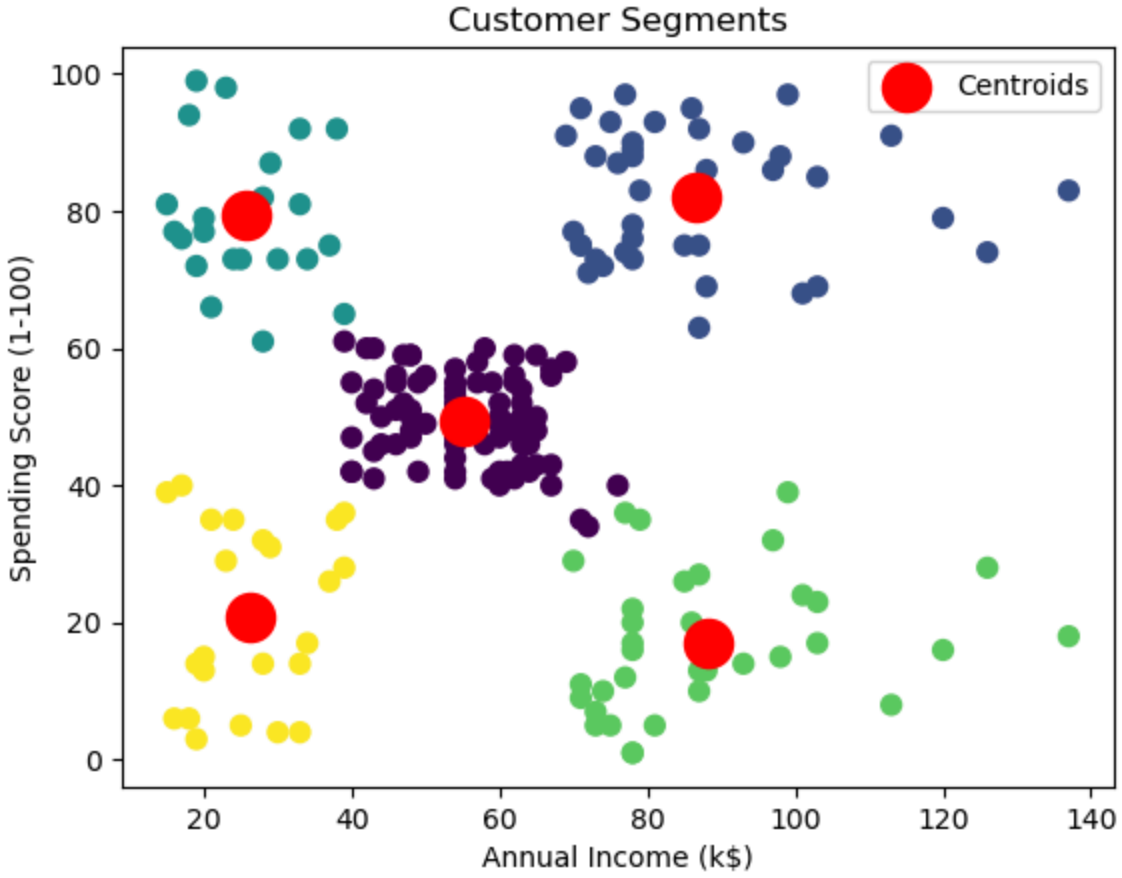
In [7]:
```
# Select relevant features
X = df[['Annual Income (k$)', 'Spending Score (1-100)']]
```

In [8]:
```
from sklearn.cluster import KMeans
```

In [9]:
```
# Apply K-means clustering
kmeans = KMeans(n_clusters=5, init='k-means++', random_state=42, n_init=10)
df['Cluster'] = kmeans.fit_predict(X)
```

In [11]:
```
import matplotlib.pyplot as plt
```

In [12]:
```
# Visualize the clusters
plt.scatter(X.iloc[:, 0], X.iloc[:, 1], c=df['Cluster'], cmap='viridis', s=50)
plt.scatter(kmeans.cluster_centers_[:, 0], kmeans.cluster_centers_[:, 1], s=300, c='red', label='Centroids')
plt.xlabel('Annual Income (k$)')
plt.ylabel('Spending Score (1-100)')
plt.title('Customer Segments')
plt.legend()
plt.show()
```



In [ ]: