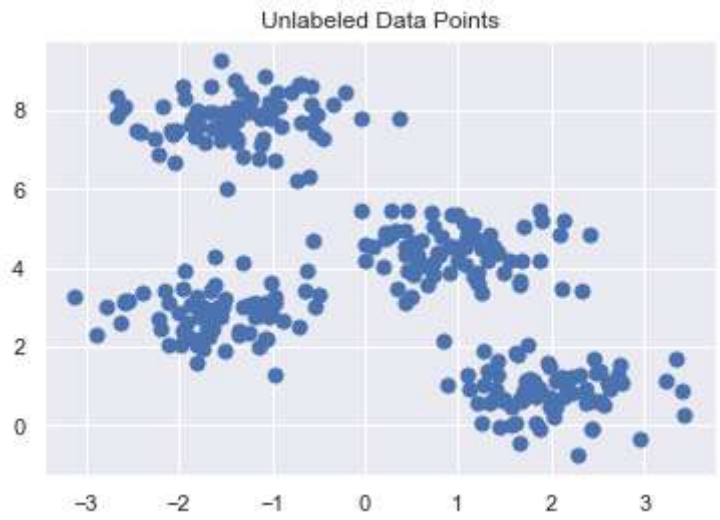
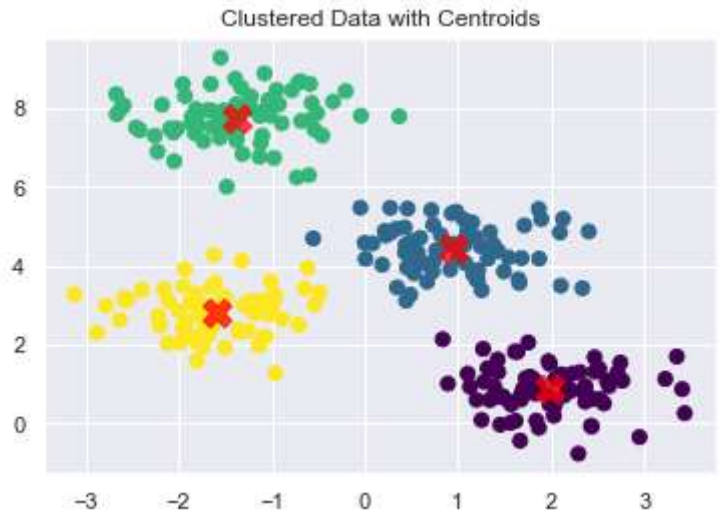
In [1]:
```
# Step 1: Import necessary libraries
import matplotlib.pyplot as plt
from sklearn.datasets import make_blobs
from sklearn.cluster import KMeans
import seaborn as sns

# Optional: For better plotting style
sns.set()

# Step 2: Generate synthetic data
X, y_true = make_blobs(n_samples=300, centers=4, cluster_std=0.60, random_state=0

# Step 3: Visualize the data
plt.scatter(X[:, 0], X[:, 1], s=50)
plt.title("Unlabeled Data Points")
plt.show()

# Step 4: Apply KMeans clustering
kmeans = KMeans(n_clusters=4, random_state=0)
kmeans.fit(X)

# Step 5: Get the predicted clusters and centroids
y_kmeans = kmeans.predict(X)
centers = kmeans.cluster_centers_

# Step 6: Visualize the clustered data
plt.scatter(X[:, 0], X[:, 1], c=y_kmeans, s=50, cmap='viridis')
plt.scatter(centers[:, 0], centers[:, 1], c='red', s=200, alpha=0.75, marker='X')
plt.title("Clustered Data with Centroids")
plt.show()
```





In [ ]: