

K-Means Clustering

- **Centroid Initialization:**
Randomly initialize k centroids from the n data points.
- **Point Assignment:**
Assign each data point to the nearest centroid based on the chosen distance metric (e.g., Euclidean distance).
- **Centroid Update:**
Update the position of each centroid by calculating the mean of the points assigned to its respective cluster.
- **Iteration:**
Repeat the process until convergence is achieved, or the target condition (e.g., minimal change in centroid positions) is met.