K-Medoids

- k-medoids attempts to minimize the sum of dissimilarities between objects labeled to be in a cluster and one of the objects designated as the representative of that cluster. These representatives are called medoids.

- In K-Means algorithm the centroids are central or average of all the points in a cluster that might not be a point in the data points. In K-Medoids chooses data points as medoids. We use dissimilarity Partitioning Around Medoids algorithm.

K-Medoids

- **Steps:**

1. Select K points as medoids from the dataset.
2. Assign all the data points to its closest medoid using any distance metric like Minkowski distance.
3. For each medoid j and each data point i associated with j, swap j and i and compute the total cost of the configuration (which is, the average dissimilarity of i to all the data points associated to j). Select the medoid j with the lowest cost of the configuration. Iterate between steps 2 and 3 until there is no change in the assignments.