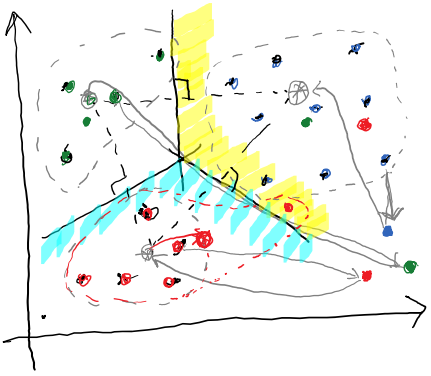
K-Means Clustering → Unsupervised → Automatically divides the data into clusters.

→ Not necessary for user to tell how to create the groups

→ Kmeans → The elements inside the cluster are similar to each other

→ They are very different from those outside

K → No of clusters ⇒ K↑ → Accuracy increases → optimum
K↓ → Accuracy decreases



Voroni diagram

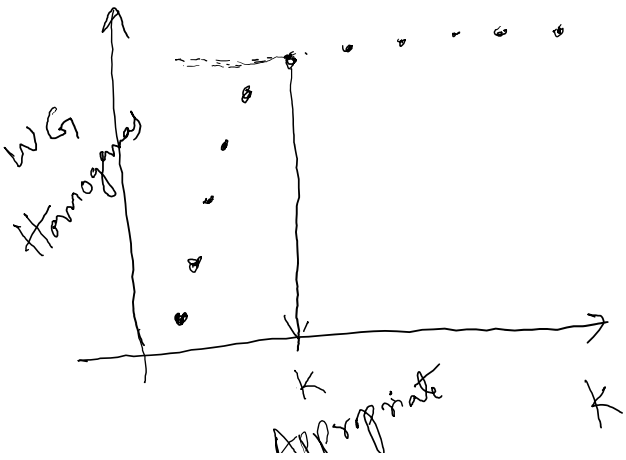
→ Euclidean distance

① K=3 → Randomly selects 3 centroids.

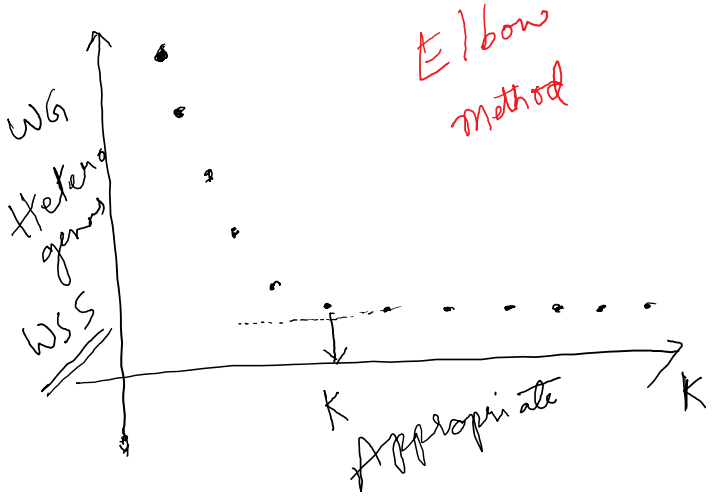
→ Choosing appropriate no of clusters.

→ Takes the change in WSS for computation

(Objective is to Reduce within group Variance)



Elbow method



K Appropriate K Appropriate

Image Reduction example → Shown in R