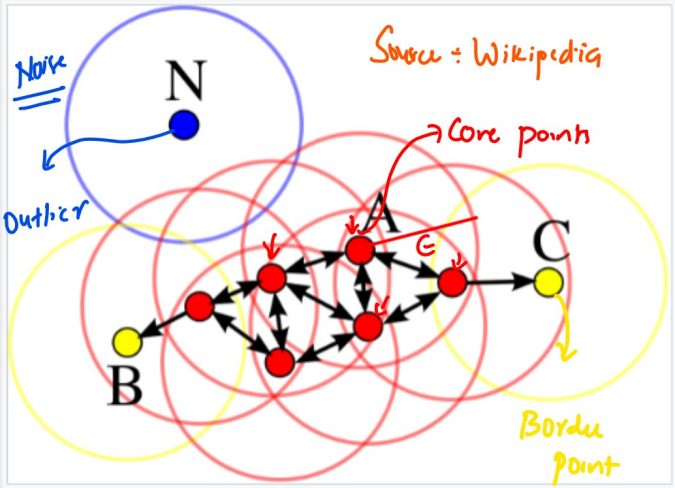
DBSCAN Clustering.



In this diagram, minPts = 4. Point A and the other red points are core points, because the area surrounding these points in an ε radius contain at least 4 points (including the point itself). Because they are all reachable from one another, they form a single cluster. Points B and C are not core points, but are reachable from A (via other core points) and thus belong to the cluster as well. Point N is a noise point that is neither a core point nor directly-reachable.

- Core point
- border point
- Outlier

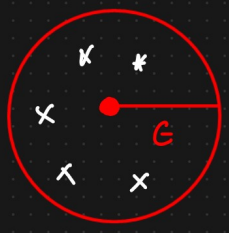
} Non linear Clustering

minpts = 4 ϵ = radius

Core point

minpts = 4

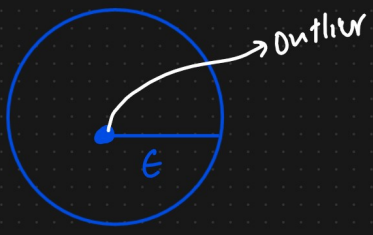
① No. of points within the ϵ should be greater ≥ 4



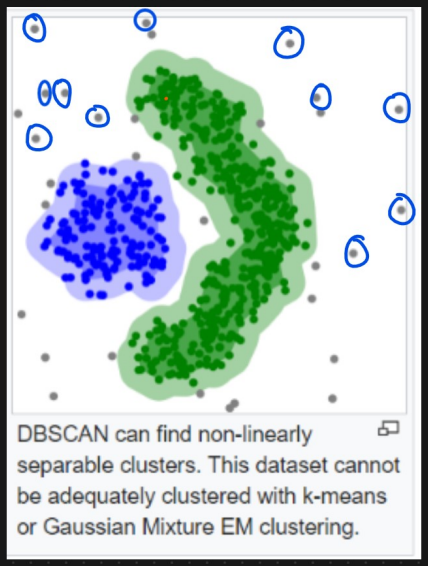
Border point

no. of data points within this radius will be less than minpts

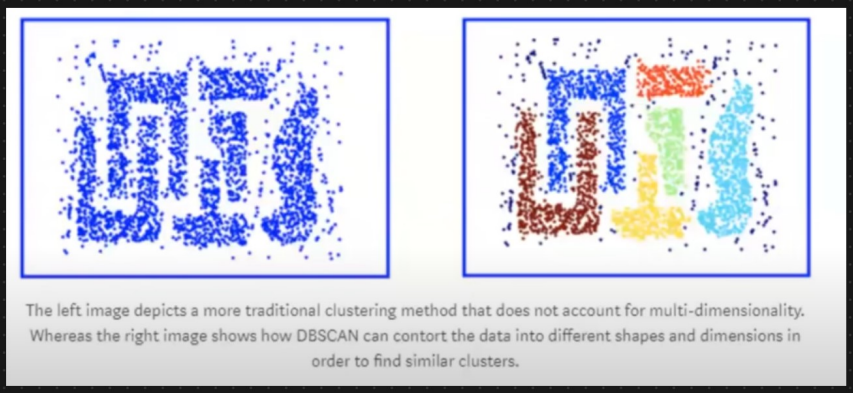
Outlier (Noise)



Some Examples after we apply DBScan Clustering



DBSCAN can find non-linearly separable clusters. This dataset cannot be adequately clustered with k-means or Gaussian Mixture EM clustering.



The left image depicts a more traditional clustering method that does not account for multi-dimensionality. Whereas the right image shows how DBSCAN can contort the data into different shapes and dimensions in order to find similar clusters.