MACHINE LEARNING

12. Is K sensitive to outliers?

Ans:- The K-means clustering algorithm is sensitive to outliers, because a mean is easily influenced by extreme values. K-medoids clustering is a variant of K-means that is more robust to noises and outliers.

The algorithm aims to minimize the squared Euclidean distances between the observation and the centroid of cluster to which it belongs. But sometime K-Means algorithm does not give best results. It is sensitive to outliers. An outlier is a point which is different from the rest of data points.

13. Why is K means better?

Ans:- Guarantees convergence. Can warm-start the positions of centroids. Easily adapts to new examples. Generalizes to clusters of different shapes and sizes, such as elliptical clusters.

K means is simple to implement and Easily adapts to new examples. Generalizes to clusters of different shapes and sizes, such as elliptical clusters. We can Scales to large data sets.

14. Is K means a deterministic algorithm ?

Ans:- Drawbacks of K-Means is its non-deterministic nature. K-Means starts with a random set of data points as initial centroids. This random selection influences the quality of the resulting clusters.

We can propose an improved, density based version of K-Means, which involves a novel and systematic method for selecting initial centroids.