Algorithmic Steps of K-Means

1. First, Pick k points as the starting centroids. These are randomly selected from the dataset.
2. Find Euclidean distance of each point from each of the selected centroids.
3. Assign each individual data point to the centroid that has the minimum distance from the data point.
4. Calculate new centroids by finding the average of each of the k-clusterings and replace the previous centroids with these centroids
5. Check to see if the centroids changed after this iteration or if the specified max number of iterations has been reached. If they did not change, the optimal solution has already been achieved and the outer loop should be broken. If any centroids did change and the max number of iterations has not been reached, continue to iterate.
6. Repeat 2 through 4 until one of the exit conditions is achieved and the function terminates.