Implement k means algorithm on the criminal data collected in various US states. The data contains crimes committed like: assault, murder, and rape in arrests per 100,000 residents in each of the 50 US states in 1973.

1. Analyzing the data in various ways
2. Create and analyze the elbow curve.
3. Find the optimal number of clusters.
4. Minimizing the within-cluster Sum of Squared Errors (SSE), which is also called cluster inertia.

{**Hint:**

wcss.append (kmeans.inertia\_ )

As we used “kmeans.cluster\_centers\_” and “kmeans.labels\_” to get centroids values and labels respectively. Similarly use kmeans.inertia\_ to get the WCSS values for different K values.

}

1. Implement K means algorithm.