Ex-1 Visualization of K Means clustering

Use the iris data, use cluster the data using K means algorithm and visualize the results using ggplot2, factoextra, gridExtra package to do the following:

1. Load the iris dataset and view the data.

2. Display the Statistical Summary of the dataset

3. Apply the preprocessing to remove the class attribute eg., Species , since #clustering is a type of unsupervised learning

4. Create a function to normalize the data before clustering

5. Apply k-means clustering algorithm with k = 3

6. Find the number of records in each cluster

7. Display the cluster center data point values

8. Display the cluster vector showing the cluster where each record falls

9. Plot to see how Sepal.Length and Sepal.Width data points have been distributed in clusters

10. Plot to see how Sepal.Length and Sepal.Width data points have been distributed originally as per "class" attribute in dataset

11.Plot to see how Petal.Length and Petal.Width data points have been distributed in clusters

12.Plot to see how Petal.Length and Petal.Width data points have been distributed originally as per "class" attribute in dataset

13. Install the package ggplot2 and import it.

14. Plot the clusterresults using ggplot

15. Display the clustering results with all parameters

16. Display the results in table

17. Display the K Means Algorithm with Animation and visualize the changes in the cluster center

18. Import factoextra package and visualize the cluster result

19. Explore the cluster analysis result with various value of k like 2,3,4,5