

k- means cluster

1) Aim: To implement and design kmeans cluster algorithm using weka.

Algorithm:

- Determine root node
- Calculate entropy for classes
- Calculate entropy after split for each attributes.
- Calculate information gain
- Perform split
- Perform further split
- Compute kmeans cluster algorithm

Output:

The screenshot displays the Weka Explorer interface with the 'Cluster' tab selected. The 'SimpleKMeans' algorithm is chosen, and the 'Use training set' option is selected under 'Cluster mode'. The 'Result list' on the left shows '20:40:15 - SimpleKMeans' as the active result. The main window displays the following output:

Cluster output
Within cluster sum of squared errors: 62.1436882815797
Initial starting points (random):
Cluster 0: 6.1,2.9,4.7,1.4,Iris-versicolor
Cluster 1: 6.2,2.9,4.3,1.3,Iris-versicolor
Missing values globally replaced with mean/mode

Final cluster centroids:

Attribute	Full Data (150.0)	Cluster# 0 (100.0)	1 (50.0)
sepal.length	5.8433	6.262	5.006
sepal.width	3.054	2.872	3.418
petal.length	3.7587	4.906	1.464
petal.width	1.1987	1.676	0.244
class	Iris-setosa Iris-versicolor Iris-setosa		

Time taken to build model (full training data) : 0 seconds

=== Model and evaluation on training set ===

Clustered Instances

Cluster	Count	Percentage
0	100	(67%)
1	50	(33%)

The bottom of the window shows the status 'OK' and a 'Log' button. The taskbar at the bottom indicates the system is running on Windows, with a search bar and various application icons. The system clock shows 20:40 on 05-02-2023, with a temperature of 26°C and weather of 'Partly cloudy'.