Student Name : ..... Roll No.: .....

Experiment No. : ..... Date : 7

Experiment:-6

- **Objective** :- Implementation of kNN algorithm using weka Explorer.

- **Theory** :- KNN algorithm is supervised learning algorithm that uses the idea that similar data point are close together.

- **Dataset** :- Iris dataset-

- **Steps** :-

① Load the data

② Select the IBk algo (Classify → choose → Lazy → IBk)

③ Click the algo name to open the object window editor.

④ Adjust parameters

⑤ Click start to see result.

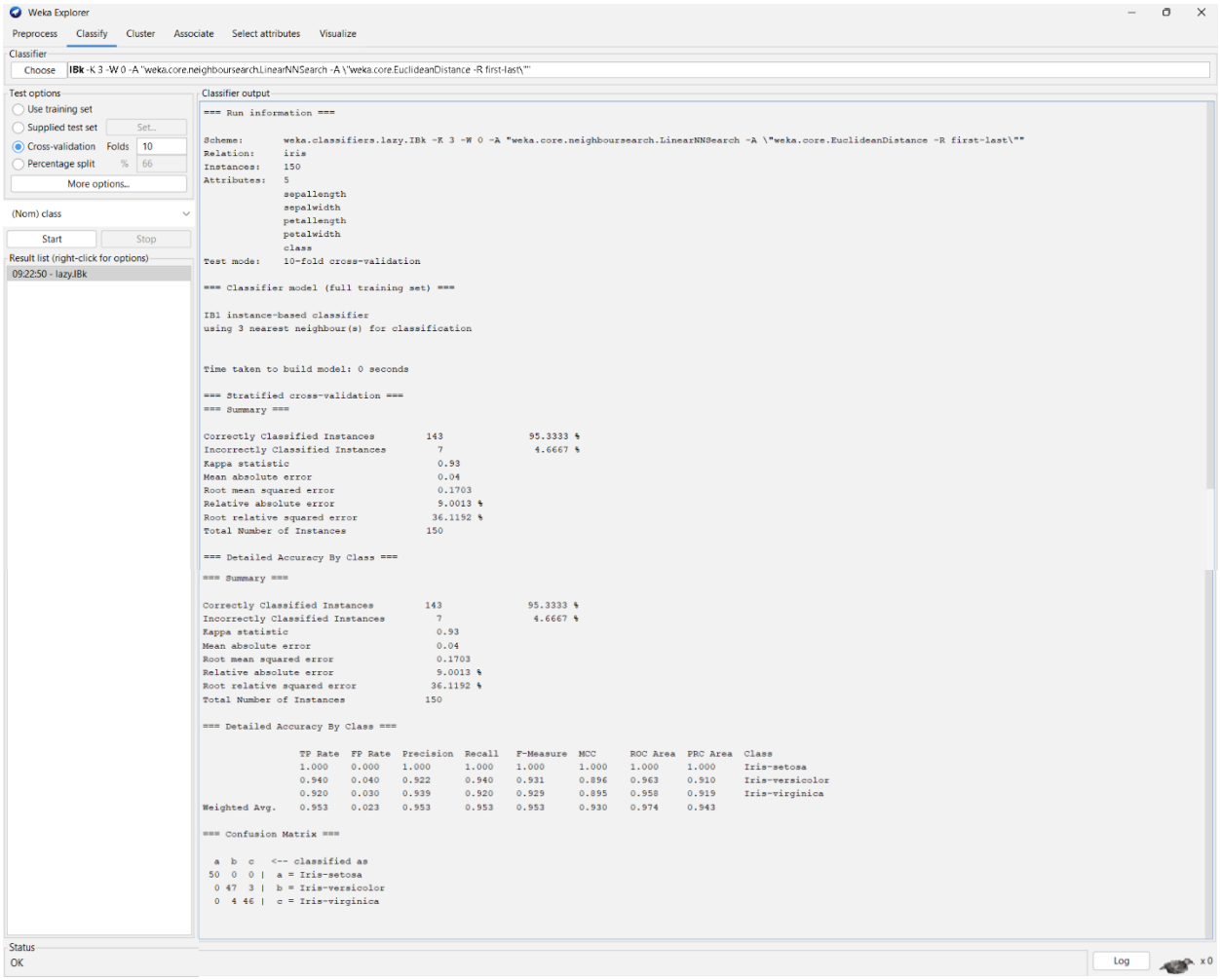
- **Result** :- We have successfully implemented the KNN algo in weka achieving accurate classification result.

Viva-Question :-

Q1. What does k in KNN represent? How does the value of k is selected w.r.t to any dataset?

→ k represent no. of nearest neighbours consider the classification.

EXPERIMENT 6



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Experiment No. : ..... Date : .....

Value of k is typically selected through cross validation, with a common strategy being to choose an old value to avoid ties and test various values to find optimal balance b/w bias and variance.

Q2 Discuss & enlist limitations of KMM implementation using weka explorer

→ Limitations :- (1) Computationally expensive
(2) Sensitive to Irrelevant features.
(3) No model training
(4) Curse of dimensionality.