

Exno:3
study of the classifiers with respect to statistical - parameter.

AIM:-

TO implement various classifier on Iris dataset and analysis the statistical parameter

Pseudocode:-

for knn:-

1. complete the distance x-test, x_i
2. sort all distance in ascending order
3. select first k training points.
4. Count frequency of each label
5. Return the label with highest frequency the predicted class

For LOGISTIC REGRESSION:-

1. compute linear combination (z) : $z = w^T x + b$
2. apply sigmoid function : $\hat{y} = \text{Sigmoid}(z) = 1/(1+e^{-z})$.
3. compute loss.
4. compute Gradients
5. Update parameters.

$$w = w - \alpha * dw$$

$$b = b - \alpha * db$$

FOR NAIVE BAYES:-

Training phase:-

- posterior of target class conditionals with to prior
probability

1. for each class c in all classes:

→ calculate prior probability

$$p(c) = \text{count}(c) / \text{total samples}$$

→ for each feature j :

2. for test point x -test:

$$p(A|B) = \frac{p(B|A) p(A)}{p(B)}$$

OBSERVATION.

① → kNN

Accuracy: 100%

② → logistic Regression

Accuracy: 100%

③ → Naive Bayes

Accuracy: 100%

JUSTIFICATION:-

→ clear data

→ small samples

→ well separated features

→ Balanced classes.

Result:-

Implemented difference classifier same data-set and analysed accuracy rate.