IRIS CLASSIFICATION MODEL

Name: HANASH WANIS A F
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PROJECT TITLE:
Iris Flower Classification using Machine Learning

OBJECTIVE:
To build a machine learning classification model using the Iris dataset and predict the species of flower based on sepal and petal measurements.

DATASET:
Iris Dataset (150 rows, 3 classes)
- Iris-setosa
- Iris-versicolor
- Iris-virginica

Features:
- Sepal Length
- Sepal Width
- Petal Length
- Petal Width

ALGORITHM USED:
(Choose one)
- Decision Tree Classifier
OR
- Logistic Regression

TOOLS / LIBRARIES USED:
- Python
- pandas
- scikit-learn
- matplotlib (optional for visualization)
- seaborn (optional)

MODEL STEPS:
1. Load Iris dataset
2. Clean / preprocess data
3. Split into train & test
4. Train model
5. Predict species
6. Evaluate accuracy

SAMPLE OUTPUT:

```
Dataset Im     :is

    sepal_lengrh   sepal_width  petal_length  petal_width

        5.1  3.5           1.4           0.2          0.2
        4.9  3.0           1.4           0.2          0.2
        4.7  3.2           1.3           0.2          0.2
        4.6  3.1           1.5           0.2          0.2
        5.0  3.6           1.4           0.2          0.2

Dataset Info:
   class 'pancastese.croe, frame.DataFrame'
   150 entries, 5 columns
   Range index: 0 to 149
   sepal_length [a-sleieo ] 106 .) r'sepa-lengtch   float64
   sepal_width  [a-$leieo ] 105 ) (' petal_length   float64
   petal_length [a-sleieo ] 106 .) r'petal_width    float64
   species      [a-sies   ] 100 \;'object          object
Detected summary:
       sepal_length   sepal_width   petal_length
 count    150.00000     150.00000      150.00000
 mean       5.843333      3.054000       3.750667
 std        0.828066      0.433594       1.764420
 min        4.300000      2.000000       1.000000
 25%        5.100000      2.800000       0.300000
 75%        5.800000      3.000000       1.300000
 max        6.400000      3.300000       5.100000
Detected target column: species
Test size: 20% (30 samples)
Train size: 80% (120 samples)
=== Decision Tree Model ===
Accuracy: 1.0
Confusion matrix
     Iris-setosa     Iris-versicolor      Iris-virginica
```

GITHUB LINK:

https://github.com/hanashwanis/TASK-1/tree/9dd30f0dc512d5fe8d999b1ebc859bf90ffd34b9