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Final Project

The code is attached as a separate file.

Report:

In this project, we use three supervised learning classifiers to predict the species of an iris flower, based on the measurements of the sepal and petal. The three classifiers used are:

Logistic Regression
K Nearest Neighbors Classifier
AdaBoostClassifier

In addition to these, an ensemble classifier is developed. This combines the predictions of the three classifiers using majority voting rule.

The accuracy scores are as follows:

Logistic Regression: 97.8%
K Nearest Neighbors Classifier: 95.6%
AdaBoost Classifier: 97.8%
Ensemble: 97.8%

The classification report is:

```
from sklearn.metrics import classification_report
print(classification_report(y_test, y_pred))
```

```
              precision    recall  f1-score   support

           0       1.00      1.00      1.00        15
           1       0.94      1.00      0.97        15
           2       1.00      0.93      0.97        15

    accuracy                           0.98        45
   macro avg       0.98      0.98      0.98        45
weighted avg       0.98      0.98      0.98        45
```

The ensemble performs just as good as the Logistic Regression Classifier and AdaBoost Classifier. However it performs better than the K-Nearest Neighbors Classifier.