**Iris Flower Classification**

**Overview**

This project is focused on classifying iris flowers into three species: Setosa, Versicolor, and Virginica using machine learning techniques. The dataset consists of features such as sepal length, sepal width, petal length, and petal width.

**Features**

* Data preprocessing and cleaning
* Exploratory Data Analysis (EDA)
* Feature engineering
* Machine learning model training and evaluation
* Visualization of results

**Requirements**

Ensure you have the following dependencies installed before running the notebook:

pip install pandas numpy matplotlib seaborn scikit-learn

**Usage**

1. Open the Jupyter Notebook file IrisFlowerClassification.ipynb.
2. Run the cells sequentially to process the dataset, train models, and visualize results.
3. Modify the model parameters as needed to experiment with different results.

**Dataset**

The dataset consists of the following attributes:

* Sepal length
* Sepal width
* Petal length
* Petal width
* Species (target variable)

**Machine Learning Models Used**

* Logistic Regression
* Decision Tree
* Random Forest
* Support Vector Machine (SVM)
* K-Nearest Neighbors (KNN)

**Results**

The model evaluation is based on metrics such as:

* Accuracy Score
* Precision
* Recall
* F1-Score

**Future Improvements**

* Implement deep learning models for better accuracy
* Deploy the model as a web application
* Improve feature selection and engineering