1. **Loading the Iris Dataset**:
   - o [The Iris dataset contains measurements of sepal and petal lengths and widths for three species of iris flowers: Setosa, Versicolor, and Virginica](#)[1].
   - o The dataset is loaded using `sns.load_dataset('iris')` from the seaborn library. It provides quick access to example datasets for documentation and reproducible examples.
   - o The dataset is stored in a pandas DataFrame called `df`.
2. **Data Exploration and Visualization**:
   - o The code visualizes the relationships between sepal length and sepal width, as well as petal length and petal width using scatter plots.
   - o Box plots are created to show the distribution of sepal and petal measurements.
3. **Handling Null Values**:
   - o The code checks for null values in the dataset using `df.isnull().sum()`. Fortunately, the Iris dataset does not contain any missing values.
4. **Label Encoding for Species**:
   - o The species column (containing the flower names) is converted into numerical labels (0, 1, 2) using a custom mapping function (`map_species`).
   - o Setosa is mapped to 0, Versicolor to 1, and Virginica to 2.
5. **Splitting Data and Preprocessing**:
   - o The independent features (sepal and petal measurements) are standardized using `StandardScaler`.
   - o The dataset is split into training and testing sets using `train_test_split`.
6. **Logistic Regression Model**:
   - o A logistic regression model (`lg`) is trained on the training data (`X_train`, `y_train`).
   - o Predictions are made on the testing data (`X_test`), and the results are stored in `pred`.
7. **Evaluation Metrics**:
   - o The code calculates and displays the classification report, accuracy score, and confusion matrix for the model's performance on the test set.