Title: "Unveiling the Global Wildlife Trade

Problem Statement:

The international trade in endangered species is a matter of great concern for biodiversity preservation. This project seeks to utilize the CITES dataset of 2016 and 2017 in order to tackle the following significant challenges:

1. **Common Species Trading:** Explore the extent of export and import activity for iconic and endangered species, such as rhinoceroses, elephants, and other high-profile targets for poaching and trade.

2. **Animal Products Trade:** Determine what percentage of the trade is live species as opposed to animal products, such as ivory, skins, cadavers, and other derivatives. How does this vary across different species and regions?

3. **Conservation Impact Assessment**: Evaluate the impact of CITES regulations and trade restrictions on the conservation of species in different CITES appendices (I, II, III).

By addressing these challenges, our project seeks to contribute to a better understanding of international wildlife trade, its implications for biodiversity conservation, and the effectiveness of CITES regulations. This knowledge can inform conservation efforts and policy-making at both national and international levels.

The steps taken are highlighted below:

Data Preprocessing:

- Clean and preprocess the CITES dataset, handling missing data, and ensuring data consistency.
- Encode categorical variables, and handle numerical data appropriately.

Exploratory Data Analysis (EDA):

- Conduct exploratory data analysis to understand the distribution of trade activities, species, countries involved, and trade types.
- Identify trends and patterns in the data that may be related to the trade of well-known species.

Feature Engineering:

- Create relevant features that can enhance the model's predictive power.

Model Building:

- Choosing a suitable machine learning or statistical model for our analysis.

- Train the model to predict which species are endangered based on the provided data OR
- Train a model that can predict or classify trade activities, such as identifying illegal trade or assessing the impact of CITES regulations.

Model Evaluation:

- Evaluate the model's performance using appropriate metrics.
- Using metrics like accuracy, precision, recall, or F1 score.

Interpretation:

- Interpret the model results to gain insights into the factors influencing trade activities.
- Understand how well-known species and conservation status impact trade.

Aim and Objectives

Aim: To analyze the international wildlife trade data from CITES in 2016-2017 and derive actionable insights that contribute to biodiversity preservation and conservation efforts.

Objectives:

Objective 1: Identify key species, trade routes, and countries involved in the trade.

Objective 2: Map the regions with the highest trade volumes and assess their impact on local ecosystems.

Objective 3: Evaluate the effectiveness of CITES regulations in curbing trade in species listed in different appendices (I, II, III).

Objective 4: Investigate the correlation between the regulatory status of species and their trade activities.

Objective 5: Assess the factors that contribute to high-risk trade and recommend interventions.

Objective 6: Prepare a comprehensive report and presentation summarizing the project's methodology, results, and recommendations.