**Introduction**

**Title**: Advanced Analytics for Predicting Issue Consequences

**Objective**: To investigate a dataset to forecast the “Issue Consequence” variable using the CRISP-DM framework, including Lasso Regression, Logistic Regression, and K-Nearest Neighbors (KNN) models.

**Table of Contents**

1. Introduction and Background

2. Data Understanding

3. Methodology

4. Feature Engineering

5. Exploratory Data Analysis (EDA)

6. Model Implementation

7. Results and Discussion

8. Conclusion and Recommendations

**1. Introduction and Background**

The aim of this analysis is to use various predictive modeling techniques to forecast issue consequences. The CRISP-DM framework guides the methodology, ensuring a structured approach to data mining.

**2. Data Understanding**

The dataset consists of 566,760 observations and 77 variables, including numeric, text, and date variables.

**3. Methodology**

**CRISP-DM Process:**

1. **Business Understanding**

2. **Data Understanding**

3. **Data Preparation**

4. **Modeling**

5. **Evaluation**

6. **Deployment**

**4. Feature Engineering**

Feature engineering involves transforming data to enhance model performance.

**5. Exploratory Data Analysis (EDA)**

Various visualizations and statistical summaries are used to understand the data distribution and relationships.

**6. Model Implementation**

The main modeling techniques used in this analysis are:

1. **Lasso Regression**

2. **Logistic Regression**

3. **K-Nearest Neighbors (KNN)**