Summary Report

Lead Conversion Prediction & Strategy for X Education

1. Objective

X Education receives numerous leads through different marketing channels, but not all convert into enrolled students. The goal of this project was to **analyse historical lead data**, develop a **predictive model**, and create **strategies to optimize lead conversion efforts**.

2. Data Preparation

We worked with a dataset containing **demographic, behavioural, and interaction features**. The key preprocessing steps included:

- **Handling missing values** using imputation and mode filling.

- **Encoding categorical variables** using **One-Hot Encoding and Frequency Encoding**.

- **Feature scaling** with Standard Scaler for numerical variables.

- **Feature selection** using Recursive Feature Elimination (RFE) to retain the most relevant variables.

3. Model Selection & Performance

- We selected **Logistic Regression** for its interpretability and efficiency.

- The model achieved **84% accuracy**, with an **ROC-AUC Score of 0.8849**, demonstrating strong discriminative ability.

- The **confusion matrix** and **classification report** showed a good balance between precision and recall, ensuring an effective lead prioritization approach.

4. Key Findings

The most influential features driving lead conversion were:

1. **Tags (Coefficient: 3.30)** – Tags indicating customer engagement level significantly impact conversion.

2. **Lead Origin_Lead Add Form (2.81)** – Leads generated through direct form submissions have higher conversion chances.

3. **Lead Source_Welingak Website (1.88)** – Leads sourced from Welingak's website are more likely to convert.

These insights suggest **where to focus marketing efforts and how to optimize lead nurturing strategies**.

5. Business Recommendations

1. **Increase Focus on High-Scoring Leads:**

   o   Prioritize direct engagement with leads identified as high probability.

   o   Develop personalized outreach based on behavioral indicators.

2. **Enhance Key Lead Generation Channels:**

   o   Strengthen efforts on the **Lead Add Form and Welingak Website**, as they contribute the most to conversions.

   o   Allocate more budget to these sources for maximum ROI.

3. **Improve Targeted Marketing Based on Tags:**

   o   Create **segmented email campaigns** based on customer tags.

   o   **Automate lead scoring** in the CRM system for proactive lead management.

6. Lead Engagement Strategies

Scenario 1: Aggressive Lead Conversion (Intern Hiring Phase)

- Lower the **lead scoring threshold** to increase the pool of leads contacted.

- **Prioritize phone calls** to maximize direct engagement.

- **Optimize SMS/email** for quick responses and follow-ups.