# Lead Scoring Summary Report

## Introduction

In this case study, we analyze a dataset of leads to optimize the sales funnel and improve lead conversion rates. The goal is to identify high-priority leads, understand the factors influencing conversion, and provide actionable insights to the business team.

## Business Problem

The sales team is overwhelmed with numerous leads, and it is challenging to focus on the most promising ones. The primary objective is to use data to build a model that identifies hot leads, cold leads, and insights into the lead funnel to make sales efforts more efficient.

## Solution Approach

The logistic regression model was developed to predict lead conversion. Key steps include:  
1. Data Cleaning: Missing values were handled, and numerical features were normalized.  
2. Feature Engineering: Categorical variables were encoded using one-hot encoding.  
3. Model Evaluation: Metrics such as accuracy, precision, recall, and F1-score were used to evaluate performance.  
  
The model identifies hot leads with high accuracy, enabling the sales team to prioritize their efforts.

## Key Insights

## Top Predictors:

## Tags (“Will revert after reading the email,” “Closed by Horizzon”). Total Time Spent on Website (high engagement). Lead Source (“Direct Traffic” and “Reference”).

## Lead Segmentation:

## High-Scoring Leads (>80): Immediate follow-up priority. Medium-Scoring Leads (50–80): Targeted nurturing. Low-Scoring Leads (<50): Long-term automated campaigns.

## Recommendations

## For Aggressive Conversion: Focus on high-scoring leads and involve interns for broader reach. Track engagement metrics post-phone calls to ensure success.

## For Relaxed Periods: Restrict calls to high-probability leads (>90%). Use emails/SMS for medium and low-probability leads.

## Continuous Optimization: Periodically retrain the model to adapt to new data. Analyze false positives/negatives for further refinement.

## Conclusion:

## The Logistic Regression model provides actionable insights and a reliable lead scoring mechanism. By integrating the model into CRM tools and following the recommended strategies, X Education can significantly enhance lead conversion rates and optimize sales efforts.