

# Lead Scoring Assignment

Using Logistic Regression to Identify  
Hot Leads

# Problem Statement

- X Education, an online course provider, faces a low lead conversion rate of 30%. The goal is to identify high-potential leads ('Hot Leads') to improve efficiency and focus sales efforts. The task involves building a logistic regression model to assign lead scores.

# Objective

- To assign a lead score (0-100) to each lead based on their likelihood of conversion. High lead scores indicate greater chances of conversion, enabling targeted sales efforts.

# Approach Overview

1. Data Cleaning: Handle missing values and inconsistencies.
2. Exploratory Data Analysis: Understand key features affecting conversion.
3. Feature Engineering: Transform and encode data for modeling.
4. Model Building: Logistic Regression to predict conversion probability.
5. Model Evaluation: Use metrics like AUC-ROC, accuracy, and precision.

# Data Insights

- Dataset contains ~9000 rows with features like:
  - Lead Source
  - Time Spent on Website
  - Total Visits
  - Last Activity
- Target Variable: 'Converted' (1 for converted, 0 for not converted).

# Model Building

## 1. Logistic Regression Model:

- Assigned probabilities of conversion.
- Scaled features and selected relevant predictors.

## 2. Key Features:

- Time Spent on Website
- Lead Source
- Last Activity

## 3. Validation: Split data into training and testing sets.

# Model Evaluation

## 1. Performance Metrics:

- Accuracy: ~85%
- Precision: High for top 20% lead scores.

## 2. Business Impact:

- Focus on leads with scores  $> 70$  to improve conversion rates.

# Business Implications

## 1. Streamlined Sales Efforts:

- Prioritize high-potential leads for follow-up.

## 2. Improved Conversion Rate:

- Allocate resources efficiently to increase revenue.

## 3. Strategic Decision-Making:

- Insights for marketing and lead acquisition strategies.



# Conclusion

- The logistic regression model effectively identifies hot leads, improving efficiency in lead handling. Implementing the lead scoring system will boost the overall conversion rate, aligning with X Education's business goals.