# 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.

## Key Insights

1. Top Features Influencing Conversion:  
 - Total Time Spent on Website: Indicates high lead engagement.  
 - Page Views Per Visit: Reflects the depth of interest in offerings.  
 - Lead Source: Direct Traffic and Organic Search contribute significantly to conversions.

2. Funnel Analysis:  
 - Hot Leads: Leads with high engagement metrics and recent activity.  
 - Cold Leads: Leads with low engagement and long inactivity periods.

3. Segmentation:  
 - Leads are segmented based on activity, source, and engagement to target marketing efforts effectively.

## 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.

## Recommendations

1. Focus on high-scoring leads identified by the model to optimize sales efforts.  
2. Re-engage dormant leads through targeted email campaigns.  
3. Monitor and refine lead source channels to improve their effectiveness.  
4. Periodically retrain the model with updated data for sustained accuracy.

## Next Steps

1. Integrate the model into the CRM system for real-time scoring.  
2. Conduct workshops for the sales team to effectively use lead scores.  
3. Establish feedback loops to continually improve model performance.