

Title: Lead Scoring Case Study

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Problem Statement:

X Education offers online courses to industry professionals but is experiencing poor lead conversion rates. Out of an average of 100 leads per day, only about 30 are converted. The goal is to make the lead conversion process more efficient by identifying 'Hot Leads'—the most potential leads that could improve conversion rates and optimize the sales team's efforts.

Business Objective:

The primary objective is to identify the most promising leads, develop a model that can accurately score leads, and deploy this model for ongoing use.

Solution Methodology:

The methodology involves several steps:

- Data cleaning and manipulation to handle duplicates, missing values, and outliers.
- Exploratory Data Analysis (EDA) to analyze univariate and bivariate statistics and understand the distribution and relationship between variables.
- Model building using logistic regression, a train-test split for validation, and hyperparameter tuning via Grid Search to optimize model performance.
- The final model presented achieved an overall accuracy of 80%.

Key Insights:

- The variables that had the most significant impact on potential buyers were the total time spent on the website, the total number of visits, and certain categories of lead sources and origins.
- The EDA highlighted that metrics like page visits and last recorded activities of leads, such as email interactions, are vital in scoring leads.

Strategic Recommendations:

For periods of aggressive lead conversion, a strategy of high recall should be employed to ensure minimal loss of potential leads.

During times when the focus is on minimizing effort, such as when targets are already met, a high precision strategy should be adopted to reduce unnecessary communication.

Conclusion:

The case study demonstrated a systematic approach to address sales and marketing challenges through data analytics and predictive modeling. The model's ability to identify 'Hot Leads' could significantly enhance the efficiency of the sales funnel.