

Objective:

X Education has appointed you to help them select the most promising leads. Company requires you to build a model wherein you need to assign a lead score to each of the leads such that the customers with higher lead score have a higher conversion chance and the customers with lower lead score have a lower conversion chance.

Below mentioned are the steps to fulfill the objective of this assignment:

Reading and Cleaning the data:

- Read the data and performed the basic checks e.g. info, shape , describe.
- To clean the dataset we removed the redundant data e.g. Prospect ID', 'Lead Number', 'Country', 'I agree to pay the amount through cheque' and 'a free copy of MasteringThe Interview'.
- Dropped the columns having more than 40% of missing values.
- Imputed values for columns having missing values less than 40% where possible and created another category for missing values where imputing missing values with median could lead to misleading results.

EDA:

- A quick EDA was done to check the condition of our data. It was found that a lot of elements in the categorical variables were irrelevant. The numeric values seem good.
- Changed the multcategory labels into dummy variables and binary variables into '0' and '1'.
- Checked the outliers and created bins for them.
- Removed all the redundant and repeated columns.

Data Preparation:

- Split the dataset into train and test dataset and scaled the dataset.
- After this, we plot a heatmap to check the correlations among the variables.

Model Building:

- Created model with rfe count 15.
- Checked the precision and recall with accuracy, sensitivity and specificity for our final model and the tradeoffs.
- We found the score of accuracy and sensitivity from our final test model is in acceptable range. Accuracy 77%, Precision 67% and Recall 84%.

Conclusion:

- Important features responsible for good conversion rate or the ones which contributes more towards the probability of a lead getting converted are :
 - Total Time Spent on Website
 - Lead Origin_Lead Add Form
 - What is your current occupation_Working Professional