

Machine Learning Assignment 2

Customer Response Prediction for Marketing Campaigns

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Assignment: Assignment 2

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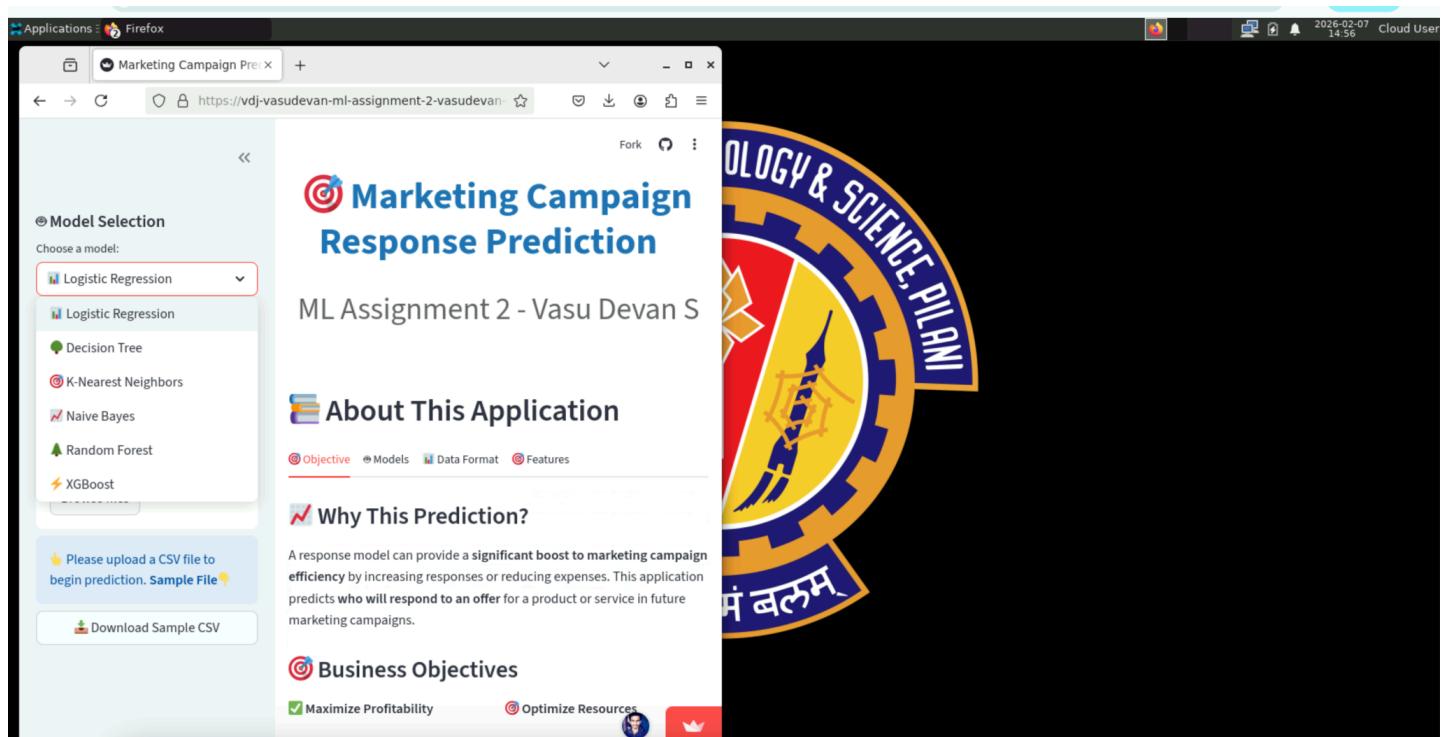
GitHub Repository Link containing

- Complete source code - [ML_Assignment_2_VasuDevan_S](#)
- requirements.txt - [requirements](#)
- A clear README.md - [README file](#)

Live Streamlit App Link

- Deployed using Streamlit Community Cloud - [Live Url](#)

Screenshot



LAB SCREENSHOT

Share

Model Selection

Choose a model:

Logistic Regression

Upload Data

Upload your CSV file

Drag and drop file here
Limit 200MB per file • CSV

Browse files

Please upload a CSV file to begin prediction. [Sample File](#)

Download Sample CSV

Marketing Campaign Response Prediction

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About This Application

Objective Models Data Format Features

Why This Prediction?

A response model can provide a significant boost to marketing campaign efficiency by increasing responses or reducing expenses. This application predicts who will respond to an offer for a product or service in future marketing campaigns.

Business Objectives

Maximize Profitability

- Target the right customers
- Increase response rates

Reduce Costs

- Avoid non-responsive customers
- Optimize marketing budget

Optimize Resources

- Better ROI on campaigns
- Data-driven decisions

Personalize Strategy

- Understand customer behavior
- Tailored marketing approaches

Manage app

The screenshot shows a Streamlit application interface. On the left, there's a sidebar titled "Model Selection" with a dropdown menu set to "Logistic Regression". Below it is an "Upload Data" section with a file input field containing "sample_test (1).csv" (55.1KB), a "Browse files" button, and a note to upload a CSV file for prediction. A "Download Sample CSV" button is also present. The main area has a title "Marketing Campaign Response Prediction" with a subtitle "ML Assignment 2 - Vasu Devan S". It displays a success message "Data loaded successfully! 448 rows x 34 columns". A "View Data Preview" table shows 10 rows of data with columns: Year_Birth, Income, Kidhome, Teenhome, Recency, MntWines, MntFruits, MntMeatProducts, and MntFishProduct. To the right is a "Quick Stats" section. The bottom right corner has a "Manage app" link.

Model Selection

Choose a model:

Logistic Regression

Upload Data

Upload your CSV file

Drag and drop file here
Limit 200MB per file • CSV

Browse files

sample_test (1).csv ×
55.1KB

Please upload a CSV file to begin prediction. [Sample file](#)

Download Sample CSV

Share

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✓ Data loaded successfully! 448 rows x 34 columns

	Year_Birth	Income	Kidhome	Teenhome	Recency	MntWines	MntFruits	MntMeatProducts	MntFishProduct
0	1982	73450	0	0	85	1142	51	415	96
1	1975	80427	0	1	56	1149	71	449	65
2	1965	44393	1	1	86	24	2	20	2
3	1981	24480	1	0	46	4	19	9	28
4	1978	38136	1	0	69	8	15	27	6
5	1984	79607	0	0	37	450	133	951	172
6	1980	80011	0	1	3	421	76	536	82
7	1981	77882	0	0	29	68	129	396	186
8	1958	28087	1	1	77	53	8	17	11
9	1945	113734	0	0	9	6	2	3	1

Quick Stats

Manage app

Model Selection

Choose a model:

Decision Tree

Upload Data

Upload your CSV file

Drag and drop file here
Limit 200MB per file • CSV

Browse files

sample_test (1).csv x

Please upload a CSV file to begin prediction. Sample file!

Download Sample CSV

Step 4: Evaluation Metrics

Accuracy	Precision	Recall	F1 Score	MCC	AUC
0.748	0.275	0.418	0.331	0.190	0.612

Step 5: Confusion Matrix

Confusion Matrix - Decision Tree

		True Label
		Negative (0)
True Label	Negative (0)	
	Positive (1)	307
Negative (0)	74	307

Matrix Breakdown

True Positives	28
True Negatives	307
False Positives	74
False Negatives	74