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**Credit Card Default Prediction**

### Project Objective

This project focuses on predicting credit card default payments using various machine learning algorithms. The dataset contains information about credit card clients in Taiwan from April 2005 to September 2005, and we aim to predict which clients will default on their payments in the following month.

#### Key Features:

- Multiple ML models for comparison
- Real-time predictions on uploaded data
- Model performance visualization
- Download test datasets

### Model Overview

#### Available Models

- Logistic Regression
- Decision Tree

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### Upload your data for prediction

Upload a CSV file with the same structure as the training data:

Choose a CSV file

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

Credit\_card\_teddata.csv 0.7MB 

Uploaded data shape: (6000, 24)

Data processed successfully!

Select Model for Prediction:

Logistic Regression 

Make Predictions 

### Predictions using Logistic Regression

ID	LIMIT_BAL	SEX	EDUCATION	MARRIAGE	AGE	PAY_0	PAY_2	PAY_3	PAY_4	PAY_5	PAY_6	BILL_AMT1	BILL_AMT2	BILL_AMT3	BILL_AMT4	BILL_AMT5	PAY_AMT1	PAY_AMT2	PAY_AMT3	PAY_AMT4	PAY_AMT5	PAY_AMT6	Prediction	Probability_Default	Probability_No_Default			
0	6908	50000	1	2	2	46	-1	-1	-1	0	0	1540	26960	0	2650	3320	2764	26960	0	3472	2320	1764	2941	0	0.1352	0.8648		
1	24576	150000	1	1	3	31	-1	-1	-2	-2	-1	15000	0	0	0	0	11694	0	0	0	0	0	0	11694	30000	0	0.1063	0.8937
2	26767	50000	1	2	2	25	0	0	0	0	0	48065	48355	49109	49549	50479	50702	1800	1844	2200	2000	1800	2038	0	0.1913	0.8087		
3	2157	290000	2	1	2	25	0	0	0	0	0	305823	303701	296184	248801	243983	239925	15000	16950	10000	15000	7844	23333	0	0.1181	0.8819		
4	3180	500000	2	2	1	27	-2	-2	-2	-2	-2	11354	9983	13570	10000	10000	9983	13567	10000	10000	10000	25304	0	0.0203	0.9797			
5	29383	200000	1	1	1	29	1	2	0	0	0	199417	188778	195325	194775	197305	204122	0	8278	4100	180000	203317	0	0	0.2776	0.7224		
6	24405	210000	1	2	2	31	0	0	0	0	0	189650	127111	9326	88223	84175	80305	5000	4200	3100	3000	3100	3000	0	0.117	0.8863		
7	23887	260000	1	3	2	35	0	0	0	0	0	33078	42056	43986	45079	54204	59872	1000	10000	10390	10009	10000	10000	0	0.1218	0.8782		
8	5505	45000	2	1	3	42	-1	-1	-1	-1	-1	72537	0	6281	3446	6157	0	0	6281	3446	6157	0	14380	0	0.0616	0.9384		
9	78971	150000	1	3	1	34	0	0	0	0	0	49376	47478	11419	17418	15815	13113	9300	1100	1500	600	1000	9300	0	0.1608	0.8391		

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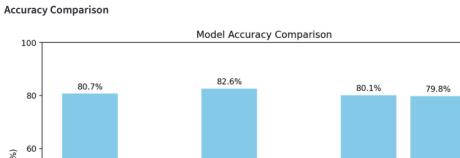
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### Model Evaluation & Comparison

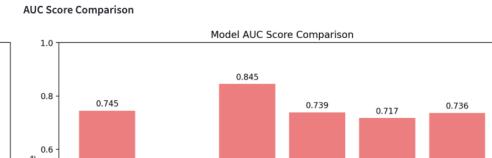
#### Model Performance Comparison

Model	Accuracy	AUC Score	Precision	Recall	F1 Score	MCC Score
0 Logistic Regression	80.72	0.7446	68.99	23.34	34.88	32.11
1 Decision Tree	23.21	0.3579	16.2	59.2	25.43	-29.34
2 K-Nearest Neighbors	82.57	0.6449	72.56	34.11	46.41	41.4
3 Naive Bayes	42.27	0.7385	26.1	87.93	49.26	16.41
4 Random Forest	80.11	0.7173	68.64	18.59	29.26	28.29
5 AdaBoost	79.77	0.7011	72.32	13.63	23.21	25.41

#### Accuracy Comparison



#### AUC Score Comparison



#### Model AUC Score Comparison

