

## **Bank loan classification**

**Objective of this project** : classify whether the personal loan was accepted or not .

Variables used in this analysis:

- ID: ID of the customer
- Age: Age of the customer
- Gender: M for Male, F for Female and O for Others
- Experience: Amount of work experience in years
- Income: Amount of annual income (in thousands)
- Home Ownership: Home Owner, Rent and Home Mortgage.
- Zip Code: Postal code in which the client lives
- Family: Number of family members
- CCAvg: Average monthly spending with the credit card (in thousands)
- Education: Education level (1: bachelor's degree, 2: master's degree, 3: advanced/professional degree)
- Mortgage: Value of home mortgage, if any (in thousands)
- Securities Account: Does the customer have a securities account with the bank?
- CD Account: Does the customer have a certificate of deposit account (CD) with the bank?
- Online: Does the customer use the internet banking facilities?
- CreditCard: Does the customer use a credit card issued by the bank?
- Personal Loan: Did this customer accept the personal loan offered in the last campaign?

**Task** : to build a machine-learning model that can accurately classify whether the personal loan was accepted or not based on the information provided.

## How is this project approached?

The dataset is converted from xlsx to csv for better understanding of data. The data is further cleaned , performed Exploratory Data Analysis(EDA) and Feature Engineering.

Missing values were present in the dataset so it is filled with mean. Some unnecessary columns are dropped from the dataset and after making final clean data , Machine learning models like logistic regression, decision tree , gaussianNB are built from the data. Then those models are saved onto the pickle file so it can be easily loaded and used for prediction.

## Key Findings:

As the education level and income increases, the chance of getting loan approval is very high and those who have lesser income and low education level likely do not have a chance of getting a loan approval.

## Insights:

Likewise the key findings, education level is directly linked with other factors like Securities Account , Credit Account and Credit Card. Increasing rise in education and income can help in accessing credit account,card,securities account and mainly Loan Approval Acceptance.

Thank You.

