

DigiCard by ABC Payments Bank

ABC Payments Bank is a mobile-only bank based out of Bengaluru, India. Their primary business is to give out digital credit cards to eligible users with a credit limit ranging from \$1000 to \$8000 all over the world. These digital credit cards are issued within an hour after filling up a form in the Bank's Mobile App called *DigiCard*.

This product provides a very good revenue to the banks, however, it's a challenging task for them to decide who should they approve for the card and who to reject. You have to help this bank decide how can they confidently take this decision based on the experience they had in the past.

Using the attached dataset which contains historical data about bank's old customers, the problem has two primary goals:

1. Whom to approve or reject for the credit card?
2. How much credit limit to give if approved?

The attached CSV dataset has following columns:

- *user_id*
- *gender*
- *date_of_birth*
- *workclass*
- *education_level*
- *education_num*: education_level as a continuous variable. Eg, Masters(14) > Bachelors(13)
- *marital_status*
- *occupation*
- *relationship*: current relationship status
- *capital_gain*: capital gain made in the last financial year in USD through investments
- *capital_loss*: capital loss in the last financial year in USD through investments
- *Hours_per_week*: Number of hours worked by the person per week.
- ***approved***: Whether customer was approved for the Credit Card.
- *address*
- *Email*

Below data points are retrieved from a credit bureau (eg, CIBIL). A Bureau is a central party which has all the data related to credit history of a customer. Typically, a financial institution (eg, a bank) requests a report from bureau from credit history and score for purposes like a Loan, Credit Card etc.

- *Inquiry_purpose_code*: Purpose of enquiry from the bureau
- *Institute_type*: Type of institute that requested the bureau
- *Account_type*: Type of account of the customer for requesting from the bureau

- *Asset_class_cd*: Current state of the assets of the customer
- *Asset_code*: Type of ownership of the customer
- *Portfolio_type*: Type of portfolio

(Please refer to the data dictionary for the values of the fields for better understanding)

Notes:

1. The problem statement and data set is hypothetical. Feel free to make assumptions about the problem whenever required.
2. You can choose any language or framework. Using jupyter notebooks (or similar) is highly preferred which you can send us over the mail. (both *.ipynb* and *.html* formats)

What are we looking for (but not limited to):

1. Understanding of Data: How well do you understand the problem statement and the data. You can optionally, demonstrate it using data visualization which will also help us to understand your solution better.
2. Code Quality: We expect you to write a readable code as if you were writing this in production.
3. How do you evaluate your model's performance.
4. More than the final result, we want to understand your approach towards solving a machine learning, as well as your understanding of solving a business problem.

Data Dictionary:

- *Inquiry_purpose_code*:

1	Agriculture Loan
2	Auto Loan
3	Business Loan
4	Commercial Vehicle Loans
5	Construction Equipment Loans
6	Consumer Search
7	Credit Card
8	Education Load
9	Leasing
10	Load Against Collateral
11	Microfinance
12	Non-funded credit facility
13	Personal Loan
14	Property Loan

15	Telecom
16	Two/Three wheeler loan
17	Working capital loan
18	Consumer loan
19	Credit Review
99	Others

- *Institute_type*: Code here is only meant to distinguish between institutes.
- *Account_type*:

999	Other
47	Instalment Loan, Automobile
58	Instalment Loan, Mortgage
195	Loan, Property
185	Loan Against Shares/Securities
123	Loan, Personal Cash
189	Loan, Consumer
191	Loan, Gold
130	Loan, Student
187	Loan to Professional
5	Credit Card
219	Leasing, Other
121	Banking, Overdraft
173	Instalment Loan, Two-Wheeler
181	Credit Facility, Non-Funded
184	Loan Against Bank Deposits
214	Credit Card, Fleet
172	Instalment Loan, Commercial Vehicle
217	Service, Telco - Wireless
215	Service, Telco - Broadband
216	Service, Telco - Landline
167	Microfinance, Business
168	Microfinance, Personal
170	Microfinance, Housing
176	Microfinance, Other
177	Business Loan - General
178	Business Loan - Priority Sector - Small Business
179	Business Loan - Priority Sector - Agriculture
197	Business Loan - Priority Sector - Others
198	Non-Funded Credit Facility, General
199	Non-Funded Credit Facility, Priority Sector - Small Business
200	Non-Funded Credit Facility, Priority Sector - Agriculture
175	Non-Funded Credit Facility, Priority Sector - Others
196	Business Loan Against Bank Deposits

220	Loan, Staff
221	Secured Credit Card
222	Used Car Loan
223	Construction Equipment Loan
213	Tractor Loan
224	Corporate Credit Card
225	Kisan Credit Card
226	Loan on Credit Card
227	Pradhan Mantri JDY (Over Draft)
228	Mudra Loan (Shishu/Kishor/Tarun)

- *Asset_class_cd:*

[blank]/-1	Default
S	Standard
B	Substandard
D	Doubtful
L	Loss
M	Special Account
?	Unknown

- *Asset_code:*

1	Individual
2	Joint
19	Authorized User
4	Guarantor
20	Deceased

- *Portfolio_type:*

B	Banking
F	Microfinance
I	Installment Credit
L	Loans
M	Mortgage
R	Revolving Credit
S	Service Credit
X	Leasing