1. Problem Statement

Background:

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TVS Credit is an NBFC with 15+ years of offering best in the class lending services across 10+ categories. A prospective customer can apply for a loan either online by visiting our website/ app (Saathi App) or by visiting a TVS dealership. Improving the loan application process is a dynamic challenge, where we strive to minimize the time spent by the customer on form-fill, and, at the same time, seek to reduce the potential credit risk (risk of not making timely payments on the loan) that a new applicant may carry. With a large number of first time loan applicants and a limited number of fields to pick from, we are presented with the challenge of approving or rejecting a loan application.

Design and implement a chatbot that:

1. Requests applicants for a set of information (demographics, employment, self-reported finances etc.) to be subsequently used in loan approval process
2. Evaluates the application in real time with a background machine-learning model that leverages the gathered information
3. Returns an Approve or Decline—at the end of the session

2. Objectives

a. **Customer Experience -** Offer a customer friendly chatbot that finishes an application in ≤ **X** minutes. (Select your time to completion and justify)
b. **Accuracy –** Achieve above a benchmark level of accuracy on the AUC-ROC
c. **Real-time Decisioning -** Provide an "Approve/Decline" response within ≤ Y seconds after final input.
d. **Repository -** Log every input, answer, feature value and model score

3. Steps

a. Chatbot asks a dynamic sequence of questions
b. With the collected data calls the trained ML model and use its probability output for final approve/decline decisioning
c. Present the decision to the applicant and offer the next steps
d. Ensure security and privacy of users by masking PII data

Note: too many questions may dissuade a customer from filling up the form, choose an optimum number of fields for the ML model.

Policy: Loans are provided to customers aged between 18 – 60.

4. Features

Field	Description
Age	Age at the time of application
Gender	Applicant's gender
State	Location details of the customer
City	
Pincode	
Final_Tier	
Employment_Type	salaried / self-employed / gig / retired
Decision	Approve/ Decline decisioning
Net_Salary	Self-reported income
Loan_Amount	Loan amount taken
LTV	Loan to value ratio
Resident_Type	Applicant's residential information
Product_Code	Type of TW taken
Model_Code	Subcategory of TW
Model_Description	Description of TW vehicle
Model_Variant	Further Details about the vehicle
Qualifications	Applicant's educational qualification
Past_Loans	Whether the applicant has a past loan

5. Model Metrics

a. Separation Metrics

6. Customer Feedback metrics – good to have feature

a. User rating on a scale
b. Collection of Customer Feedback chats