CODECELL - CMPN, VESIT

SYRUS HACKATHON 2025

Category Code: C3

Problem Statement Title: Estimating Loan Approval Probability

Team Name: CodeZilla

Institute Name: Vivekanand Education Society's Institute of Technology

Idea / Approach details (& implemented features)

- This AI system breaks down **loan approval** into logical steps . Specialized sub-agents calculate and estimate **credit score using RAG,** ensuring accurate and fair judgement, followed by a **calculation and visualization of probability of loan acceptance.**

- **How It Works:**

  1. Sub-Agent Processing – Dedicated AI agents calculate the credit score using a vector RAG container.

  2. Data-Driven Calculation – AI calculated probability of loan acceptance.

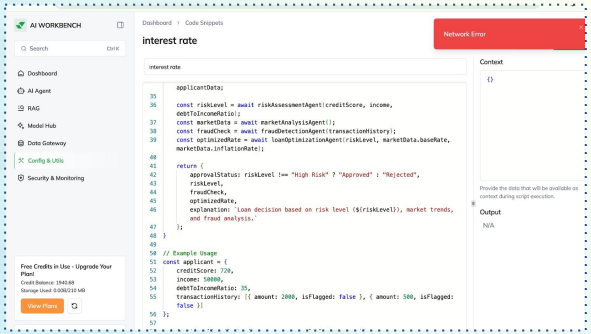
  3. Seamless API Integration – Enables real-time, automated loan estimation using request to models like **OpenAI's 4o, Gemini's 1.5 Flash.**

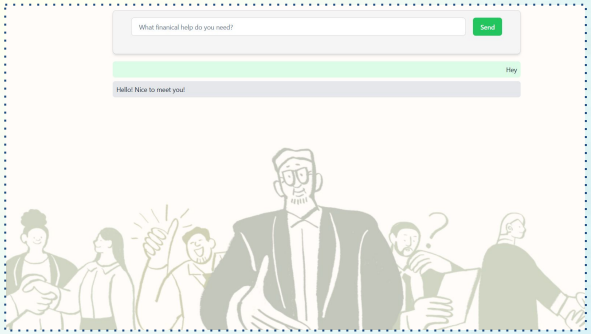
Innovation (Showstopper)

- Our integration with our **Credit Score RAG container** allows us to properly estimate **credit scores** of normal laymen without business knowledge.
- Our custom agentic pipeline is **dynamic** and ready to be implemented with any front end, provided the endpoint is verified.
- The agentic pipeline calculates the data after proper and smooth language processing allowing the user to have a soft and easy experience.

Unsuccessful Attempts

- In our process of finding out the best way to implement a loan approval agent, we came across various blockers and dead ends.
    1. Having an initial idea to implement COT in the agent workflow, we were reaching constant saving and iterating errors while incorporating the pipeline.
    2. Lost in looking for API endpoints for the AI Agent, we ultimately had to scrap the beautiful and intuitive UI we had created for the agent.

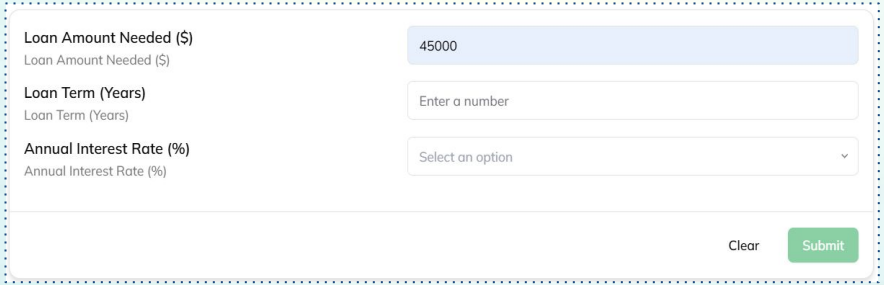




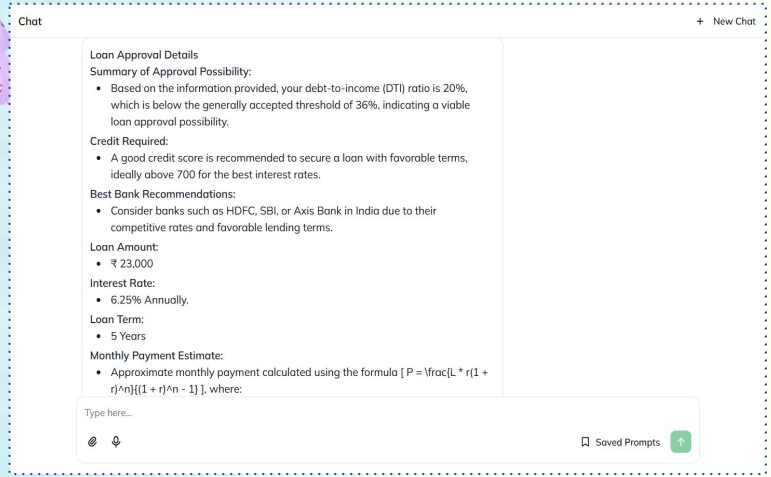
Final Breakthrough

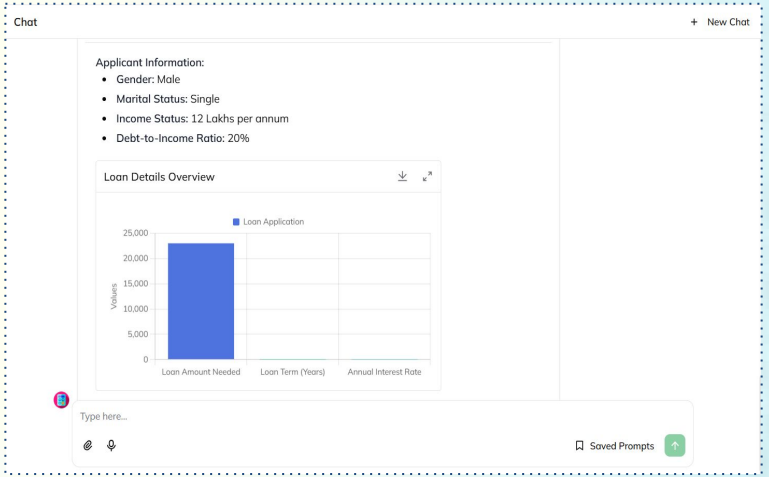
- After getting valuable mentoring and insights from the mentors, we decided to scrap the **COT (Chain-Of-Thought)** implementation and decided to focus only on **loan predictive pipelines.**
- We came across a specific RAG technique for **credit score calculation** and decided to implement it incorporating a smooth and streamlined flow.

  After delving into their documentation, we came across a specific form type called '**Assessments**' and decided to add it completing our idea easily.



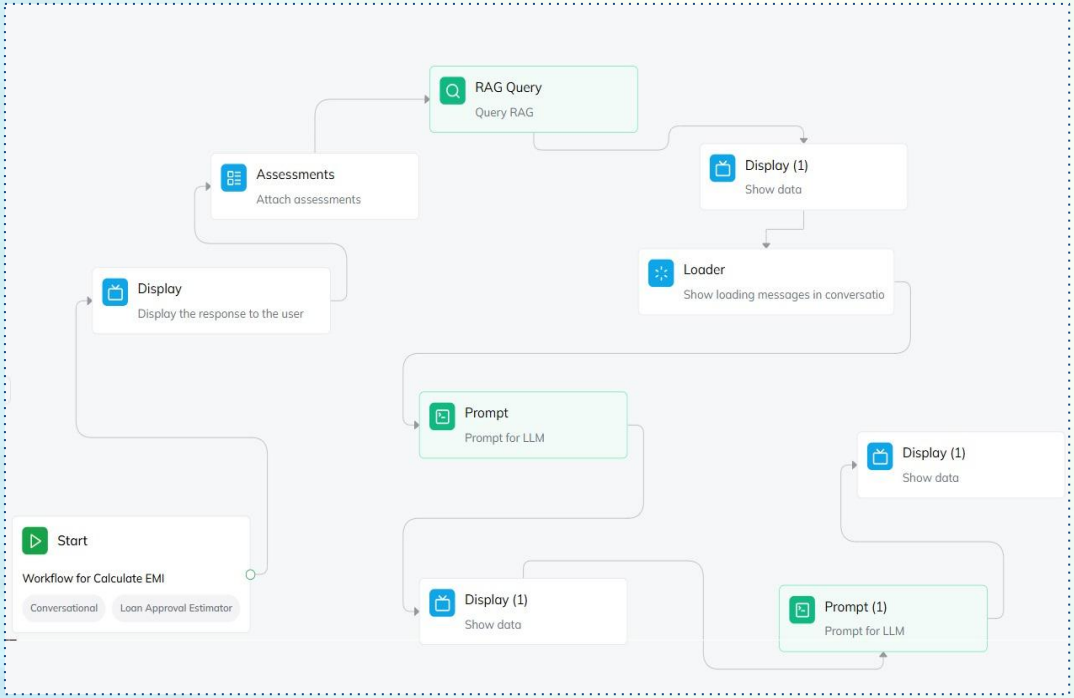
Implementation/Prototype/Use Case Diagram





- The model works and delivers the expected results in a formal yet clear message. The normal users can understand the drawn graphs in the canvas, generated by the **Agentic Pipeline.**

In case of Uptiq category - Your Uptiq Agent



1. **User-Friendly Input** – Users enter financial details intuitively

2. **RAG-Based Credit Scoring** – RAG (Retrieval-Augmented Generation) to compute credit scores.

3. **Loan Approval Probability** – Likelihood of loan approval based on the credit score.

4. **Clear Visualization** – Structured and visually appealing display.

Future Objectives

1.Enhanced AI Decision-Making – Improve accuracy with advanced ML models for risk assessment and fraud detection.

2.Deeper API Integration – Expand compatibility with multiple fintech platforms for seamless automation.

3.Adaptive Learning Mechanism – Implement continuous learning to refine loan approval processes over time.

4.Explainable AI (XAI) Implementation – Ensure transparency by providing clear justifications for approval decisions.

5.Scalability & Global Expansion – Optimize the system for different financial regulations and international markets.

6.User-Centric Enhancements – Improve the custom widget with more interactive and intuitive features.