Category Code: C3

Problem Statement Title: Loan approval classification with a general purpose economic chatbot

Team Name: CodeZilla

Institute Name: Vivekanand Education Society's Institute of Technology

Idea and Implementation

- 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 and technologies used

1. **Credit Score RAG Container**: Accurately estimates credit scores for laymen.

2. **Agentic Pipeline**: Dynamically integrates with any verified front end.

3. **Smooth Language Processing**: Ensures a seamless user experience.

4. **AI Agents**: Collect user input and call 4o and 4o mini.

5. **Uptiq UI Integration**: Generates responses in a user-friendly format.

Chat

Applicant Information:
- Gender: Male
- Marital Status: Single
- Income Status: 12 Lakhs per annum
- Debt-to-Income Ratio: 20%
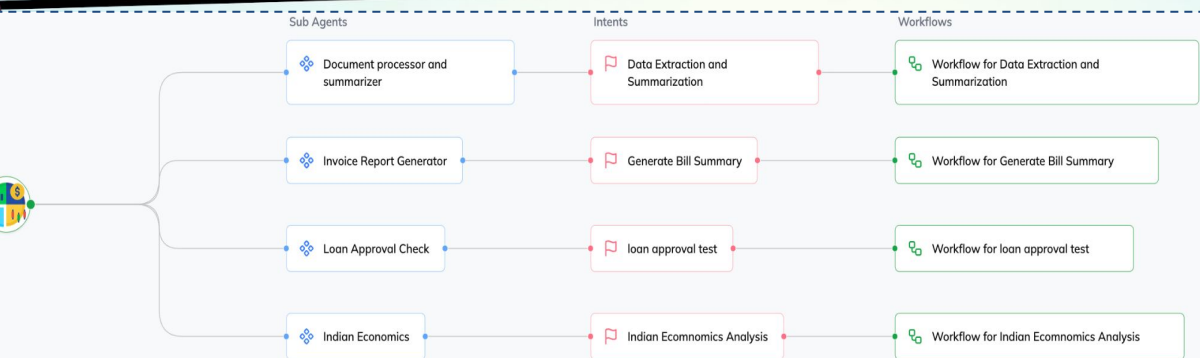
Loan Details Overview

■ Loan Application

Values		
25,000		
20,000		
15,000		
10,000		
5,000		
0		
Loan Amount Needed	Loan Term (Years)	Annual Interest Rate

Type here...
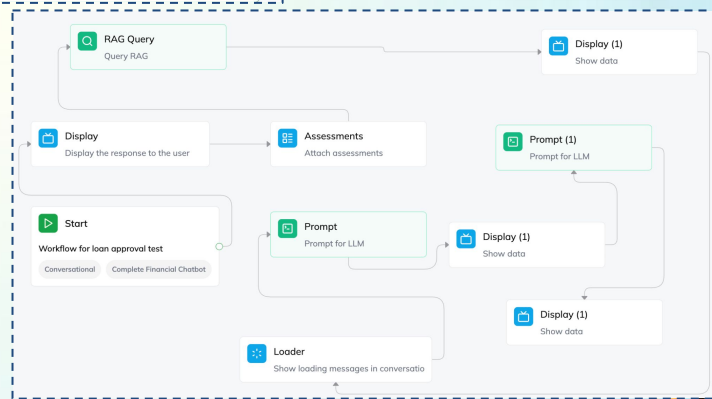
● **Generative Summary**

Our Agent. The Solution.

● Overview of our agent

Data extractor and summarisor

Generative Bill summary

Loan approver

Economic analysis

Sub Agents

- Document processor and summarizer
- Invoice Report Generator
- Loan Approval Check
- Indian Economics

Intents

- Data Extraction and Summarization
- Generate Bill Summary
- loan approval test
- Indian Ecomnomics Analysis

Workflows

- Workflow for Data Extraction and Summarization
- Workflow for Generate Bill Summary
- Workflow for loan approval test
- Workflow for Indian Ecomnomics Analysis
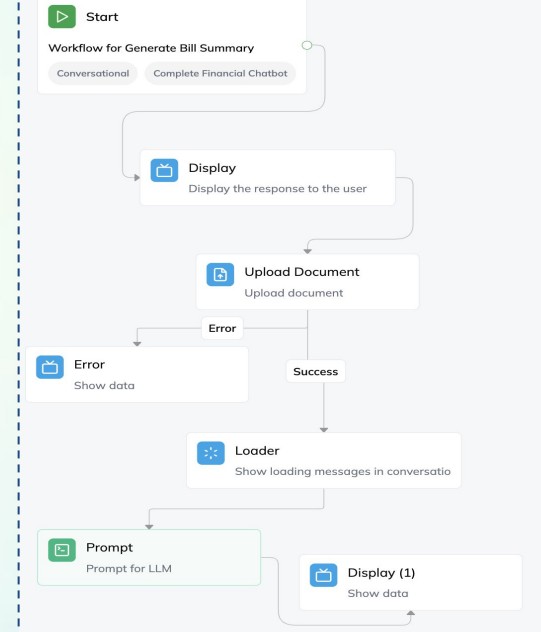
● Loan Approval Agent

The loan approver collects and processes user input into a RAG query. It then forwards the query to an LLM for analysis. The LLM evaluates the data and generates a response for decision-making.

RAG Query
Query RAG

Display (1)
Show data

Display
Display the response to the user

Assessments
Attach assessments

Prompt (1)
Prompt for LLM

Start
Workflow for loan approval test
Conversational   Complete Financial Chatbot

Prompt
Prompt for LLM

Display (1)
Show data

Display (1)
Show data

Loader
Show loading messages in conversatio

External Features and Bloatware
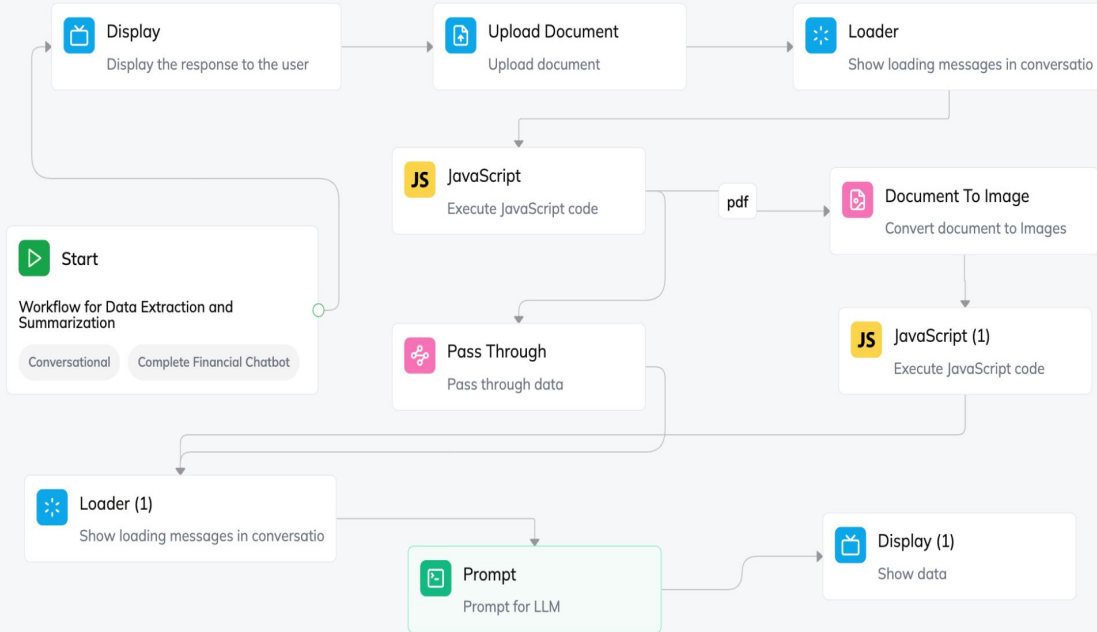
Document Summariser

Invoice generator

The Product.

Delving into loan approvals, we implemented the complete pipeline and successfully created a complete agent.
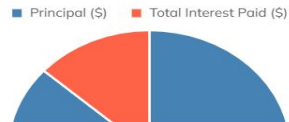
Implementation Demo Link:
https://tinyurl.com/mr3dkvdx

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.