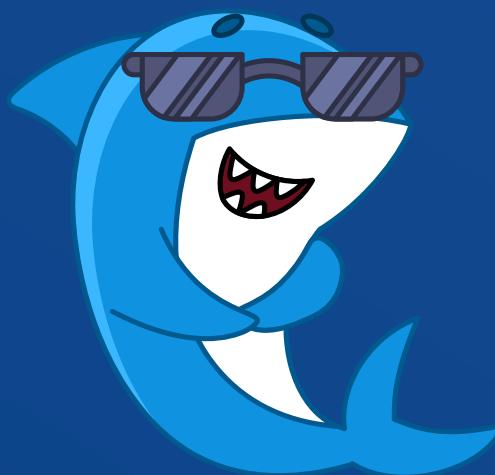




# THE GREAT BENGALURU HACKATHON



TEAM LOAN SHARKS

TRACK 2: Multilingual Conversational Loan Advisor

# PROBLEM STATEMENT

In today's globalized world, accessing loans is challenging for individuals with limited financial literacy or language barriers. Many struggle to understand eligibility, navigate applications, or make informed decisions, creating a gap in financial inclusion. To address this, a **multilingual conversational AI assistant** is needed to simplify the loan process, provide personalized guidance, and offer financial literacy tips in the user's preferred language. Accessible via voice or text, it should support multiple languages, integrate tools for eligibility checks and application guidance, and empower users to make informed financial decisions, regardless of their technical expertise or language proficiency.

# TECH STACK

This tech stack combines **React.js** and **Next.js** for a responsive, multilingual frontend on **WhatsApp** (via Twilio API), supporting text and voice inputs. The backend, powered by **Express.js**, uses **WebSockets** for real-time updates and **Kafka** for async API calls. **DistilBERT** handles NLP intent detection, while **Sarvam.ai** manages translation and speech.

**Firebase** provides encrypted storage, with end-to-end encryption securing messages and information. Financial data access is streamlined via the, ensuring compliance and secure data sharing for loan-related tasks where financial tips are given by financially trained **DistilBERT**.



## FRONTEND



## AI & NLP



## BACKEND



## DATABASE

# KEY FEATURES AND ASPECTS

## Core Features

**Multilingual AI:** Translates queries via Sarvam.ai; responds in user's language.

**Loan Eligibility:** Uses DistilBERT for NLP and rule-based/API assessment.

**Secure Data:** E2EE for messages; encrypted user data storage.

**Real-time Updates:** WebSockets for instant responses.

**Async API Calls:** Kafka ensures smooth processing.

## Financial Data Processing

**Credit Score Estimation:** Computes score if user data isn't available.

**Bank Preferences:** Checks eligibility for a selected or multiple banks.

## Chatbot Workflow

1 User starts chat → Selects language.

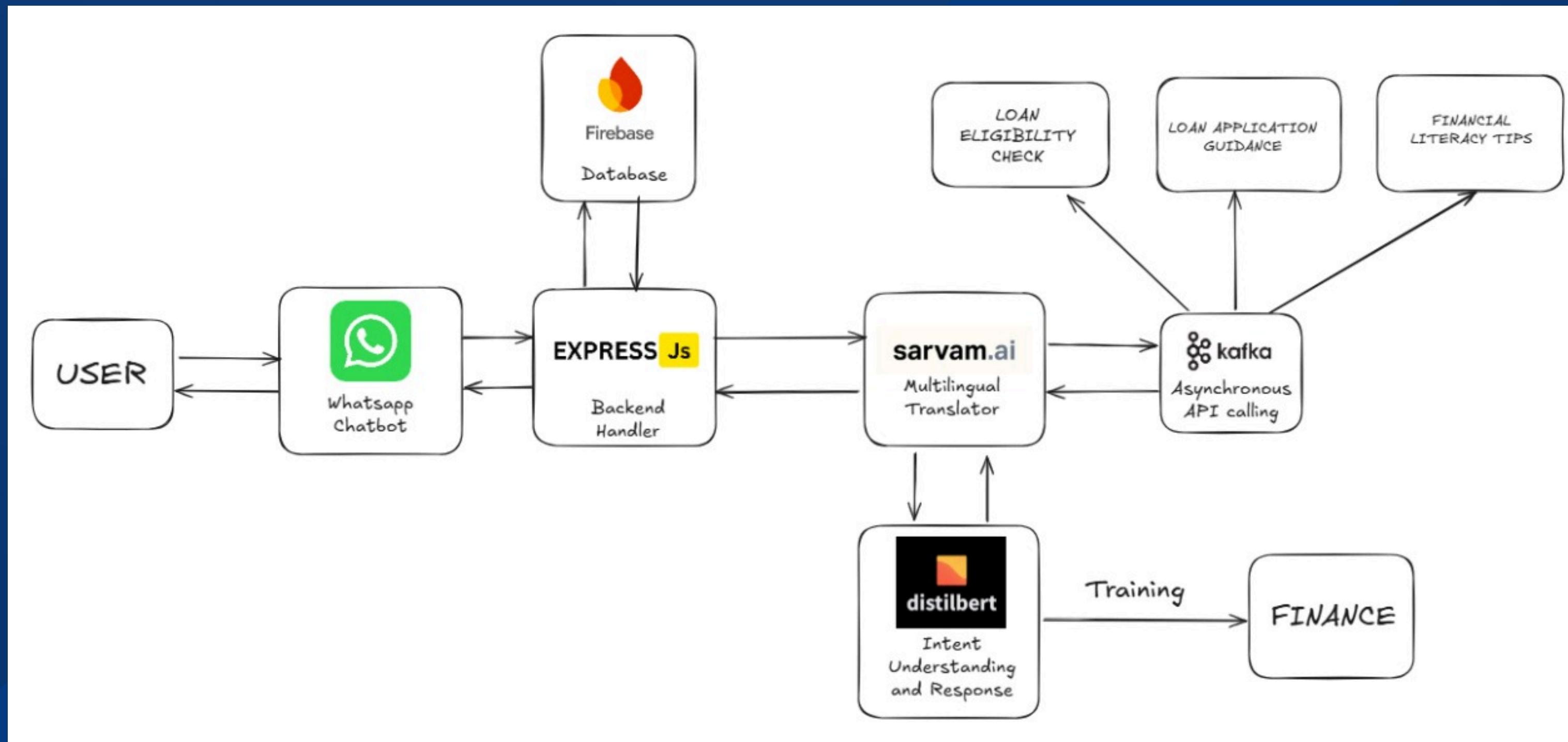
2 NLP extracts intent (eligibility, guidance).

3 Fetches data (input/API/AA).

4 Computes credit score & checks eligibility.

5 Suggests loan options & next steps.

# FLOWCHART



# WHY OUR SOLUTION?

- **Voice & Text Input:** Supports both modes for seamless interaction.
- **WhatsApp-Based:** No need for a separate app, reducing friction.
- **Alternative Credit Assessment:** Uses transaction patterns if no credit score is available.
- **Government & Microfinance Loans:** Recommends subsidy-based and low-interest loans.
- **Personalized Loan Matching:** AI-driven suggestions based on user financial profile.
- **Fraud Prevention:** Verifies user identity and prevents loan scams.
- **Loan Application Assistance:** Guides users through documentation and submission.
- **Financial Literacy Insights:** Provides actionable financial tips alongside loan advice.
- **Scalable & High-Performance:** Kafka-based async processing for multiple requests.
- **Bank API Integration:** Connects with multiple banks to compare loan offers.

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# THANK YOU

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