

AI AGENT HACKATHON

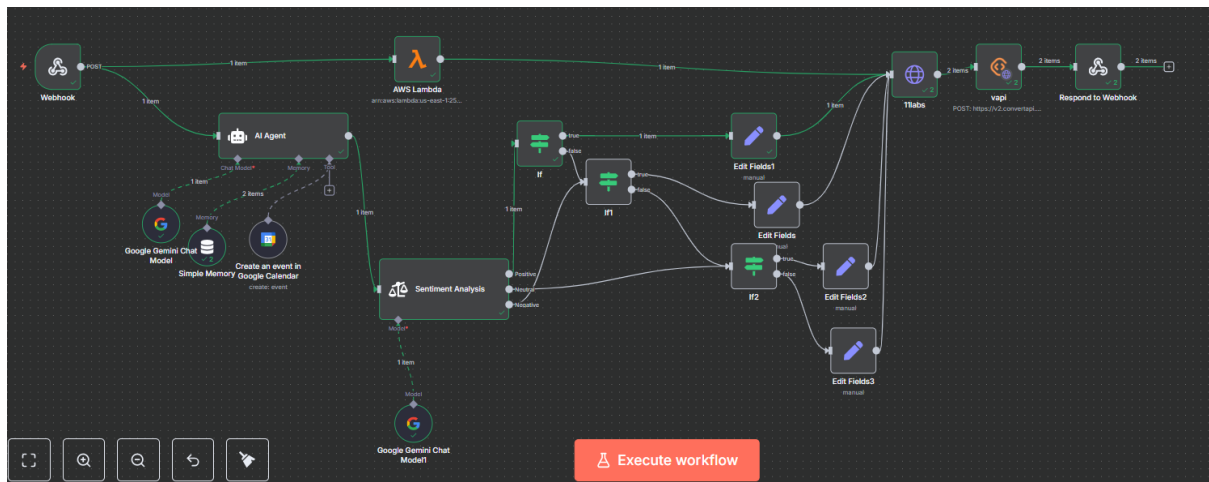
Problem Statement

Traditional payment reminder systems are often static and lack interactivity, resulting in low customer engagement and delayed payments. Most solutions send text-based notifications, which may go unnoticed or fail to address language and tone preferences, leading to poor response rates. A more dynamic, human-like, multilingual, and emotionally adaptive reminder system is needed to improve payment collection efficiency.

Tech Stack Used

- **Vapi** – AI voice agent platform for real-time, human-like conversational calls.
- **Retell AI** – Enhances voice quality and responsiveness during live interactions.
- **ElevenLabs** – Multilingual, emotion-aware speech synthesis for personalized customer experience.
- **n8n** – Workflow automation for orchestrating AI calls, database lookups, and payment link generation.
- **AWS** – Backend infrastructure:
 - **DynamoDB** – Stores customer payment data, due dates, and interaction history.
 - **AWS Lambda** – Runs custom logic for payment predictions, sentiment analysis, and workflow triggers.

Solution Workflow



1. **Trigger Event** – Payment due date approaches → n8n workflow initiates reminder sequence.
2. **Data Retrieval** – n8n fetches customer info from AWS DynamoDB (amount, due date, language preference).
3. **AI Call Setup** – n8n triggers a Vapi voice agent integrated with ElevenLabs for natural, multilingual speech.
4. **Live Call & Conversation** –
 - Vapi + Retell AI handle the conversation.
 - ElevenLabs provides emotional tone adjustment based on sentiment detection.
5. **Payment Confirmation** – If the customer agrees to pay, a payment link (via Razorpay) is sent automatically.
6. **Behavioral Tracking** – AWS Lambda logs call outcomes, predicts payment likelihood, and updates DynamoDB.
7. **Follow-up Automation** – If no payment is confirmed, n8n schedules the next call or sends a follow-up in the preferred language.