



Nitram-DB-Finance-bot-LLM

Your internal finance assistant for bank employees

Developed by the Nitram Team



by MARTIN WAWERU



Overview

Web-Based Assistant

Designed for bank staff to increase efficiency

Natural Language Queries

Users can ask questions in plain English

Built on Robust Tech

Flask, PostgreSQL, Groq's LLM API power backend

Dynamic SQL Generation

Converts user input into accurate SQL queries



Features

Plain English Queries

Access customer info, balances, and loans easily

Aggregate Insights

Summarizes total loans, deposits, and more

Contextual Conversations

Remembers prior details within a session

Advanced LLM Integration

Utilizes Groq's LLaMA3-8B model for analysis

Architecture

Backend

Python Flask with
psycopg2 driver and Groq
API

Database

PostgreSQL with
comprehensive financial
schema

LLM API

Groq's LLaMA3-8B API
powers SQL & responses

Hosting

Cloud hosted securely on
Render.com platform

How It Works

1

User Input

User types question in natural language

2

SQL Translation

Groq API converts input into SQL query

3

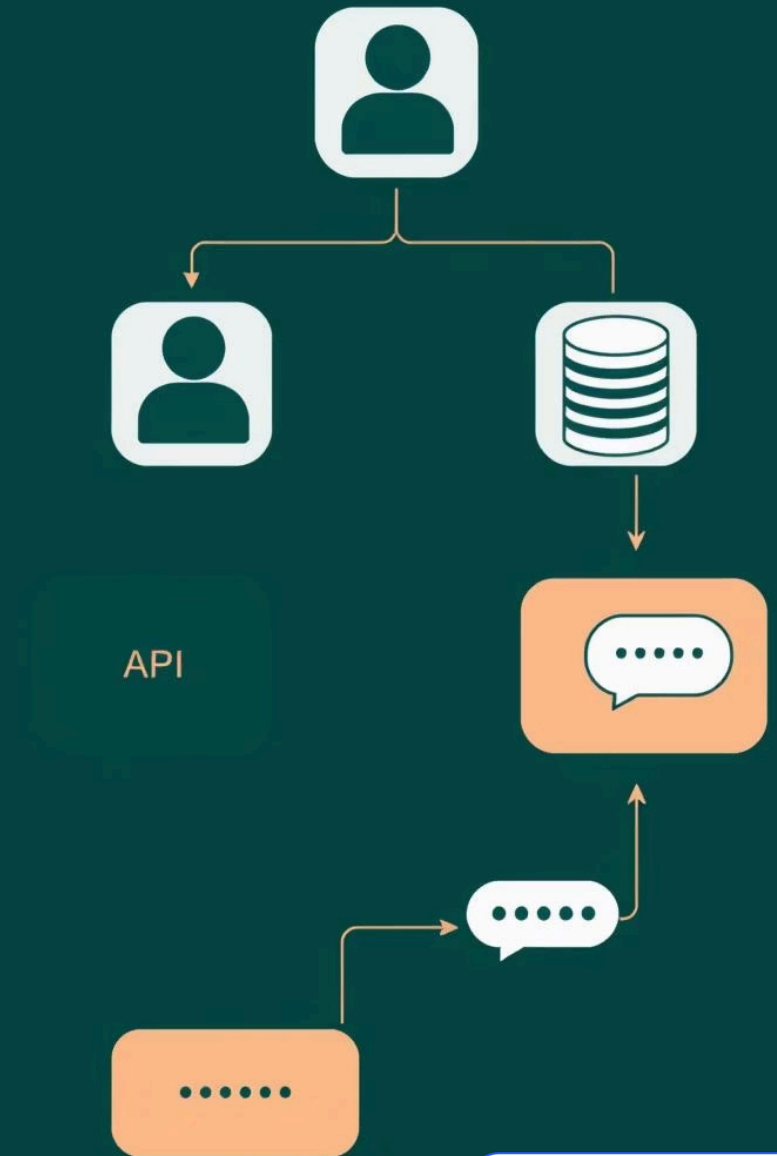
Data Retrieval

SQL runs on live PostgreSQL financial database

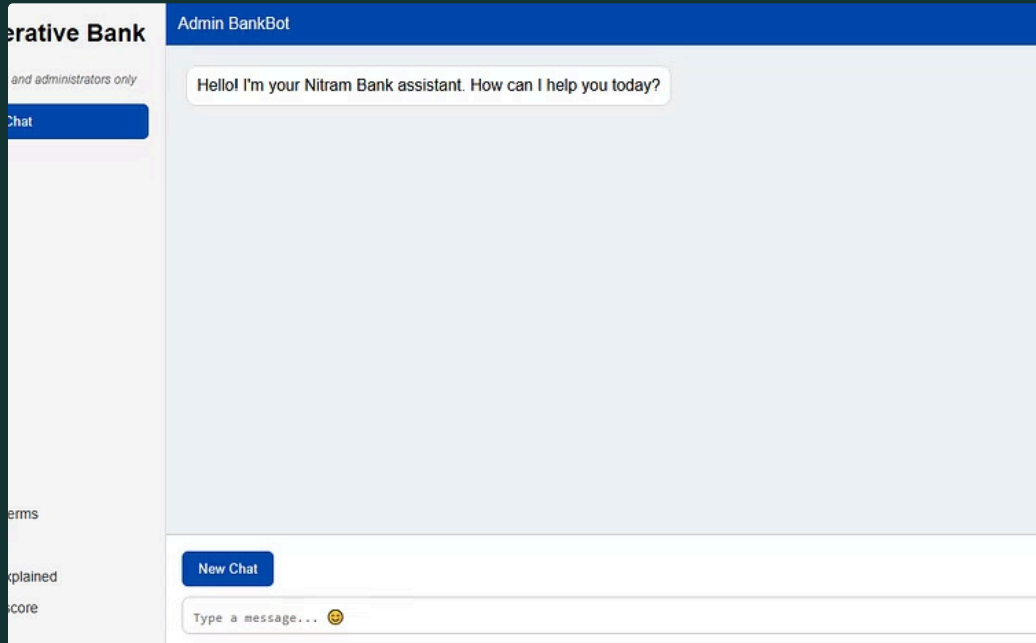
4

Response Generation

Groq API returns clear, professional answer

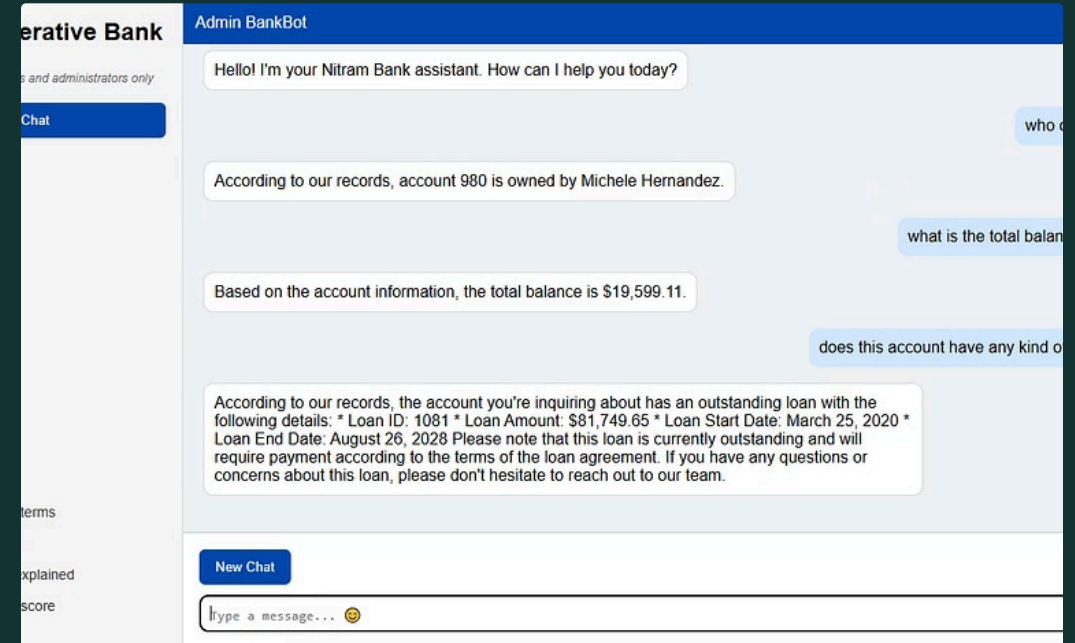


User Interface Preview



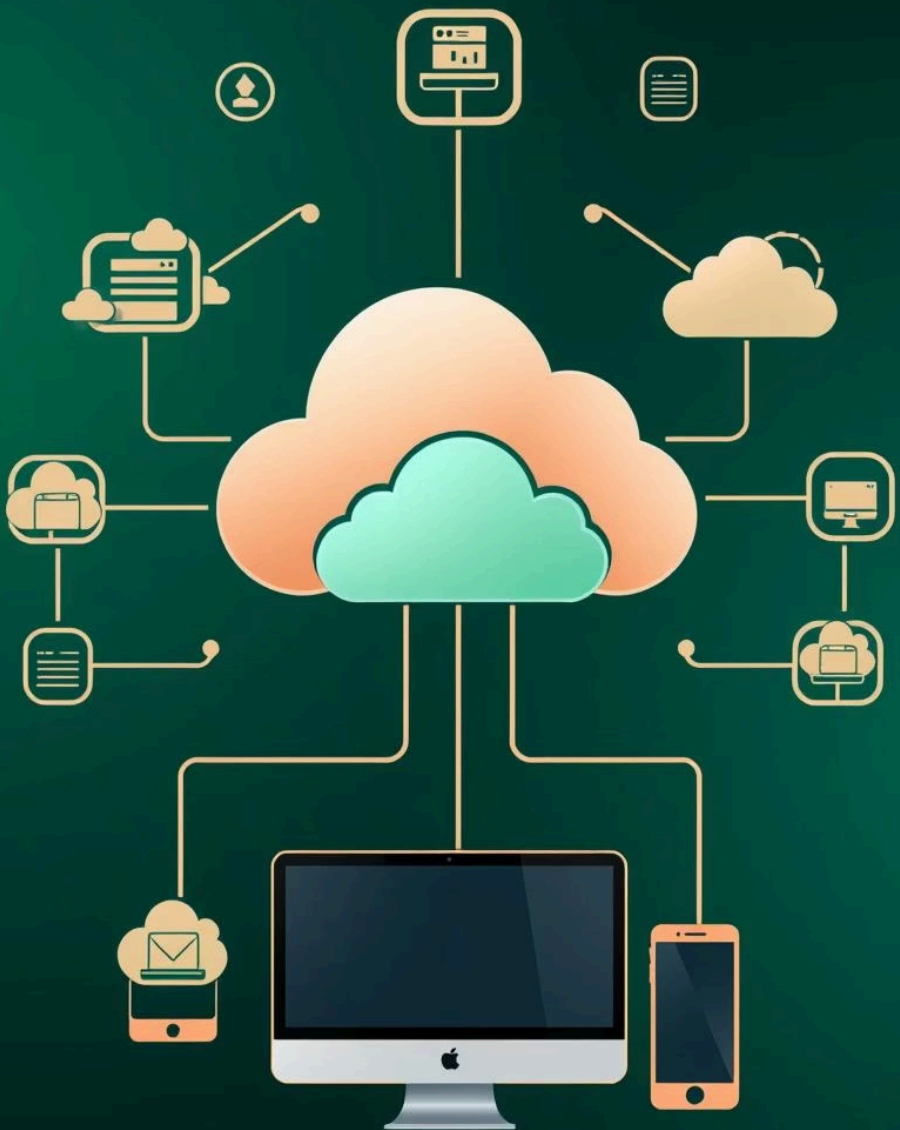
Chat Interface

Conversational query input and response display



Detailed Financial Results

Clear and organized output of requested data



Deployment

Render Hosting

Flask app deployed securely on Render platform

Internal Access

Available exclusively to bank employees

Secure Integration

Backend API and frontend connected with safety

Live Deployment Link

Next Steps & Improvements

Expand Query Scope

Include more banking products and services

Enhance Memory

Improve long-term conversation context handling

Security Features

Add authentication and user roles

Optimize Performance

Database tuning and scaling for higher loads

