Banking Customer Support AI – Architecture Overview

This project implements a **multi-agent, LLM-driven Banking Customer Support AI** using a **graph-based orchestration architecture**. The system is designed to handle customer feedback and queries in a deterministic, auditable, and operations-friendly manner, aligning with enterprise banking requirements.

Multi-Agent Design

The solution decomposes the problem into specialized agents:

- **Classifier Agent** – Classifies incoming customer messages into *Positive Feedback*, *Negative Feedback*, or *Query* using an LLM with fallback heuristics.
- **Feedback Agent** – Handles positive and negative feedback; for complaints, it generates a support ticket and persists it to the database.
- **Query Agent** – Handles customer queries by extracting ticket identifiers and retrieving ticket status from the database.

Each agent is implemented as an independent, reusable module and does not directly communicate with other agents.

LangGraph Orchestration

The agents are orchestrated using **LangGraph**, where:

- Each agent is represented as a **node** in a StateGraph.
- Routing between agents is deterministic and driven by classification results using conditional edges.
- A shared state object flows through the graph, ensuring controlled data propagation