SENTINEL BANK: Team Work-Breakdown Structure

Architecture Diagram (Success Metrics for the Demo)

Three "High-Expectation" metrics to look out for;

- **Triage Precision:** Percentage of tickets sent to the correct department (Target: >95%).
- **Reasoning Transparency:** Can the AI explain *why* it denied a loan or flagged a fraud?
- **Human Efficiency:** Estimated hours saved per 100 tickets compared to manual routing.

Member 1: AI Engineer (Architect & Orchestrator)

Focus: The Multi-Agent Core, Logic Flow, and System "Brain."

Week	Primary Task	Responsibilities	Deliverables
1	**Agentic Routing Logic**	Define the **Supervisor Router** in LangGraph. Map intent categories (e.g., "Dispense Error," "Fraud Alert").	A functional routing script that directs a raw user query to the correct specialized "worker" agent.
2	**Multi-Agent Collaboration**	Design "Agent-to-Agent" handshakes. Implement **Chain-of-Thought (CoT)** reasoning so agents verify data before responding.	A working multi-step loop where the Dispatcher hands a ticket to a Sentinel for risk assessment.
3	**System Evaluation**	Conduct **A/B Testing** on prompts. Document the "Agent Reasoning Logs" (the step-by-step logic) for the final report.	A technical "Logic Audit" proving the system routes tickets with $>90\%$ accuracy compared to manual baselines.

Member 2: AI Engineer (Security & Knowledge Specialist)

Focus: RAG (Retrieval-Augmented Generation), Integrity, and Fraud Intelligence.

Week	Primary Task	Responsibilities	Deliverables
1	**Knowledge Ingestion**	Build the **Vector Database** (ChromaDB). Ingest synthetic bank policy manuals. Setup the RAG pipeline.	A queryable "Knowledge Base" that provides grounded, non-hallucinated answers to bank policy questions.
2	**Sentinel Fraud Engine**	Develop the **Sentinel Agent**. Create logic that analyzes transaction metadata (time, location, amount) to detect anomalies.	A "Security Report" generator that provides a natural language explanation for *why* a transaction was flagged.
3	**Guardrails & Ethics**	Implement **Safety Layers** (NeMo Guardrails) to prevent PII leaks. Red-team the system for "jailbreak" attempts.	A "Responsible AI Compliance" document showing zero-hallucination rates in stress tests.

Member 3: AI Developer (Backend & Data Architect)

Focus: Infrastructure, API Services, and the "Synthetic Universe."

Week	Primary Task	Responsibilities	Deliverables
1	**Data Synthesis**	Write custom **Faker scripts** to generate 1,000+ Nigerian customer profiles, transaction histories, and messy complaint logs.	A populated SQL Database representing a "Virtual Bank" environment for testing.
2	**API Connectivity**	Build the **FastAPI Gateway**. Manage **Session Persistence** so the AI remembers the conversation context across the app.	A live set of API endpoints that the Frontend can call to interact with the Multi-Agent Core.
3	**Performance Tuning**	Optimize database query speeds. Ensure the "Push-to-App" WebSocket simulation triggers instantly for the demo.	A "Performance Dashboard" showing system latency metrics (average response time <2s).

Member 4: AI Developer (Frontend & Experience Designer)

Focus: The Demo App, "Glass Box" Visualization, and Presentation.

Week	Primary Task	Responsibilities	Deliverables
1	**App Shell Design**	Build the **Streamlit Interface**. Design a "Split-Screen" view: User Chat on the left, **Agent Thought Trace** on the right.	A functional UI shell where the team can begin testing "Mock" agent responses.
2	**Real-Time Integration**	Connect the UI to Member 3's APIs. Ensure the "Thought Trace" panel correctly prints the internal logs from the Engineers' logic.	An integrated "MVP Demo" where typing a complaint shows the AI's internal "thinking" in real-time.
3	**Demo Orchestration**	Build the **Impact Visualizer** (charts showing efficiency gains). Script 3 "Golden Path" scenarios for the final presentation.	The **Final Project SENTINEL App**, polished with branding, metrics, and smooth "Push-to-App" visuals.