PROJECT SENTINEL

AI-AUGMENTED CUSTOMER CHURN ANALYSIS PLATFORM

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THE BUSINESS PROBLEM

Traditional churn analysis is a critical business function that is fundamentally broken. It is **time-intensive**, requiring analysts to spend days on manual data extraction; **inaccessible** to non-technical stakeholders; and **reactive**, meaning insights arrive too late to prevent revenue loss.

For a mid-sized SaaS company, this can represent **₹20.6 lakhs in Monthly Recurring Revenue (MRR) at risk** without real-time visibility.

THE SOLUTION: AN AI-POWERED INSIGHTS ENGINE

Project Sentinel is an end-to-end platform that transforms this manual, reactive process into an instant, interactive, and conversational insights engine. It empowers non-technical stakeholders to get data-backed answers in seconds, not days.

QUANTIFIED BUSINESS IMPACT

Metric	Value	Business Outcome
Analysis Time	**99% Reduction**	From 2+ hours per query to **30 seconds**, freeing analysts for strategic work.
Revenue at Risk	**₹20.6 Lakhs MRR**	The platform provides real-time visibility into the exact revenue at risk from churn.
Revenue Saved	**₹7.7 Lakhs (Annual)**	The projected savings from preventing just 2.2% of additional churn through faster intervention

KEY INSIGHTS & DRIVERS DISCOVERED

The platform immediately identified three critical, quantifiable churn drivers:

1. **Contract Type Risk**: Monthly contracts churn at **15.2%**, which is **3.3x higher** than annual contracts (4.6%).

2. **Onboarding Failure**: Customers with incomplete onboarding churn at **15.48%**, a **2.5x multiplier** over those who completed it (6.12%).

3. **Engagement Correlation**: Low-engagement customers show **50% higher churn rates**.

PLATFORM ARCHITECTURE: A 5-COMPONENT SOLUTION

This project is a complete, integrated platform, not just a standalone dashboard.

Component	Technology	Purpose & Key Features
1. Data Foundation	**Python (Pandas, NumPy, Faker)**	Generated a professional-grade synthetic dataset of 5,000 customers with statistically realistic business logic (e.g., 8.5% churn, 3.3x multipliers) to ensure the model was built on credible data.
2. SQL Analysis Engine	**MySQL**	Developed a suite of 10+ strategic analytical queries to answer specific business questions, from revenue-at-risk calculations to multi-factor risk scoring.
3. Power BI Dashboard	**Power BI, DAX**	Built a 3-page interactive dashboard for executive-level visualization, KPI tracking, and drill-down analysis, with custom DAX measures for dynamic calculations.
4. AI Insights Engine ("Stuart")	**Python (Streamlit, OpenAI API)**	The "wow factor": a conversational AI assistant that allows non-technical users to ask questions in plain English and receive instant, data-backed insights, bypassing the analyst bottleneck.
5. Business Documentation	**Word**	Created a full suite of 5 professional documents (Executive Summary, Technical Architecture, etc.) to ensure the project's value is clear to any stakeholder, from CEO to engineer.

CORE SKILLS DEMONSTRATED

This project proves end-to-end capability across the entire modern analyst stack.

- **Business Analysis:** Problem Validation, Requirements Analysis, Business Case Development, ROI Calculation, Stakeholder Communication.

- **Data Analytics & Visualization:** SQL (Complex Queries, Risk Scoring), Power BI (DAX, Dashboard Design), Advanced Excel, Data Storytelling.

- **AI Integration & Python:** AI Prompt Engineering, API Integration, Python (Pandas for data analysis, Streamlit for UI development).

- **Project Delivery:** End-to-End Solution Design, Quality Assurance, Agile Principles (iterative development), and Professional Documentation.

THE STRATEGIC DIFFERENTIATOR

Most BA portfolios show proficiency in SQL and Power BI. **Project Sentinel** proves the next level of capability: **AI Augmentation**.

It demonstrates the ability to not just *analyze* data, but to *build scalable systems* that automate analysis and democratize insights for the entire business.