**PROJECT SENTINEL: EXECUTIVE SUMMARY**

**AI-Augmented Customer Churn Analysis Platform**

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**Duration:** 4 Days (October 26-30, 2025)  
**Portfolio Project Status:** Complete & Interview-Ready

**THE BUSINESS PROBLEM**

Customer churn represents a critical revenue risk that most SaaS companies struggle to predict and prevent effectively. Traditional analysis methods face three fundamental challenges:

**Time-Intensive:** Manual analysis takes 2-3 days per cycle, making insights reactive rather than proactive.

**Non-Scalable:** Analysis cannot be refreshed frequently due to manual overhead, leaving business leaders operating with outdated information.

**Inaccessible:** Data lives fragmented across SQL queries, dashboards, and PowerPoint decks, creating friction between analysis and action.

**The Cost:** A mid-sized SaaS company can have ₹20+ lakhs in monthly recurring revenue at risk without real-time visibility into churn patterns.

**THE SOLUTION**

Project Sentinel transforms static churn analysis into an interactive, AI-augmented insights platform. Rather than replacing analysts, it amplifies their capability by automating the mechanical work and surfacing insights through natural conversation.

**What It Does**

**For Business Stakeholders:**

* Ask questions in plain English: "Why are monthly customers churning?"
* Receive instant, data-backed insights without waiting for manual reports
* Explore churn patterns interactively through conversational queries

**For Analysts:**

* Automate 99% of routine analysis time (from 2 hours to 30 seconds)
* Focus energy on strategic recommendations instead of data manipulation
* Scale insights delivery without scaling headcount

**THE ARCHITECTURE (5 Components)**

**Component 1: Data Foundation**

* Synthetic dataset of 5,000 customers with realistic churn patterns
* Business logic validated: 8.5% churn rate, revenue distribution, engagement scoring

**Component 2: SQL Analysis Engine**

* 10 analytical queries extracting critical business insights
* Queries stored in MySQL Workbench for reproducibility

**Component 3: Power BI Dashboard**

* 3-page interactive dashboard visualizing key metrics
* Custom DAX measures for dynamic calculations
* Executive-friendly presentation layer

**Component 4: AI Insights Engine (Stuart)**

* Python-based conversational interface using OpenAI API
* Real-time data querying with Pandas
* Natural language interaction replacing static reports
* Black and gold premium UI matching brand standards

**Component 5: Business Documentation** (This Document Suite)

* Complete project context for technical and non-technical interviewers
* Skills demonstration mapping
* Interview presentation materials

**KEY BUSINESS INSIGHTS DISCOVERED**

The analysis revealed three critical churn drivers:

**1. Contract Type Risk**

* Monthly contracts churn at 15.2% (3.3x higher than annual contracts at 4.6%)
* **Revenue Impact:** ₹8.4 lakhs MRR at risk from monthly subscribers alone

**2. Onboarding Failure**

* Incomplete onboarding increases churn risk by 2.5x (15.48% vs 6.12%)
* **Revenue Impact:** ₹6.8 lakhs MRR at risk from poor onboarding execution

**3. Engagement Correlation**

* Low engagement scores (<50) show 50% higher churn rates
* **Revenue Impact:** ₹5.4 lakhs MRR at risk from disengaged customers

**Total Revenue at Risk:** ₹20.6 lakhs monthly recurring revenue

**QUANTIFIED BUSINESS IMPACT**

**Time Savings**

* **Before:** 2 hours per analysis cycle (manual SQL + Power BI export + summary writing)
* **After:** 30 seconds per query (conversational AI provides instant insights)
* **Time Reduction:** 99% efficiency gain

**Revenue Protection Opportunity**

If Project Sentinel helps prevent just 2.2% additional churn through faster intervention:

* **Annual Revenue Saved:** ₹7.7 lakhs
* **ROI Timeline:** Immediate (platform ready for deployment)

**Scalability Impact**

* **Traditional Approach:** Requires hiring additional analysts to scale insights delivery
* **Sentinel Approach:** One platform serves unlimited stakeholders simultaneously

**WHAT THIS PROJECT DEMONSTRATES**

***Traditional Business Analyst Skills***

✅ **Business Problem Validation** - Identified and quantified a real business pain point  
✅ **Data Analysis** - Designed and executed 10 analytical SQL queries  
✅ **Visualization** - Built professional 3-page Power BI dashboard  
✅ **Stakeholder Communication** - Created executive-friendly presentations

***Modern AI-Augmented Skills***

✅ **Python Programming** - Built working application with Pandas, Streamlit, Plotly  
✅ **AI Integration** - Implemented OpenAI API for natural language processing  
✅ **UI/UX Design** - Created intuitive, branded conversational interface  
✅ **Prompt Engineering** - Designed AI behavior for business context

***Strategic Capabilities***

✅ **End-to-End Thinking** - Owned complete solution from problem to deployment  
✅ **Quality Standards** - Iterated until production-ready (not prototype quality)  
✅ **Attention to Detail** - Maintained design consistency (fonts, colors, branding)  
✅ **Resourcefulness** - Learned new technologies to solve business problems

**THE COMPETITIVE DIFFERENTIATOR**

Most Business Analyst portfolios showcase SQL and Power BI skills. Project Sentinel goes three steps further:

**1. AI Augmentation** - Demonstrates understanding of how AI enhances (not replaces) analyst work

**2. Production Quality** - This is not a tutorial follow-along. Every component was designed, built, and iterated from scratch.

**3. Business Value Focus** - Every technical decision ties back to quantified business impact

**4. Modern Tech Stack** - Shows capability to work with cutting-edge tools (Python, AI APIs, modern BI platforms)

This positions the candidate not as an entry-level certificate holder, but as a high-caliber professional who understands where the industry is heading and has the skills to thrive in that future.

**PROJECT NARRATIVE**

"I'm not a traditional entry-level Business Analyst fresh from a certification course. I'm an experienced professional with a track record in finance, operations, and CRM who discovered a passion for solving business problems through data and technology.

Project Sentinel proves three things:

**First, I can identify real business problems.** I didn't just pick a dataset and run generic queries. I validated that customer churn analysis is a genuine pain point with quantifiable revenue impact.

**Second, I can design and execute comprehensive solutions.** This isn't a single dashboard. It's a complete 5-component platform that demonstrates end-to-end thinking from data foundation to business documentation.

**Third, I don't compromise on quality.** I spent days iterating Component 4 from a simple static report generator into a sophisticated conversational AI interface because professional work requires professional standards. That level of dedication and attention to detail is what I bring to every project.

I'm not claiming to be a Python developer or data scientist. I'm demonstrating that I'm resourceful enough to learn whatever tools are needed to solve business problems, and disciplined enough to maintain quality standards throughout execution. That's what makes a great Business Analyst in 2025."

**CLOSING STATEMENT**

Project Sentinel represents what Business Analysts need to become in the AI era: professionals who combine domain expertise, analytical rigor, and technological fluency to deliver scalable business value.

This isn't a portfolio piece created to check a box. It's a demonstration of capability, work ethic, and strategic thinking. It shows I can learn quickly, maintain high quality standards, and deliver solutions that directly impact business outcomes.

Most importantly, it proves I'm ready for the bridge role I'm targeting because I've already done the work that role requires: identifying business problems, designing data-driven solutions, and executing with professional standards from start to finish.

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