

Business Problem Statement

RavenStack is a fictional AI-powered SaaS collaboration platform operating on a subscription-based business model. As the platform scales, understanding **customer growth patterns, revenue performance, churn behavior, and retention dynamics** becomes critical for sustainable business success.

The management team has observed variations in subscription adoption across plan tiers, differences in customer churn rates, and changing revenue contributions from industries, geographies, and referral sources. Additionally, there is a need to evaluate the effectiveness of trial accounts, identify early churn signals such as downgrades, and assess reactivation potential of churned customers.

You are tasked with analyzing RavenStack's subscription, customer, and churn data to uncover actionable insights that support **growth optimization, revenue stability, and churn reduction**.

The analysis aims to answer the following overarching business question:

How can RavenStack leverage its subscription and customer data to improve revenue performance, enhance customer retention, and optimize growth and acquisition strategies?

Deliverables

1. Data Preparation & Exploratory Analysis (Python)

- Clean and preprocess raw SaaS datasets
- Handle missing values and active subscription logic
- Perform exploratory data analysis (EDA) to understand growth trends, revenue distribution, and customer behavior

2. Data Analysis (SQL)

- Load cleaned data into a PostgreSQL database
- Perform business-driven analysis using joins, aggregations, filters, and CTEs

- Conduct market analysis, funnel analysis, cohort analysis, churn, and retention analysis

3. Visualization & Insights (Power BI)

- Build an interactive multi-page dashboard
- Present KPIs related to revenue, growth, churn, and retention
- Enable stakeholders to explore insights through filters and drill-downs

4. Business Insights & Recommendations

- Summarize key findings from Python, SQL, and Power BI analysis
- Translate analytical results into actionable business recommendations

5. Project Documentation & Reporting

- Create a structured project report outlining methodology, insights, and conclusions
- Document assumptions, limitations, and future scope

6. GitHub Repository

- Maintain a well-structured repository containing:
 - Python notebooks
 - SQL queries
 - Power BI dashboard screenshots
 - Project report and documentation