Q1 Worship Song Analysis Case Study

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# 1. Executive Summary

This case study analyzes the worship songs performed at Hmong First Baptist Church from January through March 2025. The purpose is to identify trends in song usage, highlight recurring spiritual themes, and provide data-informed recommendations for future worship planning. Excel, Python, Power BI, and SQL were used to simulate real business intelligence workflows.

# 2. Data Overview

The dataset contains three fields: Date, Song Title, and Theme. Data was originally sourced from internal church presentations and cleaned using Excel and Python. The cleaned data was then loaded into a PostgreSQL database for analysis.

# 3. Key Questions

- Which songs were used most frequently?

- What were the most common worship themes?

- Which Sundays featured the highest or lowest song variety?

- Were certain songs repeated across multiple weeks?

# 4. Methodology

• Data Cleaning: Excel + Python (pandas)  
• Visual Analysis: Excel charts, Power BI visuals  
• SQL Queries: Aggregated insights in PostgreSQL  
• Automation: Jupyter Notebook for reproducibility

# 5. Analysis & Insights

- Top 10 worship songs covered 70% of all services.

- Most frequent theme was 'God as Redeemer' and 'Shepherd'.

- Songs like 'Koj Yog Vajtswv' and 'Peb Nco Ntsoov Vajtswv Tshavntuj' were repeated 2–3 times.

- March worship sets had the highest alignment between theme and song content.

# 6. SQL Use Case

To simulate real-world BI environments, the final dataset was modeled into a PostgreSQL table. The following SQL queries were used to generate insights:

- Top 10 most used songs by COUNT(\*)

- Most common worship themes by GROUP BY theme

- Song counts per Sunday by date

- Detection of songs repeated across multiple services

- Creation of a VIEW to support visual tools

# 7. Recommendations

- Continue tracking songs weekly and storing in a SQL database.

- Use Power BI to create dynamic dashboards for worship leaders.

- Develop feedback forms to align song selection with congregation responses.

- Align future worship planning to repeat successful theme patterns.

# 8. Appendix

• Excel workbook: Worship songs and themes by date

• Power BI dashboard (optional enhancement)

• SQL script for PostgreSQL deployment