Business Requirements Document (BRD)

Project Title: Spotify Listening Insights & Engagement Analytics Dashboard

1. Introduction

In today's digital music era, understanding user listening behavior is crucial for both listeners and streaming platforms. This project focuses on analyzing **Spotify listening data** to uncover patterns in album consumption, artist engagement, track performance, and user behavior trends over time. The goal is to develop a comprehensive and interactive analytics dashboard that provides deep insights into listening habits, year-over-year trends, and content engagement.

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2. Business Objective

The primary purpose of this analysis is to help users and stakeholders understand how listening patterns evolve over time, what content drives maximum engagement, and how trends shift across years. This will enable data-backed decisions for personalized recommendations, platform improvements, and content strategy.

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3. Scope of Work

The scope of this BRD includes the development of: - An interactive dashboard containing **Albums, Artists, Listening Patterns**, and **Details Grid** sections. - Yearly, monthly, and holistic analysis of Spotify listening habits. - Visualizations that provide clarity, trend discovery, and comparative metrics.

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4. Functional Requirements

A. ALBUMS MODULE

This section provides insights into how users interact with albums over time.

1. Total Albums Played Over Time

- Track changes in total albums played across months and years.
- Identify long-term behavior shifts or seasonal patterns.
- Visualized using line charts or area charts.

2. Number of Albums Listened by Year

- Show unique albums played each year.
- Helps identify annual listening diversity and volume.
- Supports filtering by year and drill-down by album.

3. Top 5 Albums

- Identify most frequently played albums.
- Based purely on listening frequency or combined metrics.
- Includes album name, artist, and number of plays.

4. Latest Year vs Previous Year Analysis

- Compare total album plays between Latest Year (LY) and Previous Year (PY).
- Includes:
- **LY vs PY Trend Comparison**
- **YoY (Year-over-Year) Growth Analysis**
- Helps measure improvement, decline, or stability in consumption.

B. ARTISTS MODULE

This section focuses on user interaction with different artists.

1. Total Artists Played Over Time

- Shows evolution of artist consumption across years.
- Highlights periods of high or low musical exploration.

2. Number of Artists Listened by Year

- Displays yearly count of unique artists played.
- Represents user diversity and changing musical preferences.

3. Top 5 Artists

- Identifies most played artists.
- Ranks them based on listening frequency.
- Useful for understanding core user taste.

4. Latest Year vs Previous Year Analysis

- Compare artist engagement across LY and PY.
- Includes:
- **LY vs PY Artist Trends**
- **YoY Growth Analysis for Artist Engagement**
- Helps in identifying new top-performing artists.

C. LISTENING PATTERNS MODULE

This module uncovers behavioral patterns and patterns of listening engagement.

1. Listening Hours Analysis (Heatmap)

- Identifies listening intensity across hours of the day and days of the week.
- Heatmap visualization with color-coded intensity.
- Helps in understanding peak listening times.

2. Average Listening Time vs Track Frequency (Scatter Plot + Quadrants)

- A scatter plot to categorize tracks based on two dimensions:
- **Track Frequency (number of plays)**
- **Average Listening Time (in minutes)**
- Quadrant Analysis Categories:
- **High Frequency & High Listening Time** – Most engaging tracks
- **Low Frequency & High Listening Time** – Niche but impactful tracks
- **High Frequency & Low Listening Time** – Short & repeatedly played tracks
- **Low Frequency & Low Listening Time** – Least popular tracks
- Helps discover content quality vs repetition patterns.

D. DETAILS GRID

This section provides an interactive and dynamic grid view for detailed track-level exploration.

Objective

Provide a structured and searchable table containing key Spotify dataset attributes.

Key Requirements:

1. Grid View with Essential Fields

- Should present:
- Album Name
- Artist Name
- Track Name
- Track Duration
- Play Count
- Listening Time
- Must allow sorting, filtering, and column-level search.

2. Drill-Through Functionality

- Users should be able to click any album/artist/track from the main report.
- Drill through to a detailed grid view showing only relevant records.
- Drilled-through data should be exportable to CSV.

3. Drill Down, Drill Up, and Hierarchy

- Support hierarchical navigation such as:
- Artist → Albums → Tracks
- Year → Month → Day
- Enables deeper contextual exploration.

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5. Non-Functional Requirements

- Dashboard should load within **3–5 seconds** for optimal user experience.
- Visuals should be mobile and desktop responsive.
- Data model should be optimized using relationships and star schema modeling.
- Export functionality must maintain data accuracy.

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6. Assumptions

- Spotify dataset provided is clean and contains necessary fields.
- User has basic familiarity with dashboard navigation.

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7. Success Criteria

- Ability to analyze listening patterns accurately.
- Smooth drill-through experience.
- Clear differentiation between yearly trends.
- Insights that help users understand consumption behaviors.

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8. Final Deliverables

- Fully interactive dashboard with all four modules.
- Documentation (BRD + Data Dictionary).
- Export-ready detailed grid view.

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9. Conclusion

This BRD outlines the complete structure and requirements for developing the **Spotify Listening Insights & Engagement Analytics Dashboard**. By implementing these modules, the dashboard will provide a comprehensive and user-friendly analytical view of listening behaviors, supporting better content strategy and personalized engagement insights.