**ABSTRACT**

The **Spotify Music Trend Analysis** project aims to explore, analyse, and interpret large-scale music streaming data to understand contemporary listening habits and emerging trends. This study leverages Spotify’s publicly available datasets, including track metadata, audio features (such as danceability, energy, tempo, and valence), and listener engagement metrics, to provide a holistic view of music consumption patterns. The project implements core data engineering principles, including data collection, cleaning, transformation, and storage using ETL (Extract, Transform, Load) pipelines and cloud-based or relational data warehouses for efficient query performance. Advanced techniques in data processing, including batch and incremental processing, are employed to handle the volume and velocity of streaming data. The analysis focuses on uncovering trends in genres, artist popularity, temporal listening patterns, and regional preferences, while identifying correlations between song attributes and listener engagement. Visualizations and dashboards are used to present insights in an intuitive manner, enabling stakeholders such as music producers, marketers, and streaming platform strategists to make data-driven decisions. The project not only demonstrates the practical application of data engineering methodologies in a real-world scenario but also highlights the potential of data-driven insights in shaping the future of music production, recommendation systems, and personalized listener experiences.

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