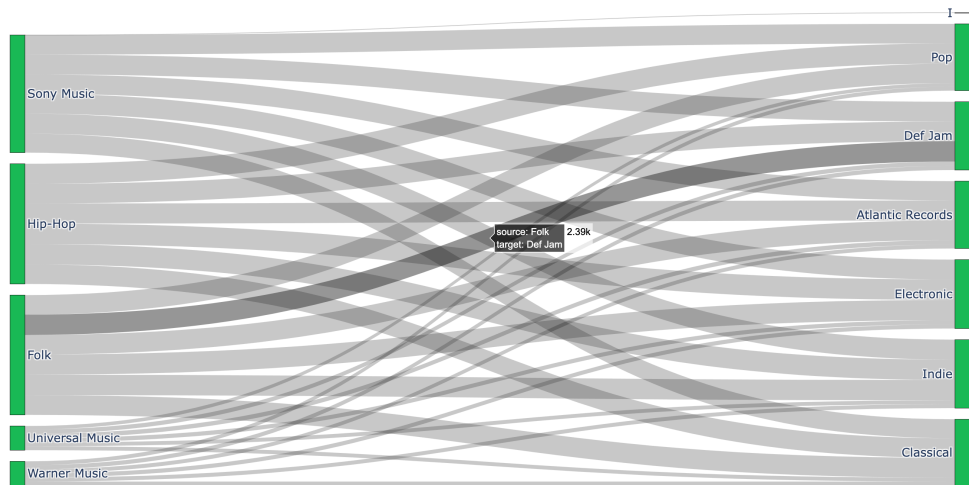# Syncing to the Beat:
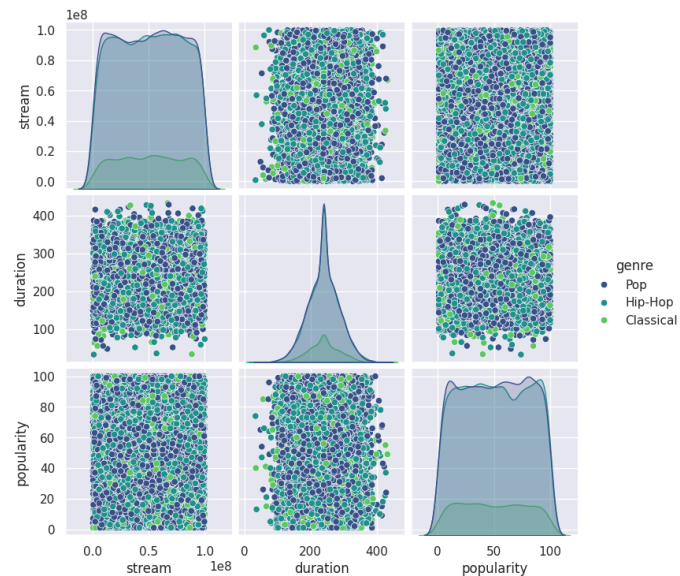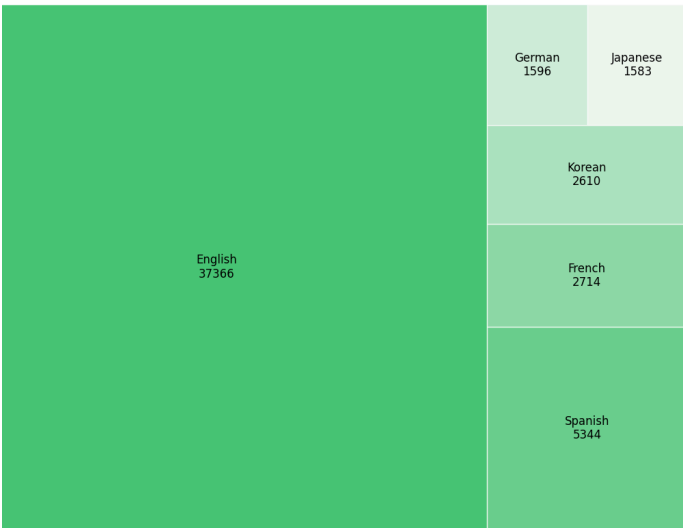## Visualizing Spotify's Global Music Trends

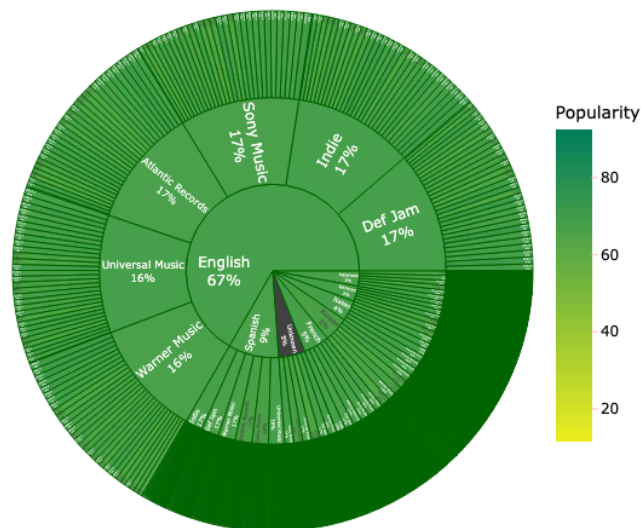## Exploring Genre-Label Connections in Spotify's Music Ecosystem:

This chord diagram highlights connections between the top five music genres and leading record labels, showcasing the dynamics of Spotify's music ecosystem. Thicker lines represent stronger associations, revealing genre diversity across labels and label specialization. The visualization uses a clean, contrasting design inspired by Spotify's aesthetic to make the data engaging and accessible.


The visuals provide insights into Spotify's diverse music catalog. The treemap on the left shows the distribution of songs by language, with English dominating the platform, followed by languages like Spanish, French, Korean, and Japanese. It highlights Spotify's global reach and linguistic diversity. The pairplot on the right explores key music features—streaming count, duration, and popularity—across three genres: Pop, Hip-Hop, and Classical. By visualizing these features, it uncovers trends and relationships between them, showcasing how different genres perform based on these music metrics.
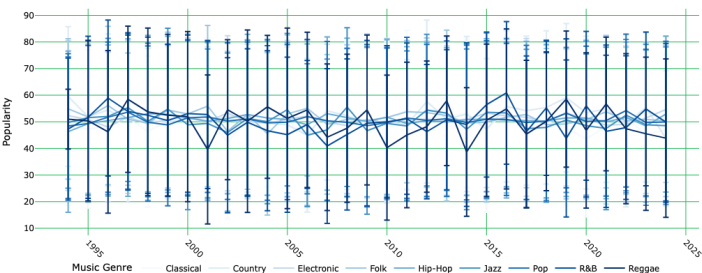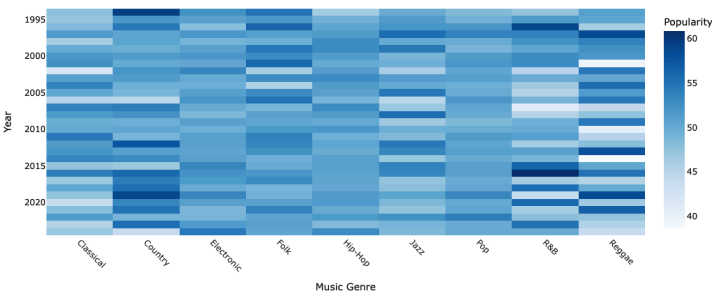
Music Distribution: Language and Label Popularity
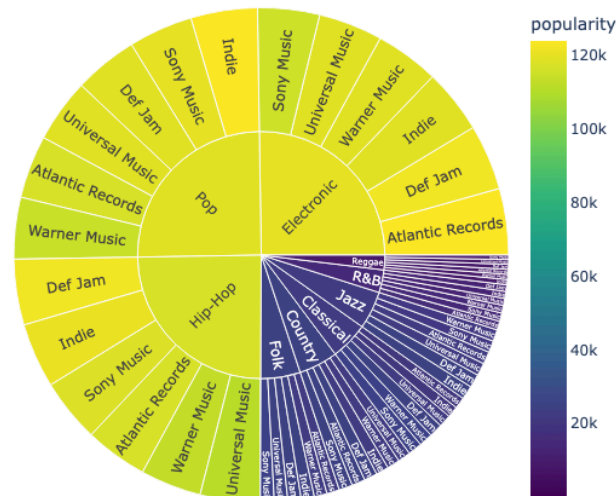
The two sunburst charts provide insights into the distribution of Spotify's music catalog by language, label, and popularity. The first chart focuses on the language and label breakdown, with English dominating the catalog, followed by other languages such as Spanish, French, and Korean. It highlights how different languages contribute to Spotify's global reach. The second chart adds an additional layer by visualizing the popularity of songs, showcasing how major record labels like Universal Music and Sony Music dominate the platform. The color gradient in this chart helps illustrate the varying levels of popularity across languages and labels.

This collection of visualizations provides an in-depth look at the evolution of music genre popularity and trends over time. The first chart, **Trends in Music Popularity: A 30-Year Overview**, offers a detailed analysis of genre popularity from 1995 to 2025, showcasing fluctuations in genre popularity with error bars indicating variation over

time. **Shifting Trends in Music Genre Popularity** further highlights these trends through a heatmap, offering a clear, color-coded view of how genres like Pop, R&B, and Hip-Hop have gained or lost popularity. The third chart, **Trends in Explicit Content Across Music Genres Over Time**, shows the steady increase in tracks containing explicit content, broken down by genre, with a focus on Hip-Hop, R&B, and Electronic genres. Finally, **Rise and Fall of Music Genres Over Time** emphasizes the average popularity of each genre through grouped bar charts, providing a visual representation of how musical tastes have shifted decade by decade. Together, these visuals offer a comprehensive perspective on the trends that have shaped and continue to shape the global music landscape.
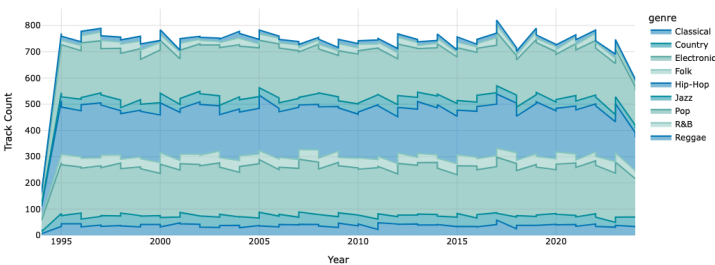
Importance

This dataset offers a comprehensive insight into the trends and dynamics of global music on Spotify. By analyzing key features such as streaming counts, song duration, popularity, and genre, the dataset uncovers valuable patterns that provide a deeper understanding of Spotify's music ecosystem. The insights drawn from this data help to highlight various aspects of music consumption, such as:

1. **Global Music Trends Analysis**:
   The dataset reveals the influence of genre diversity on streaming numbers across different regions, shedding light on the global impact of popular genres and the role of record labels in shaping genre popularity.
2. **Effective Visualizations**:
   Various visualization techniques, including treemaps and pairplots, offer both high-level overviews and in-depth analysis. These visualizations make complex relationships between attributes like genre and popularity easy to interpret and understand.
3. **Engaging and Accessible Insights**:
   The interactive and aesthetically appealing visuals enhance the data's accessibility, making it engaging for a wide range of audiences. This approach helps users better understand Spotify's global music landscape and trends.

Data and Method

The data utilized in this report is sourced from Spotify's extensive global music catalog, offering detailed information about the songs on the platform, such as their streaming counts, song durations, popularity, and assigned genres. This rich dataset serves as the foundation for exploring how various genres have fared over time and how music consumption is evolving globally. The analysis of these data points was conducted using Python, and different types of visualizations were generated to reflect the global shifts in music tastes and trends. Specific Python libraries and tools were employed to clean, process, and visualize the data effectively. For more detailed information on the methodologies, Python packages, and code used, please refer to the provided repository.

Github Link: https://github.com/AnushaShivakumar/Spotify_Data_Visualization

Google Colab Link:
https://colab.research.google.com/drive/1xrZHyyVyIHgZCC7W9VIHfc686Vr_64lY?usp=sharing

Data Source: https://www.kaggle.com/datasets/refiaozturk/spotify-songs-dataset