Tableau Analysis Report

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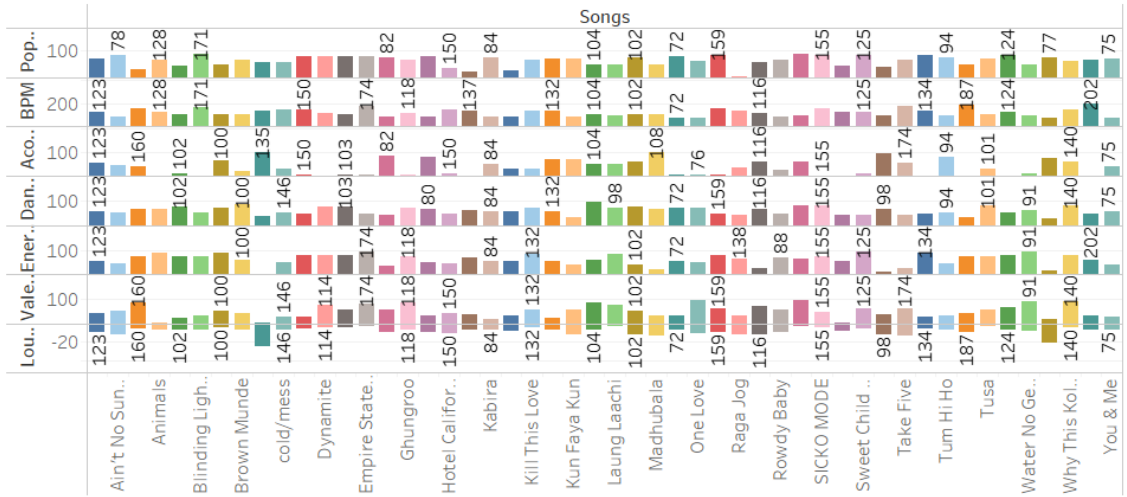
Introduction

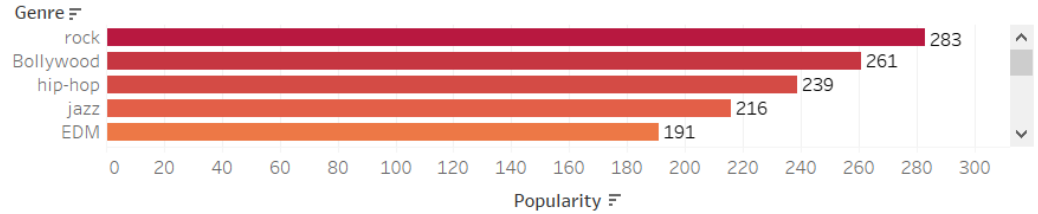
- The Tableau dashboard provides a comparative analysis of song attributes and their popularity metrics.
- Visualizations include a bar chart highlighting the most popular music genres and artists, with rock and Bollywood genres, as well as A.R. Rahman and Bob Marley & The Wailers, standing out.
- A pie chart illustrates the distribution of top contributing artists, showing their proportional share within the dataset.
- The correlation matrix showcases the relationships between song attributes like loudness, valence, and danceability, offering insights into the factors influencing song success.

Dashboard

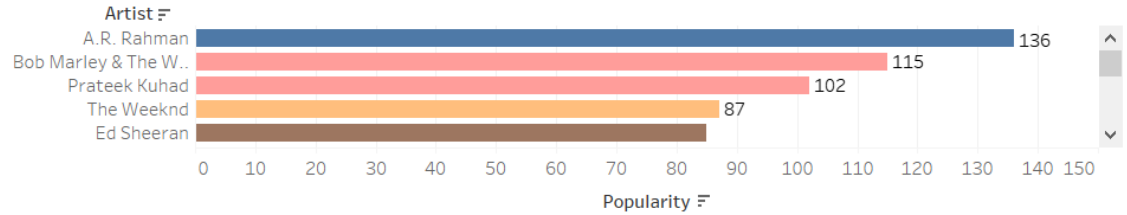
Songs Attribute Comparison



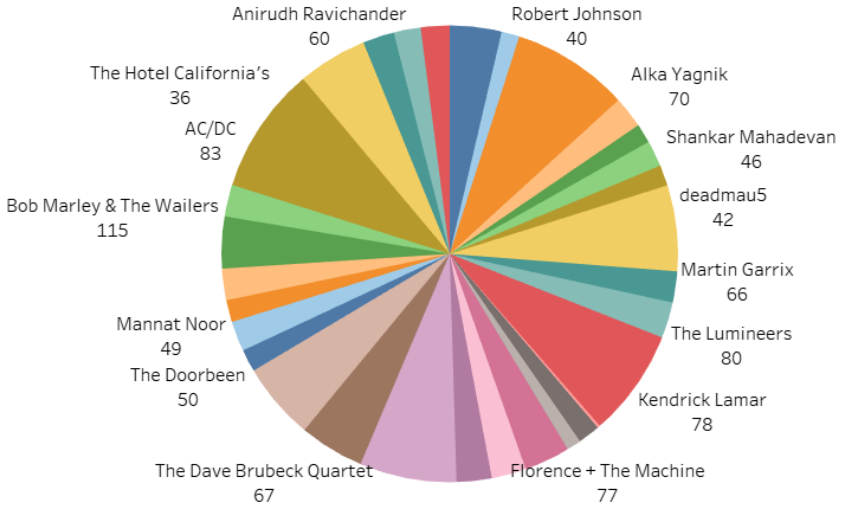
Genre by Popularity



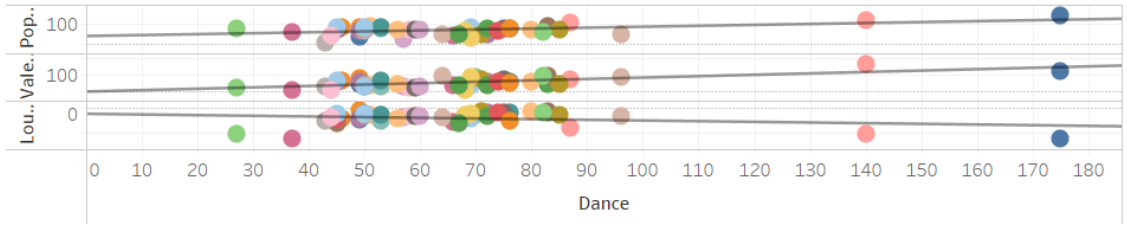
Artist by Popularity



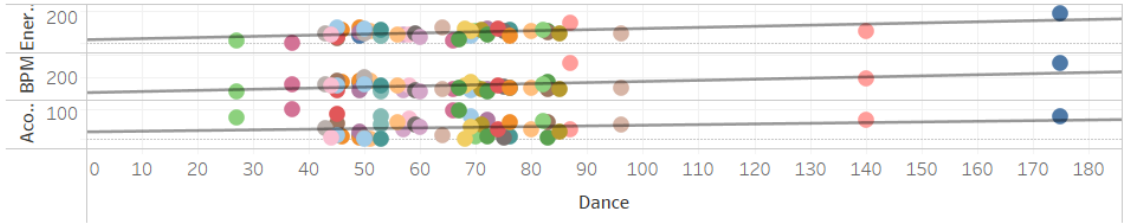
Pie Chart for Artist



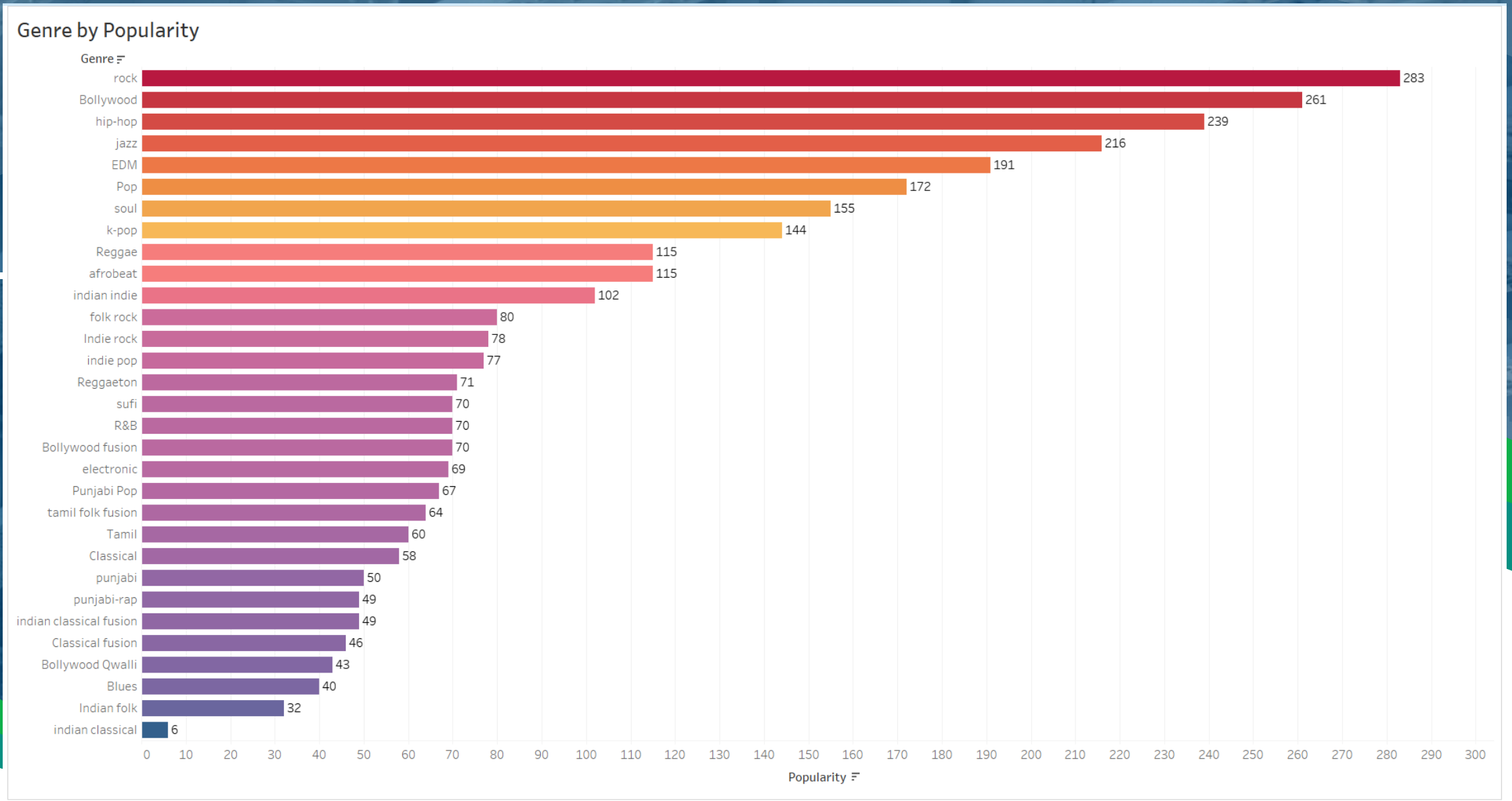
Correlation matrix



Correlation Matrix



Genre By Popularity



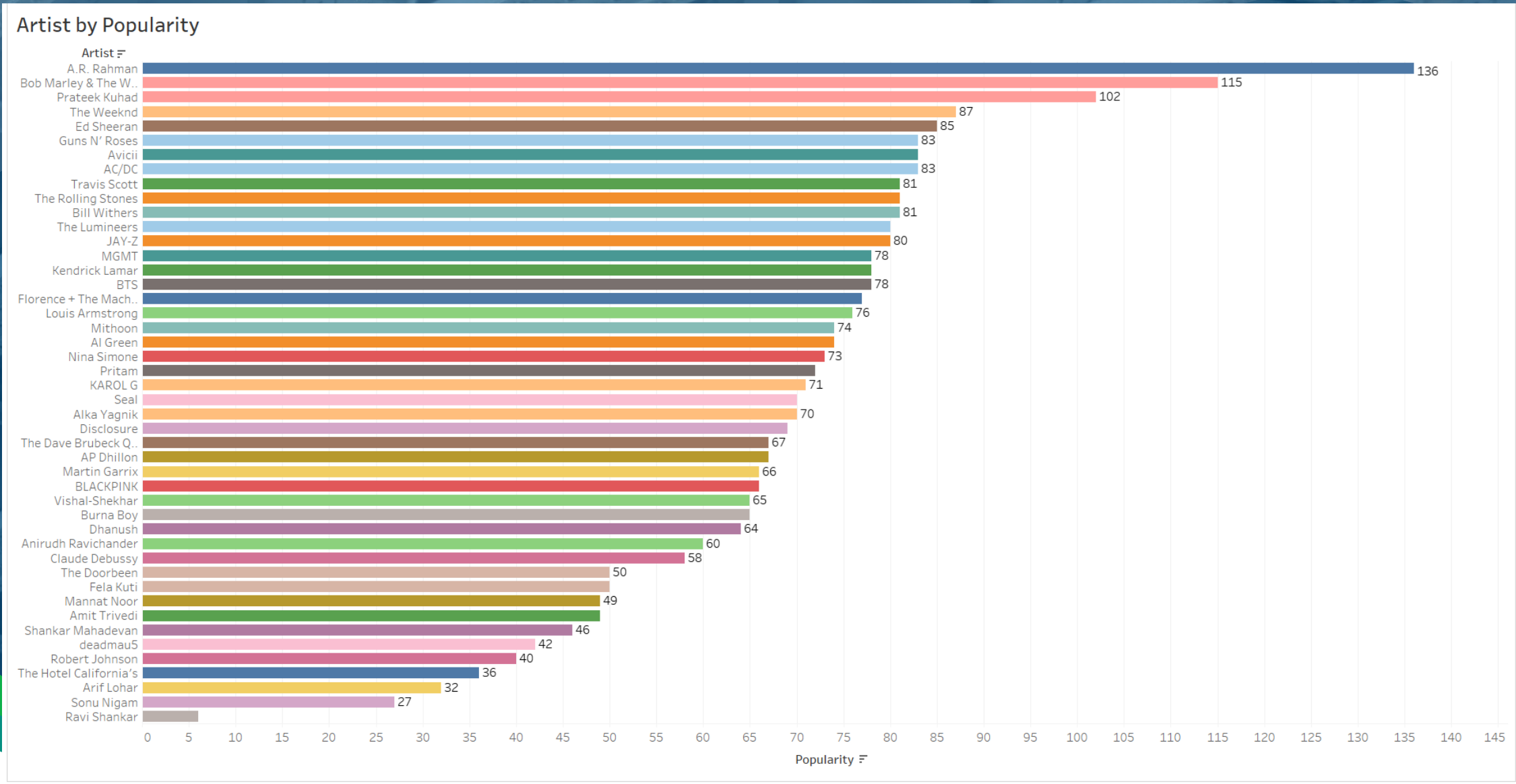
Genre By Popularity

Visualization: Bar Chart (Genre vs. Popularity)

Analysis: Rock is the most popular genre with a score of 283, followed by Bollywood (261), hip-hop (239), and jazz (216). Less popular genres include Indian classical fusion (49) and Bollywood Qawwali (43), indicating niche interest.

Conclusion: Mainstream genres such as rock, Bollywood, and hip-hop attract the largest audiences, while more specialized genres appeal to niche listeners.

Artist By Popularity



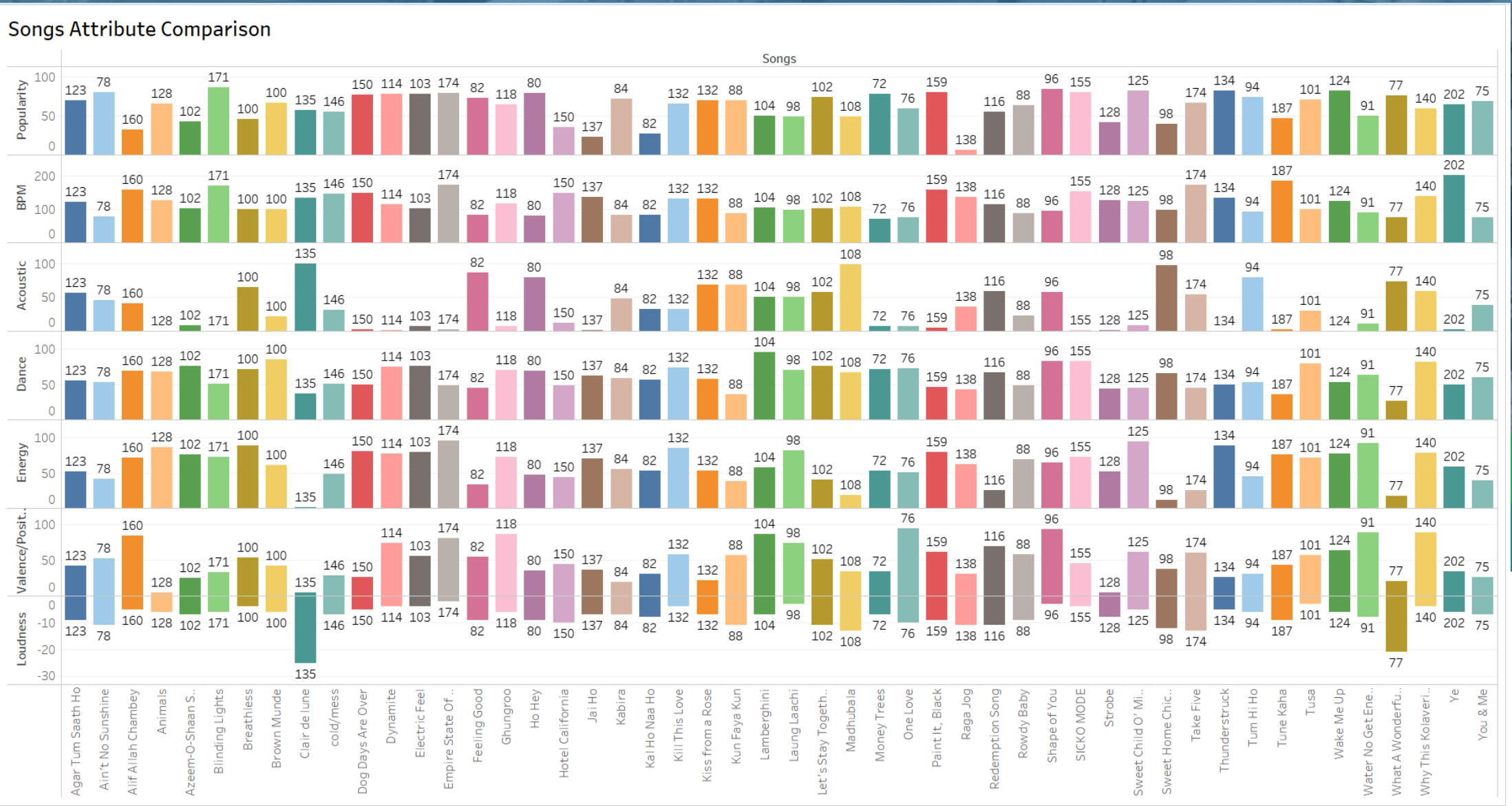
Artist By Popularity

Visualization: Bar Chart (Artist vs. Popularity)

Analysis:A.R. Rahman is the most popular artist, scoring 136, followed by Bob Marley & The Wailers (83) and Prateek Kuhad (81). Artists from diverse genres are represented, reflecting a broad spectrum of listener preferences.

Conclusion: Both international and regional artists are well-received, indicating a mix of global and local music appeal.

Songs Attribute Comparison



Songs Attribute Comparison

- This analysis explores key attributes of various songs, including popularity, BPM (tempo), acousticness, danceability, energy, valence (positivity), and loudness.
- Each attribute is examined to identify trends and insights that can aid in creating targeted playlists based on different audience preferences and listening scenarios.
- By comparing these attributes, we gain a deeper understanding of how each song's characteristics influence its suitability for specific moods or activities.
- The findings offer valuable guidance for designing playlists that align with diverse settings, from energetic gatherings to relaxed environments.

Song vs. Popularity

Overview: This bar chart visualizes the popularity scores for each song.

Observations:

- The highest popularity score is 202 for "You & Me."
- Other high-popularity songs include "Why This Kolaveri?" (140), "Tune Kaha" (140), and "Wake Me Up" (124).
- Songs with lower popularity include "Agar Tum Saath Ho" (123), "Ain't No Sunshine" (78), and "Aaj Phir Jeene Ki Tamanna Hai" (78).
- There is a noticeable variation in popularity across the songs, suggesting that this metric may depend on other factors such as genre, tempo, or emotional tone.

Conclusion: The popularity metric varies widely among songs, with "You & Me" standing out as the most popular. These variations may help in identifying which attributes contribute to higher popularity levels.

Song vs. BPM (Beats Per Minute)

Overview: This graph shows the BPM for each song, which reflects the tempo.

Observations:

- Songs with high BPM include "Dog Days Are Over" (187) and "Why This Kolaveri?" (140).
- Songs with moderate BPM include "Jai Ho" (132), "Shape of You" (125), and "Thunderstruck" (155).
- Lower BPM songs include "Aaj Phir Jeene Ki Tamanna Hai" (123), "Ain't No Sunshine" (78), and "Kiss from a Rose" (104).
- Higher BPM often aligns with energetic and upbeat tracks, while lower BPM is often associated with slower, more mellow songs.

Conclusion: BPM varies significantly, indicating the diversity of song tempos within this dataset. High BPM songs are likely more suitable for energetic settings, while lower BPM tracks might appeal in calm or relaxed scenarios.

Song vs. Acoustic

Overview: This chart represents the acousticness of each song, a measure of how acoustic or organic a song sounds.

Observations:

- Songs like "Dog Days Are Over" (82) and "You & Me" (75) have higher acoustic values, indicating a more organic or live instrumentation feel.
- "Aaj Phir Jeene Ki Tamanna Hai" (123) and "Ain't No Sunshine" (78) have lower acoustic scores, suggesting more electronic or synthetic elements.
- Songs like "Kabira" (132) and "Kiss from a Rose" (132) are on the higher end of the acoustic scale.

Conclusion: The acousticness metric shows varied values across the songs. Songs with higher acoustic scores are generally those with live instruments or natural sounds, while those with lower scores may feature more digital production.

Song vs. Energy

Overview: The energy metric displays the intensity and activity level of each song.

Observations:

- High energy scores are noted for "Dog Days Are Over" (187) and "Why This Kolaveri?" (140).
- Songs with moderate energy include "Empire State of Mind" (88) and "Kiss from a Rose" (104).
- Lower energy scores are observed for "Ain't No Sunshine" (78) and "Aaj Phir Jeene Ki Tamanna Hai" (123).
- Energy scores often align with BPM and danceability, as more energetic songs are usually faster and more rhythmically engaging.

Conclusion: The energy metric suggests the level of excitement a song brings. Higher energy tracks may be ideal for lively environments, while lower energy tracks can offer a more laid-back listening experience.

Song vs. Valence

Overview: This chart measures the positivity or happiness of each song.

Observations:

- High valence scores include "You & Me" (75) and "Tune Kaha" (140), suggesting a cheerful or positive tone.
- Songs with moderate valence scores include "Jai Ho" (132) and "Shape of You" (125).
- Low valence songs include "Ain't No Sunshine" (78) and "Aaj Phir Jeene Ki Tamanna Hai" (123).
- Valence may correlate with danceability and energy, as positive songs are often more upbeat.

Conclusion: Higher valence scores indicate a happier, more positive tone in a song, while lower scores might represent melancholy or introspective themes.

Song vs. Loudness

Overview: This chart displays the loudness level of each song, a measure of overall volume in decibels.

Observations:

- Loud songs include "Why This Kolaveri?" (140) and "Dog Days Are Over" (187), which might be more impactful in energetic settings.
- Songs with moderate loudness include "Shape of You" (125) and "Jai Ho" (132).
- Softer songs include "Ain't No Sunshine" (78) and "Aaj Phir Jeene Ki Tamanna Hai" (123).
- Loudness often correlates with energy and danceability, as louder songs create a more dynamic and engaging listening experience.

Conclusion: Loudness levels vary across the songs, with louder tracks providing more intensity, making them potentially more appealing in settings that require high energy or volume.

Song vs. Dance

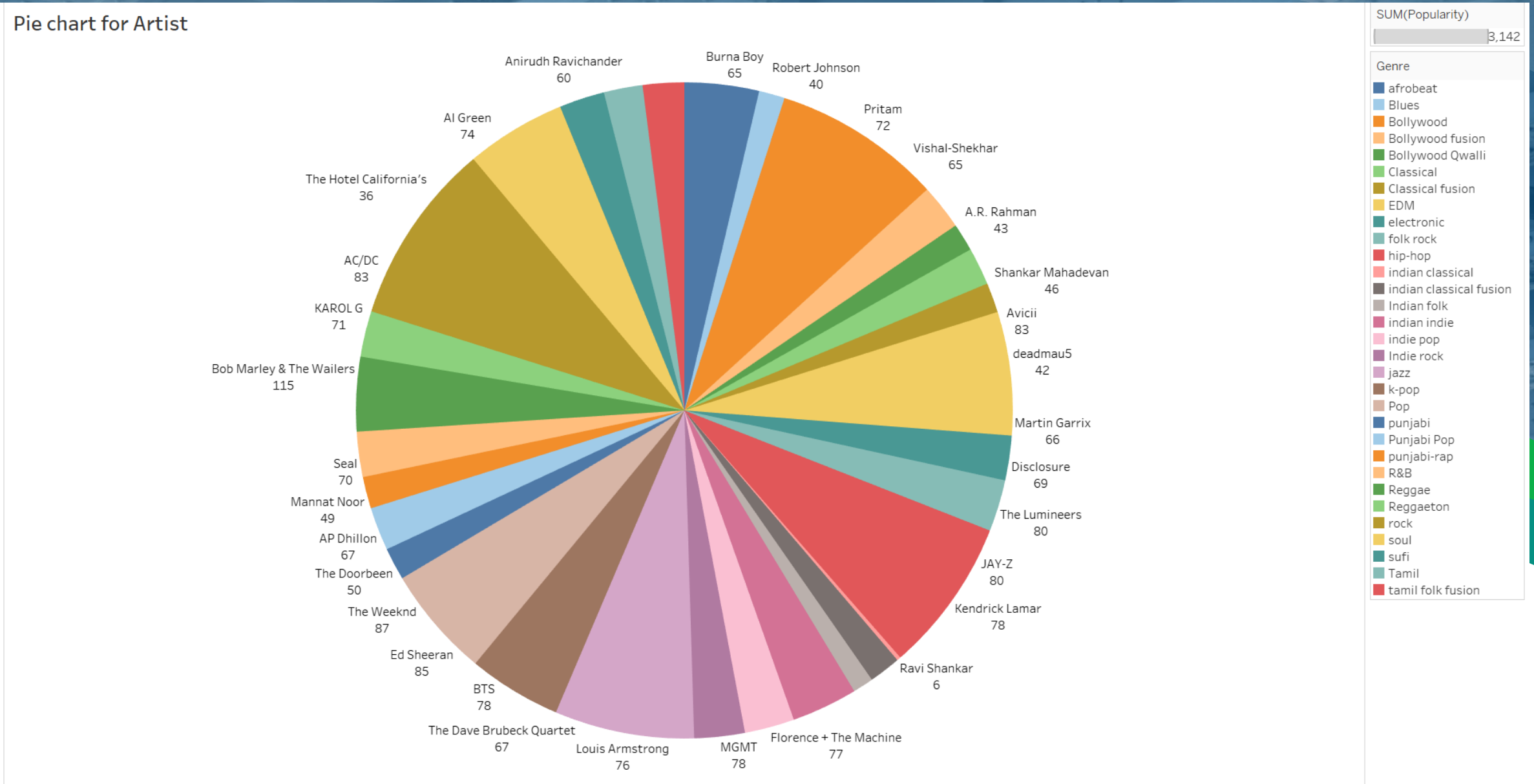
Overview: This bar chart reflects the danceability of each song, a measure of how suitable a track is for dancing.

Observations:

- High danceability scores are observed for "You & Me" (75), "Why This Kolaveri?" (140), and "Tune Kaha" (140).
- Songs with moderate danceability include "Wake Me Up" (124) and "Empire State of Mind" (88).
- Lower danceability scores are seen for "Ain't No Sunshine" (78) and "Aaj Phir Jeene Ki Tamanna Hai" (123).
- Danceability often corresponds with upbeat or rhythmic elements, making these songs more appealing for dance settings.

Conclusion: Songs with higher danceability scores may be favored in dance or energetic environments, while those with lower scores might be better suited for relaxed or listening-focused settings.

Pie Chart for Artist



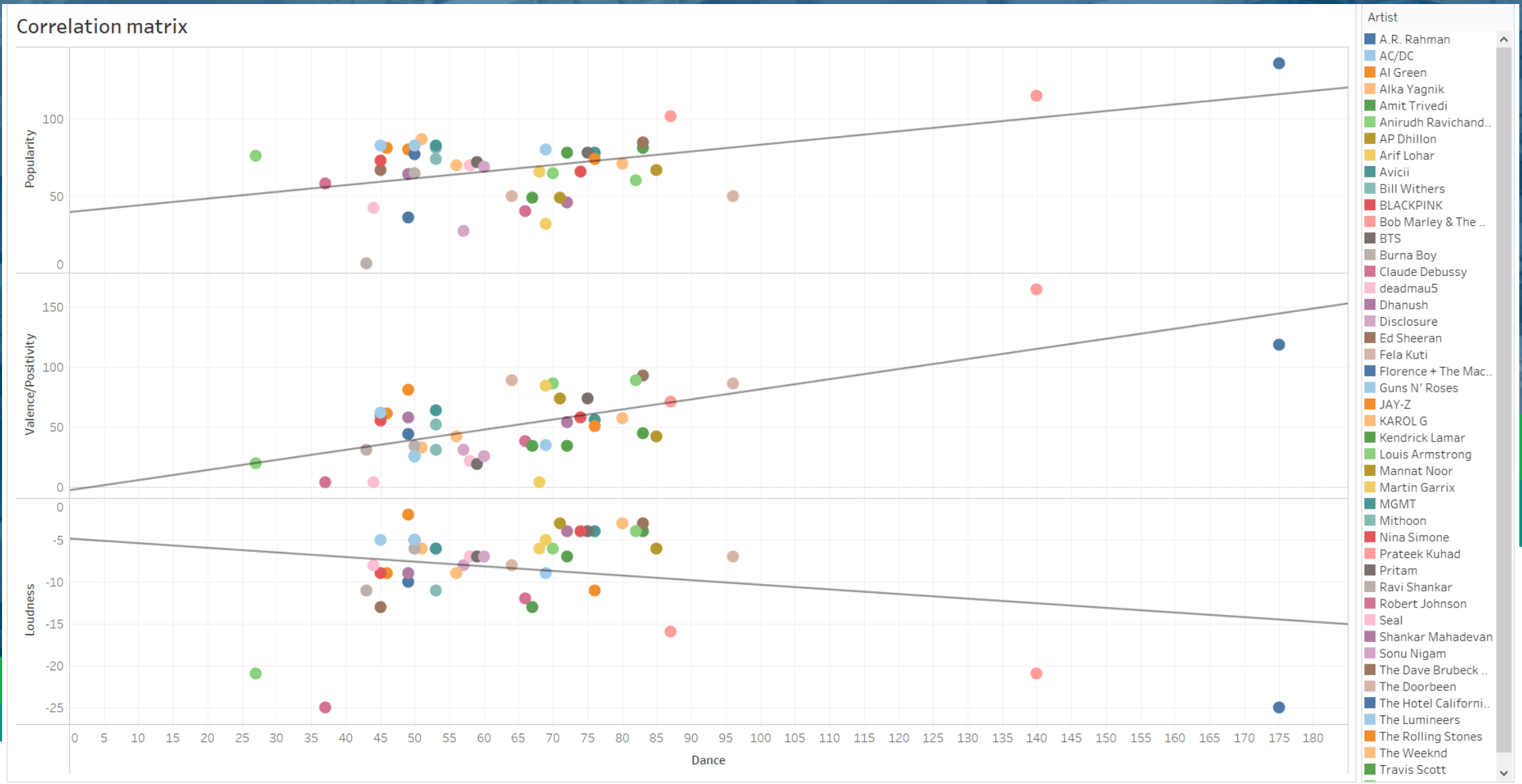
Pie Chart for Artist

The Tableau pie chart visualizes the popularity of various artists on Spotify, where each slice represents an artist, and its size indicates the popularity score.

- **Top Artists**: The most popular artists are **A.R. Rahman (136)**, **Bob Marley & The Wailers (115)**, and **Prateek Kuhad (102)**, indicating they have the largest followings on Spotify.
- **Mid-Range Popularity**: Artists like **BLACKPINK (66)**, **BTS (78)**, and **Louis Armstrong (76)** show moderate popularity, suggesting substantial fanbases without reaching top-tier levels.
- **Low Popularity Artists**: Artists such as **Arif Lohar (32)** and **Anirudh Ravichander (60)** have smaller slices, indicating more niche or region-specific popularity.

Correlation matrix

Dance vs. popularity vs. valence vs. loudness



Correlation matrix

Dance vs. popularity vs. valence vs. loudness

- Dance vs. Loudness:
  R-squared: 0.064 (low, indicating weak explanatory power).
  p-value: 0.089 (not significant at $p \leq 0.05$, suggesting weak evidence for a relationship).
  Trend: Slight negative trend; as danceability increases, loudness shows a minor decrease.

- Dance vs. Popularity:
  R-squared: 0.247 (moderate explanatory power).
  p-value: 0.0004 (significant, strong evidence of a relationship).
  Trend: Positive trend; higher danceability is associated with higher popularity.

- Dance vs. Valence/Positivity:
  R-squared: 0.466 (good explanatory power).
  p-value: < 0.0001 (highly significant).
  Trend: Strong positive trend; higher danceability correlates with higher valence/positivity.

Overall, danceability shows significant positive relationships with popularity and valence/positivity, while the relationship with loudness is weaker and not statistically significant.
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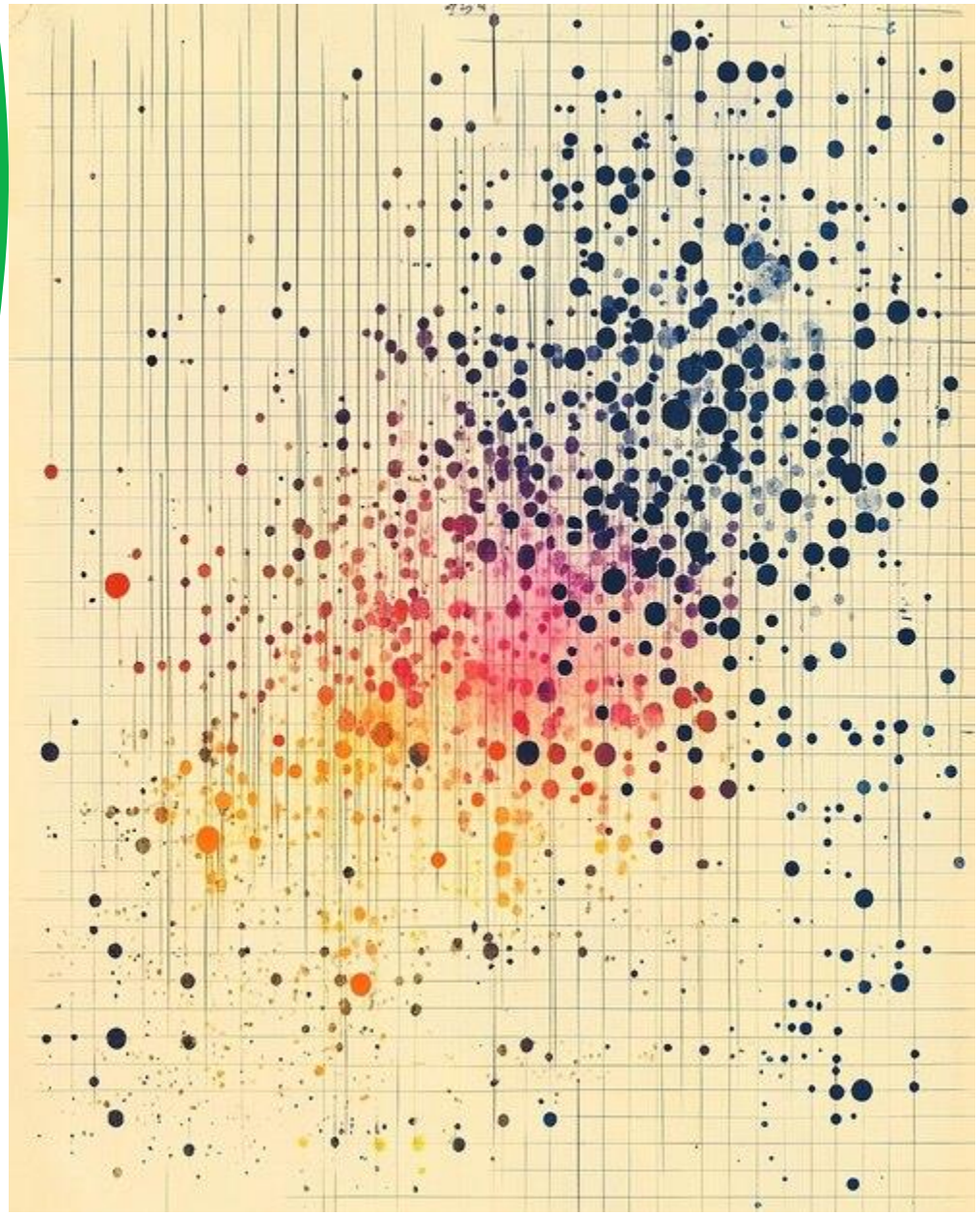
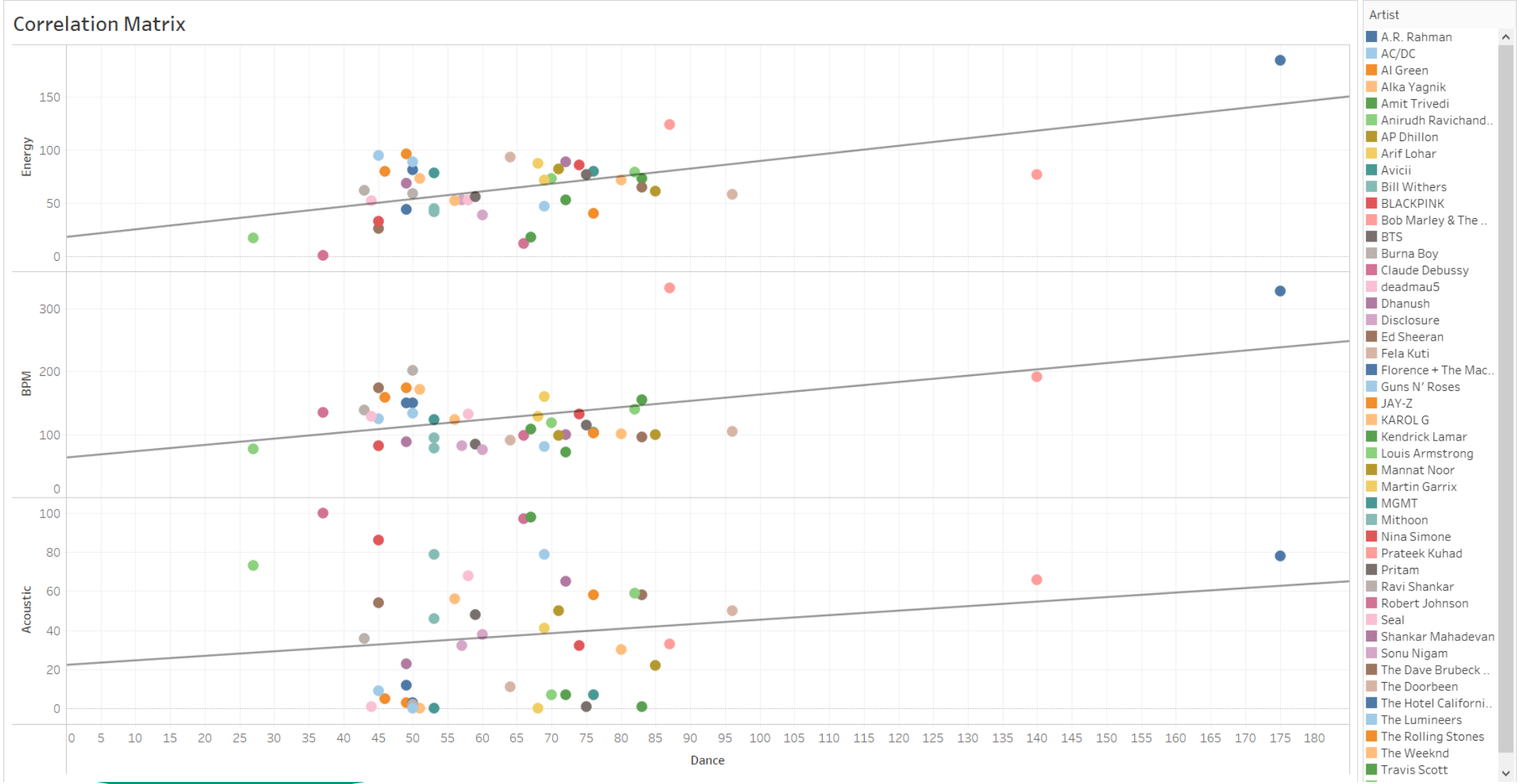
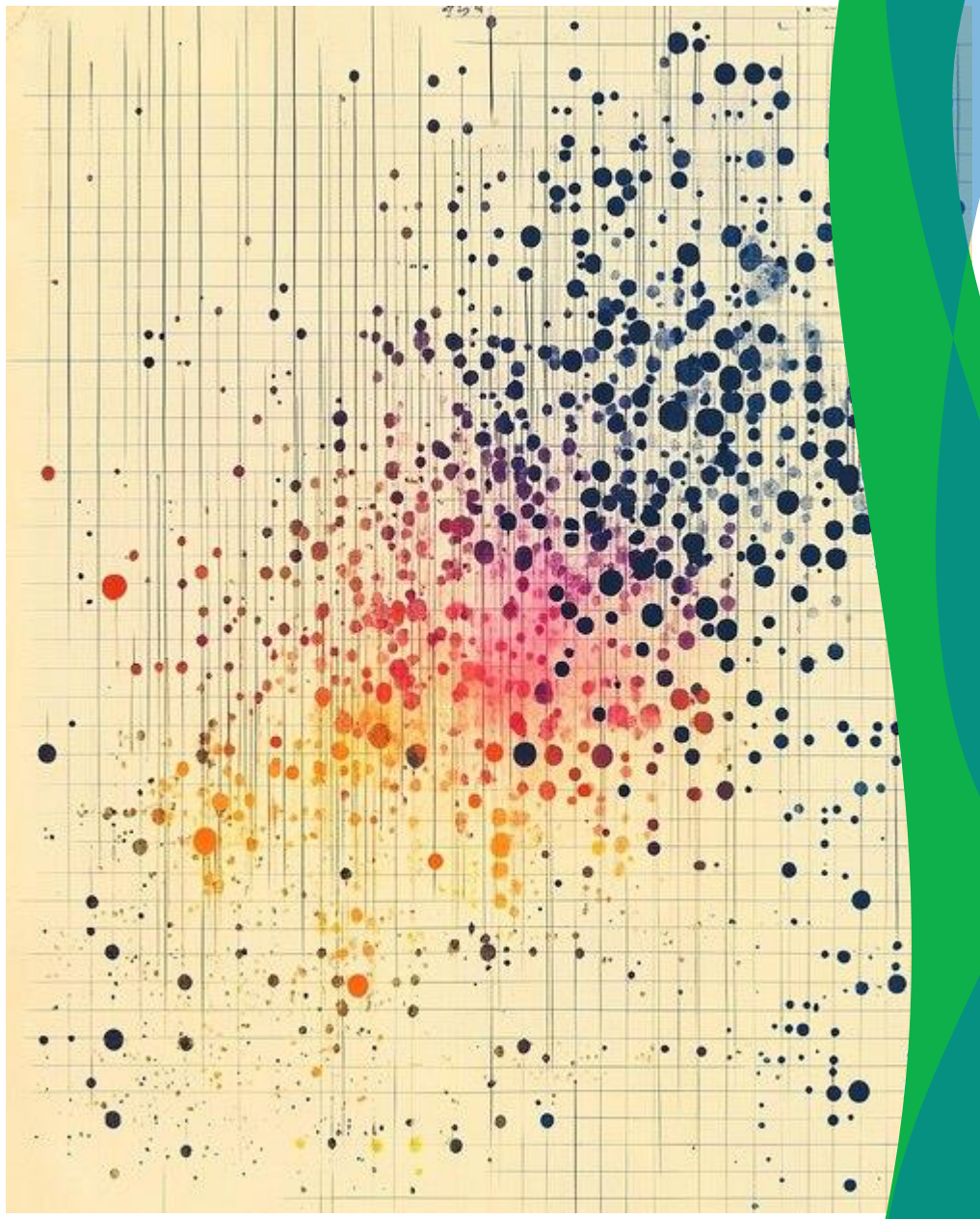


Correlation matrix

Dance vs. Acoustic vs. BPM vs. Energy





Correlation matrix

Dance vs. Acoustic vs. BPM vs. Energy

- Dance vs. Acoustic:
  R-squared: 0.034 (very low, indicating weak explanatory power).
  p-value: 0.220 (not significant, suggesting no strong evidence of a relationship).
  Trend: Very slight positive trend; not statistically significant.

- Dance vs. BPM:
  R-squared: 0.214 (moderate explanatory power).
  p-value: 0.0012 (significant, indicating a meaningful relationship).
  Trend: Positive trend; as danceability increases, BPM tends to rise.

- Dance vs. Energy:
  R-squared: 0.342 (good explanatory power).
  p-value: < 0.0001 (highly significant).
  Trend: Strong positive trend; higher danceability is associated with higher energy levels.

Summary:
The models show that **danceability** has a significant positive correlation with **BPM** and **energy**, while the relationship with **acoustic** characteristics is weak and statistically insignificant.