

Spotify Top Hits 1999–2019 Visualization Project

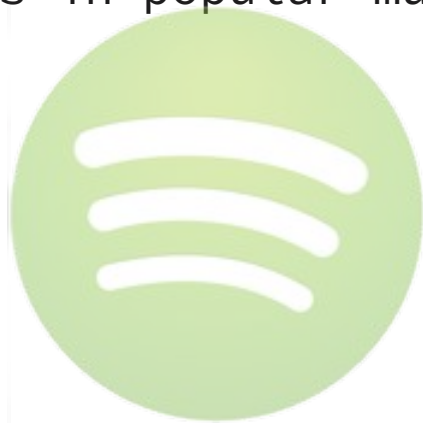


An Exploration to Music Trends

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Project Purpose

- Analyze and visualize data of Spotify top hits from 1999 to 2019.
- Provide insight into music trends over two decades.
- Facilitate interactive data exploration to discover patterns in popular music.



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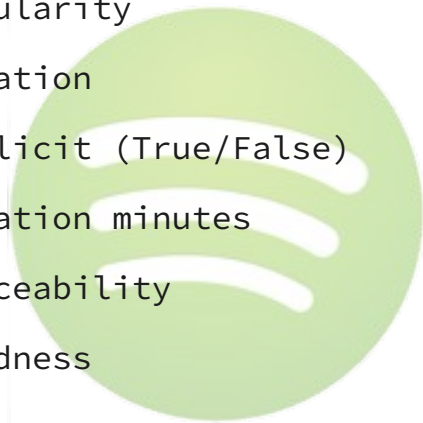
Dataset Description

-Data Source: Kaggle

-Number of Records: 1500+

-Key Fields:

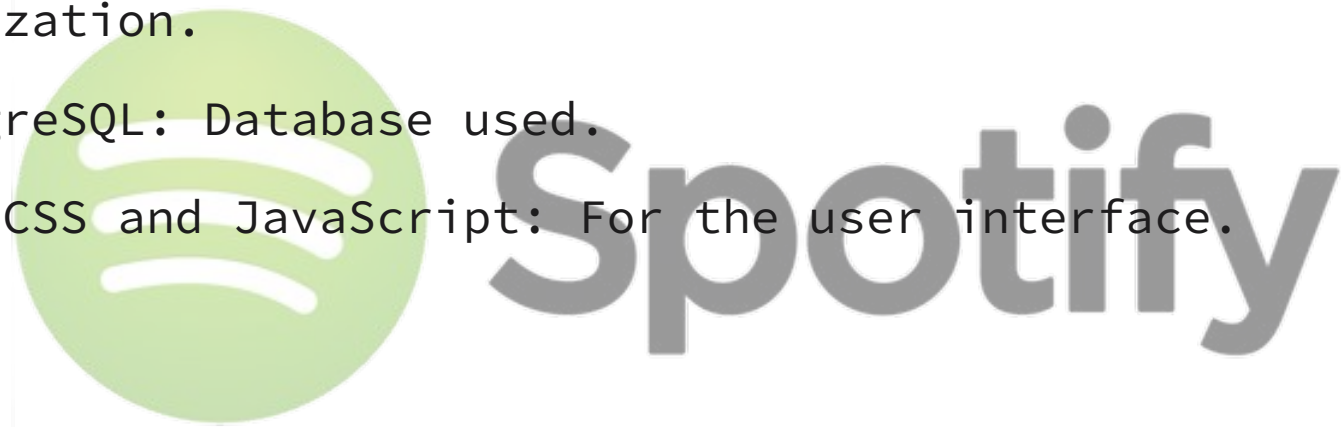
- Song Title
- Artist
- Year
- Popularity
- Duration
- Explicit (True/False)
- Duration minutes
- Danceability
- Loudness



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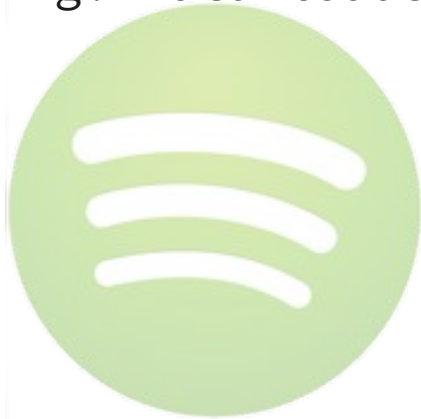
Tools and Technologies

- Python: Main programming language.
- Flask: Back-end framework.
- SQLAlchemy: ORM for database interaction.
- D3.js, Plotly and Charts.js: Libraries for data visualization.
- PostgreSQL: Database used.
- HTML/CSS and JavaScript: For the user interface.



ETL Process

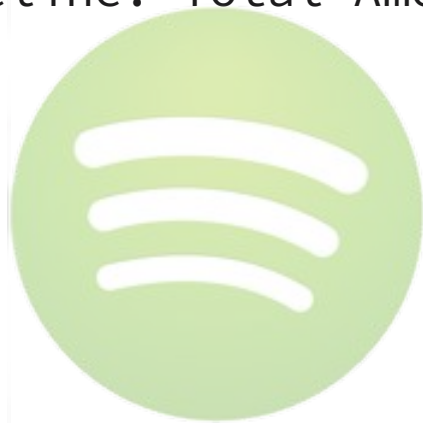
1. Extraction: Data extracted from the original source (Kaggle).
2. Transformation: Data cleaning and preparation using Pandas.
3. Loading: Data loaded into the PostgreSQL database.



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Visualization 1-6:

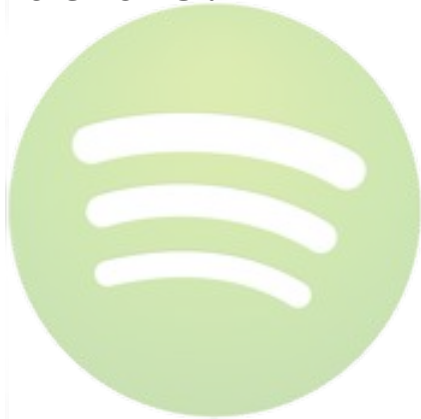
- Danceability VS Popularity
- Duration VS Popularity
- Loudness VS Popularity
- Explicit Content
- Songs Per Year
- Timeline: Total Amount of Songs Per Year & Top Ten



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Challenges

- Integrating Multiple Tools: Combining different libraries and frameworks.
- Not seen in class Library: Charts.js.
- Interactivity: Creating interactive and responsive visualizations.



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Solutions

- Integration: Using Flask and SQLAlchemy for smooth integration.
- Data Optimization: Data transformation and cleaning for our specific use.
- Visualization Libraries: Using D3.js for interactive and attractive visualizations.



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Conclusions

- How this analysis enhances understanding of music trends.
- Provides valuable insights for record labels, producers, and artists to understand what resonates with audiences.
- Reflects broader cultural and social trends through the lens of popular music.
- Helps in shaping marketing strategies based on the popularity trends and audience preferences.



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Q&A and References

- Kaggle Dataset: <https://www.kaggle.com/datasets/paradisejoy/top-hits-spotify-from-20002019>
- Flask Documentation: <https://flask.palletsprojects.com>
- SQLAlchemy Documentation: <https://www.sqlalchemy.org>
- Pandas Documentation: <https://pandas.pydata.org>
- GitHub: <https://github.com/AngelesVillagrana/Project3>

