Spotify Streaming Analytics Dashboard

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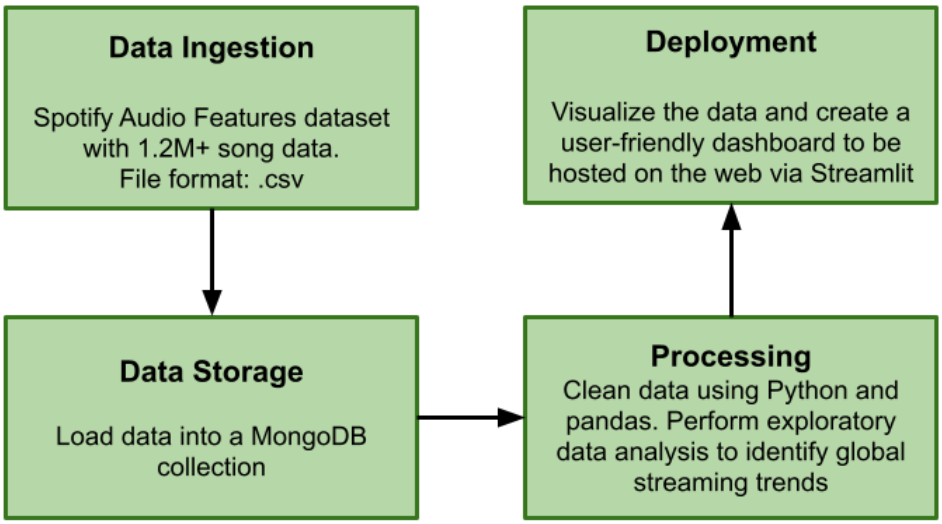
ABSTRACT

The goal of this project was to analyze music streaming trends on Spotify and create an interactive dashboard for audiophiles to deep dive into the up and coming audio trends. I used Spotify Web API to build the dataset with track names, artists and audio features. After cleaning the data and performing EDA, the processed data was used to build a Dashboard Application using Streamlit to visualize the top songs and audio trends in each feature category based on the release year. The application was then hosted on Streamlit Cloud for easy public access.

DESIGN

Spotify is a Swedish audio streaming company that has taken over globally, with 33 million monthly active users, including 188 million paying subscribers, as of June 2022. The company offers a developer-friendly Web API with easy access to streaming data metrics. This project is focused on the Audio Features APIs available for getting audio metrics such as Danceability, Energy, Speechiness etc for every track. Building a data-pipeline and dashboard to visualize the audio trends on Spotify would help music enthusiasts, audiophiles and music creators gain insights to latest trends in the music industry.

Data Pipeline:



DATA

Spotify Audio Features dataset:

- Spotify 1.2+M Songs dataset : The Kaggle dataset is used as primary data source which already has **1.2+M** song data points pulled using the Spotify Web API. Format: .csv

Spotify Web API:

- This web API is used for pull additional data such as track genres, popularity etc.

TOOLS

- *Data Acquisition*: Spotipy (Python library for Spotify Web API)
- *Data Storage*: MongoDB, PyMongo
- *Data Cleaning and Analysis*: Pandas, Numpy
- *Data Visualization*: Matplotlib, Plotly
- *Web Application*: Streamlit
- *Cloud Deployment*: Streamlit Cloud

COMMUNICATIONx

- A slidedeck and Jupyter notebook code are included along with this write-up as part of the project on Github
- The Spotify Streaming Analytics Dashboard has also been hosted online for users