Spotify Data Analysis Project Report

1. Motivation

The motivation for this project was to look at my personal music listening habits and preferences. By analyzing data from my Spotify account, I tried to understand how my listening behavior changes by time, discover patterns related to artists and genres and find recommendations for similar music with my preferences.

2. Data Source

The data used in this project was sourced directly from Spotify with Web API. The API provides detailed information about:

- Recently played tracks (the track name, artist, playing time).
- Top artists and genres based on my listening history.
- Song recommendations based on tracks and artists.

3. Data Analysis

Data Extraction

- Fetched recently played tracks and their timestamps.

Retrieved the top artists, including their popularity scores and associated genres.

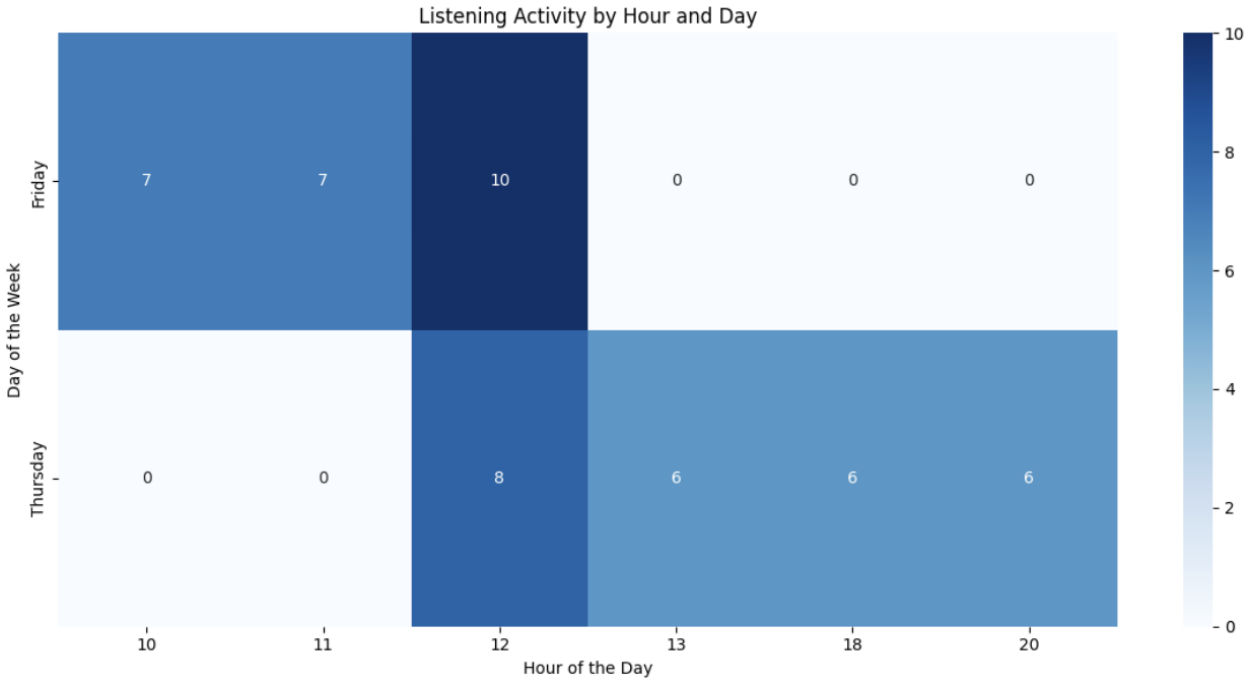
- Obtained song recommendations based on seed tracks and artists.

Data Cleaning and Transformation

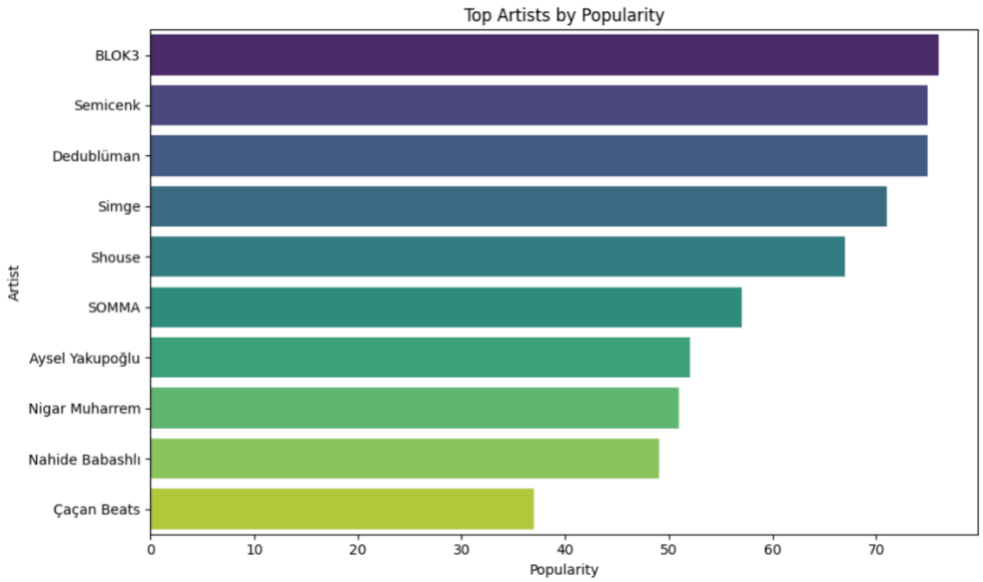
- Converted timestamps into human-readable formats and extracted day and hour information.
- Combined artist genres and collected data for visualization.

Visualization

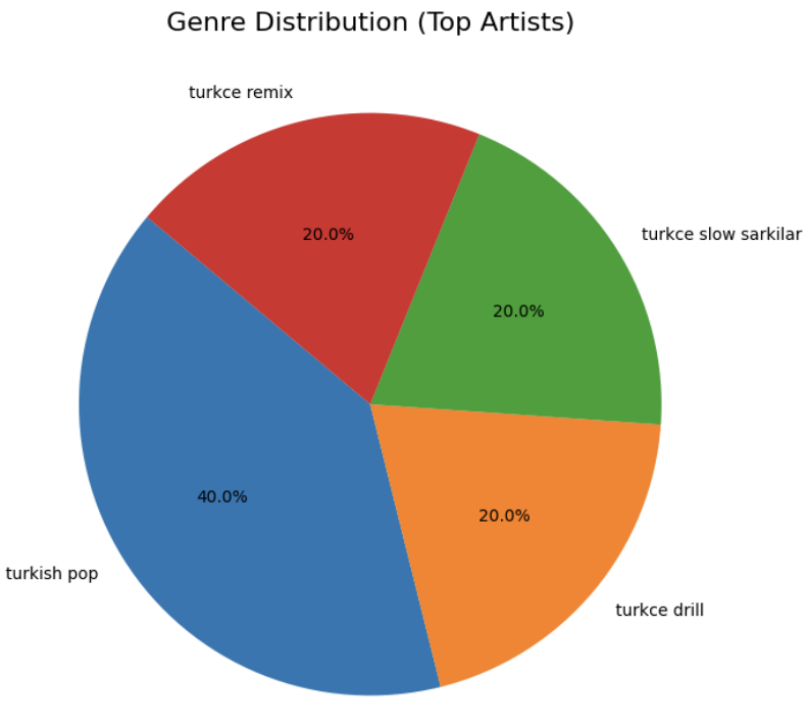
Listening Heatmap: Displayed listening activity by hour and day of the week.



Bar Chart of Top Artists: Illustrated the popularity of top artists.



Genre Distribution Pie Chart: Showed the proportional distribution of genres among top artists.



Tools used for visualization included Matplotlib and Seaborn.

4. Findings

Listening Patterns

- My peak listening activity occurred during specific hours (e.g., 12 PM and 6 PM on weekdays).
- I was most actively listening in friday.

Top Artists

- My most popular artists included Semicenk, BLOK3, and Dedublüman.
- These artists had high popularity scores, according to mainstream trends.

Genre Preferences

- Turkish Pop constituted the largest portion of my top genres, followed by Turkish Drill and Remixes.

Song Recommendations

- The Spotify recommendation engine could not provide relevant suggestions based on my top artists and tracks, demonstrating its ability to align with my preferences.

5. Limitations and Future Work

Limitations

Data Scope: The analysis focused on short-term listening history (last four weeks). Expanding the scope to medium- or long-term data could provide better view.

Feature Limitations: The recommendations were constrained to seed tracks and artists. Exploring additional parameters could enrich the analysis.

Future Work

Enhanced Analysis: Incorporate audio features like energy and tempo for a deeper understanding of preferences.

Longitudinal Study: Compare listening patterns over different seasons or years to identify shifts in preferences.

Interactive Dashboard: Build a dynamic dashboard to visualize data in real time using tools like Plotly or Dash.