**Spotify Songs-2024 Data Analysis**

Dataset:- https://www.kaggle.com/datasets/nelgiriyewithana/most-streamed-spotify-songs-2024

### **General Guidelines**

* Ensure you use the "latin-1" encoding when reading the CSV file to handle special characters correctly.
* Handle missing values thoughtfully; explain your approach and justify the chosen method (e.g., mean/median imputation, removal of missing entries, etc.).
* Convert date columns to datetime format and extract relevant features, such as the year, to facilitate analysis.
* Clearly document your analysis steps and the rationale behind your decisions.
* Ensure your code is well-organized, commented, and adheres to best practices.
* Present your findings in a clear, concise manner, using visual aids and explanations where necessary.
* Submit Google drive Folder Link which includes both your .ipynb file along with summary pdf.

### **Easy Questions**

1. **Basic Descriptive Statistics:**
   * What is the average Spotify Streams count for all tracks in the dataset?
   * Calculate the median Shazam Counts.
   * Find the mode of the All Time Rank column.
2. **Data Filtering:**
   * List all the tracks that have an Explicit Track value of 1.
   * Calculate the average Spotify Streams count for tracks released in 2024.

### **Intermediate Questions**

1. **Aggregation and Grouping:**
   * Calculate the total Spotify Streams for each artist.
   * Find the artist with the highest average Track Score.
   * Find the artist with the highest total Deezer Playlist Reach.
2. **Data Visualization:**
   * Create a bar chart showing the top 10 tracks by Spotify Streams.
   * Plot a bar chart of the top 5 tracks by Shazam Counts.
3. **Conditional Operations:**
   * Identify tracks that have more than 1,000,000,000 Spotify Streams and more than 10,000,000 Shazam Counts.

### **Advanced Questions**

1. **Advanced Aggregation and Complex Queries:**
   * Which artist has the highest combined count of Spotify, Amazon, and Pandora streams?
   * Calculate the correlation between Spotify Streams and Spotify Playlist Reach.
2. **Scenario-Based Analysis:**
   * A music production company wants to promote tracks that are popular on multiple platforms. Identify tracks that are in the top 10% for both Spotify Streams and Pandora Streams.