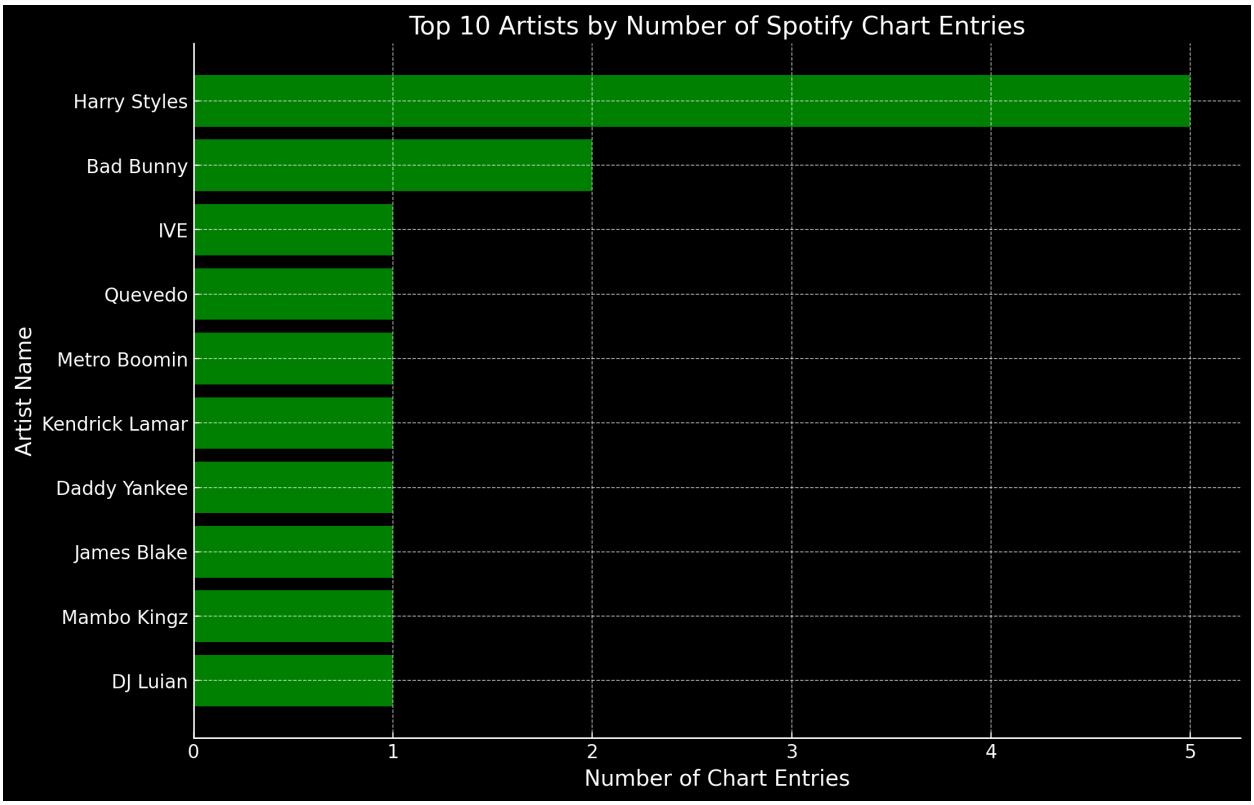
#1. How do the top 10 artists rank in terms of their popularity on Spotify, as evidenced by their chart entries, and what does this imply about their market penetration and listener engagement?

```
#Rank TOP 10 artists by the number of tracks in Spotify charts:
SELECT
   ar.artist_id,
   ar.artist_name,
   COUNT(s.spotify_id) AS spotify_chart_entries,
   RANK() OVER (ORDER BY COUNT(s.spotify_id) DESC) AS artist_rank
FROM
   Artist ar
JOIN
   `Release` `r` ON ar.artist_id = `r`.artist_id
JOIN
   Track t ON `r`.track_id = t.track_id
JOIN
   Spotify s ON t.track_id = s.track_id AND s.in_spotify_charts = 1
GROUP BY
   ar.artist_id, ar.artist_name
ORDER BY
   spotify_chart_entries DESC
LIMIT 10;
```

artist_id	artist_name	spotify_chart_entries	artist_rank
18	Harry Styles	5	1
6	Bad Bunny	2	2
11	Quevedo	1	3
40	Metro Boomin	1	3
117	Kendrick Lamar	1	3
168	Daddy Yankee	1	3
216	James Blake	1	3
239	Mambo Kingz	1	3
240	DJ Luian	1	3
241	Anuel Aa	1	3



#2.Which artists demonstrate the most energetic and danceable tracks on average, and how prominently do these attributes feature in their presence within Spotify playlists?

```
SELECT
   ar.artist_name,
   AVG(t.`energy_%`) AS average_energy,
   AVG(t.`danceability_%`) AS average_danceability,
   COUNT(s.spotify_id) AS playlist_frequency
FROM
   Artist ar
JOIN
   `Release` r ON ar.artist_id = r.artist_id
JOIN
   Track t ON r.track_id = t.track_id
JOIN
   Spotify s ON t.track_id = s.track_id
WHERE
   s.in_spotify_playlists > 0
GROUP BY
   ar.artist_name
```

```
HAVING
   AVG(t.`energy_%`) > 50 AND AVG(t.`danceability_%`) > 50
ORDER BY
   playlist_frequency DESC
   limit 10;
```

artist_name	average_energy	average_danceabil...	playlist_frequen...
The Weeknd	63.5000	60.5600	50
Bad Bunny	69.1250	74.4250	40
Taylor Swift	55.1579	59.9737	38
Harry Styles	54.5000	60.5833	24
SZA	53.8261	60.0000	23
Kendrick Lamar	58.3043	66.4348	23
Feid	67.7143	77.4286	21
Drake	54.6842	73.6842	19
Peso Pluma	73.3750	74.6250	16
21 Savage	57.9286	73.4286	14

#3. Which artist has the greatest number of tracks across multiple platforms and which of his tracks are most prominent across major streaming platforms, indicating the artist's universal appeal and potential areas for targeted promotion?

```
#Artist with the greatest number of tracks across multiple platforms along with his most popular tracks
SELECT
   ar.artist_id,
   ar.artist_name,
   t.track_name,
   (IFNULL(s.spotify_count, 0) + IFNULL(a.apple_count, 0) + IFNULL(d.deezer_count, 0)) AS total_platform_count
FROM
   (SELECT
      `r`.artist_id,
      COUNT(DISTINCT `r`.track_id) AS track_count
    FROM
      `Release` `r`
    JOIN Spotify s ON `r`.track_id = s.track_id
    JOIN Apple a ON `r`.track_id = a.track_id
    JOIN Deezer d ON `r`.track_id = d.track_id
    GROUP BY
```

```
        `r`.artist_id
    ORDER BY
        track_count DESC
    LIMIT 1) AS top_artist
JOIN
    Artist ar ON top_artist.artist_id = ar.artist_id
JOIN
    `Release` `r` ON ar.artist_id = `r`.artist_id
JOIN
    Track t ON `r`.track_id = t.track_id
LEFT JOIN
    (SELECT track_id, COUNT(*) AS spotify_count FROM Spotify GROUP BY track_id) s ON
t.track_id = s.track_id
LEFT JOIN
    (SELECT track_id, COUNT(*) AS apple_count FROM Apple GROUP BY track_id) a ON t.track_id
= a.track_id
LEFT JOIN
    (SELECT track_id, COUNT(*) AS deezer_count FROM Deezer GROUP BY track_id) d ON
t.track_id = d.track_id
ORDER BY
    total_platform_count DESC
LIMIT 10;
```

artist_id	artist_name	track_name	total_platform_count
6	Bad Bunny	WHERE SHE GOES	3
6	Bad Bunny	un x100to	3
6	Bad Bunny	MOJABI GHOST	3
6	Bad Bunny	Me Porto Bonito	3
6	Bad Bunny	Coco Chanel	3
6	Bad Bunny	Titi Me Preguntâ€¦	3
6	Bad Bunny	La Jumpa	3
6	Bad Bunny	Efecto	3
6	Bad Bunny	Gato de Noche	3
6	Bad Bunny	Tormenta (feat. Bad Bunny)	3

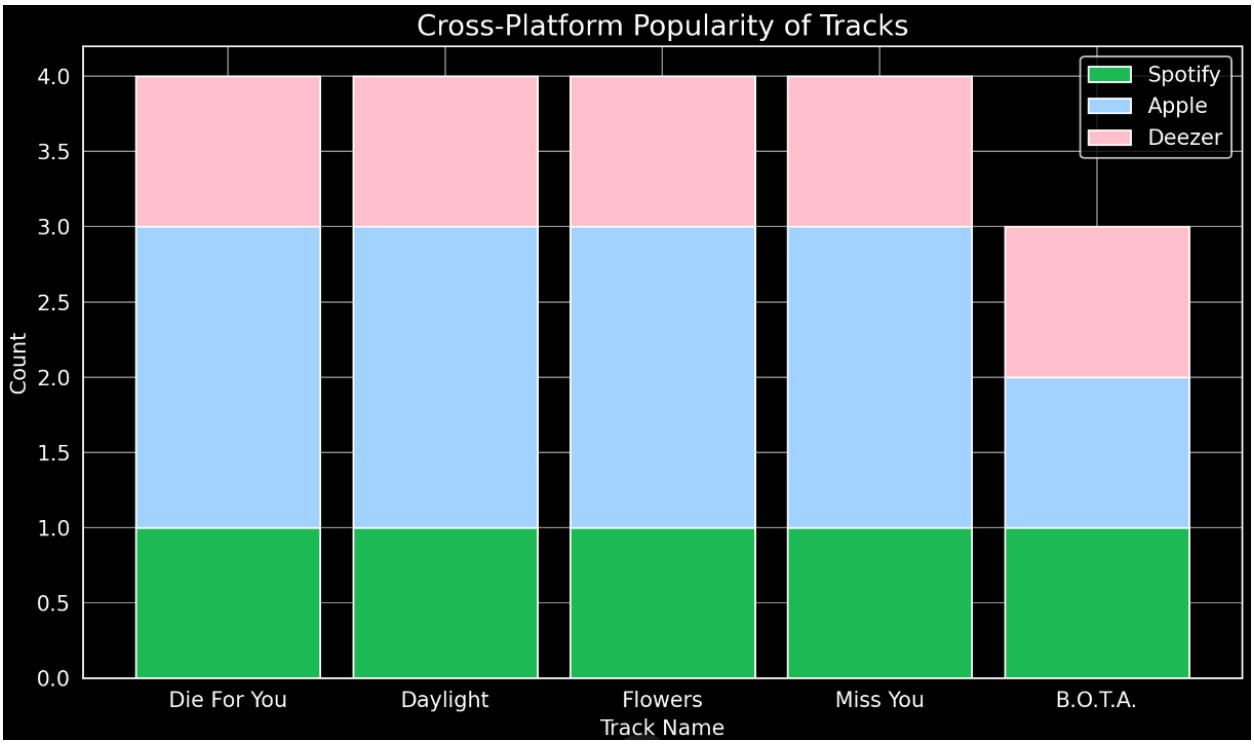
#4. Which tracks demonstrate widespread popularity by featuring in playlists and charts across major music platforms Spotify, Deezer, and Apple Music?

#Which tracks are popular on all platforms- Spotify, Apple and Deezer (appear in playlists and charts)?

```
SELECT
    ar.artist_id,
```

```
    ar.artist_name,
    t.track_name,
    COUNT(DISTINCT s.spotify_id) AS spotify_count,
    COUNT(DISTINCT a.apple_id) AS apple_count,
    COUNT(DISTINCT d.deezer_id) AS deezer_count
FROM
    Artist ar
JOIN
    `Release` r ON ar.artist_id = r.artist_id
JOIN
    Track t ON r.track_id = t.track_id
LEFT JOIN
    Spotify s ON t.track_id = s.track_id AND s.in_spotify_playlists > 1 AND s.in_spotify_charts > 1
LEFT JOIN
    Apple a ON t.track_id = a.track_id AND a.in_apple_playlists > 1 AND a.in_apple_charts > 1
LEFT JOIN
    Deezer d ON t.track_id = d.track_id AND d.in_deezer_playlists > 1 AND d.in_deezer_charts > 1
GROUP BY
    ar.artist_id, ar.artist_name, t.track_id, t.track_name
ORDER BY
    (IFNULL(spotify_count, 0) + IFNULL(apple_count, 0) + IFNULL(deezer_count, 0)) DESC
LIMIT 10;
```

artist_id	artist_name	track_name	spotify_cou...	apple_count	deezer_count
29	The Weeknd	Die For You	1	2	1
18	Harry Styles	Daylight	1	2	1
17	David Kushner	Daylight	1	2	1
16	Miley Cyrus	Flowers	1	2	1
687	Southstar	Miss You	1	2	1
238	Joji	Die For You	1	2	1
301	Robin Schulz	Miss You	1	2	1
302	Oliver Tree	Miss You	1	2	1
419	Lauren Spencer Smith	Flowers	1	2	1
678	Interplanetary Criminal	B.O.T.A. (Baddest Of Them All) -...	1	1	1



#5. How effective are Spotify playlists in generating streams for included tracks on average, indicating the value of playlist placements for artists and record labels?

#What is the average number of streams per playlist inclusion for Spotify?
SELECT
ROUND(AVG(streams / in_spotify_playlists)) AS avg_streams_per_playlist
FROM Spotify WHERE in_spotify_playlists > 0;

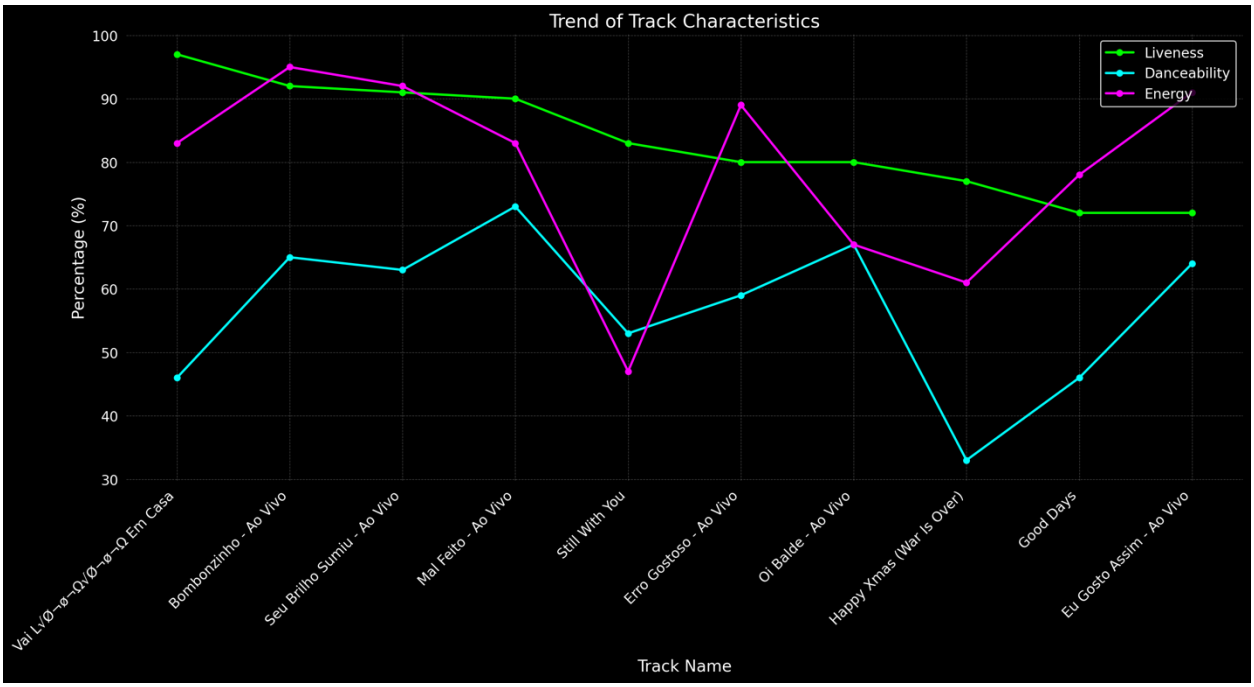
avg_streams_per_play...
184648

#6. Are tracks with higher 'liveness' also characterized by greater 'danceability' and 'energy', indicating a potential trend that could inform music production and targeted audience engagement strategies?

Top 10 tracks with the highest 'liveness' and their corresponding danceability and energy:
SELECT
t.track_id,

```
   t.track_name,
   t.`liveness_%`,
        t.`danceability_%`,
   t.`energy_%`
FROM
   Track t
ORDER BY
   t.`liveness_%` desc
LIMIT 10;
```

track_id	track_name	liveness_%	danceability_%	energy_%
853	Vai L√Ø¬ø¬Ω√Ø¬ø¬Ω Em Casa	97	46	83
103	Bombonzinho - Ao Vivo	92	65	95
686	Seu Brilho Sumiu - Ao Vivo	91	63	92
473	Mal Feito - Ao Vivo	90	73	83
748	Still With You	83	53	47
246	Erro Gostoso - Ao Vivo	80	59	89
558	Oi Balde - Ao Vivo	80	67	67
314	Happy Xmas (War Is Over)	77	33	61
304	Good Days	72	46	78
251	Eu Gosto Assim - Ao Vivo	72	64	91



#7. Which key and mode combination is most common among the top-streamed tracks on Spotify, suggesting potential patterns or preferences in listener enjoyment?

```
#Most common key and mode combination among the top-streamed tracks on Spotify
SELECT
   t.`key`,
   t.mode,
   ROUND(SUM(s.streams) / 1e9, 2) AS total_streams_in_billions
FROM
   Track t
JOIN
   Spotify s ON t.track_id = s.track_id
GROUP BY
   t.`key`, t.mode
ORDER BY
   total_streams_in_billions DESC
LIMIT 1;
```

key	mode	total_streams_in_billions
C#	Major	46.66

#8. In the music industry, timing can be everything. Which month sees the highest number of track releases, and what might this imply about industry trends and release strategies?

```
#Which month of the year typically sees the most track releases?
SELECT
   MONTHNAME(r.released_date) AS release_month_name,
   COUNT(*) AS track_count
FROM
   `Release` r
GROUP BY
   release_month_name
ORDER BY
   track_count DESC;
```

release_month_na...	track_count
May	197
January	188
June	163
March	135
November	134
December	125
April	98
February	97
October	94
July	93
September	90
August	79