

# DATA ANALYSIS AND PLOTS

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In [ ]: import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd
```

```
In [8]: df=pd.read_csv(r"C:\Users\arumu\Downloads\spotify dataset.csv")
df
```

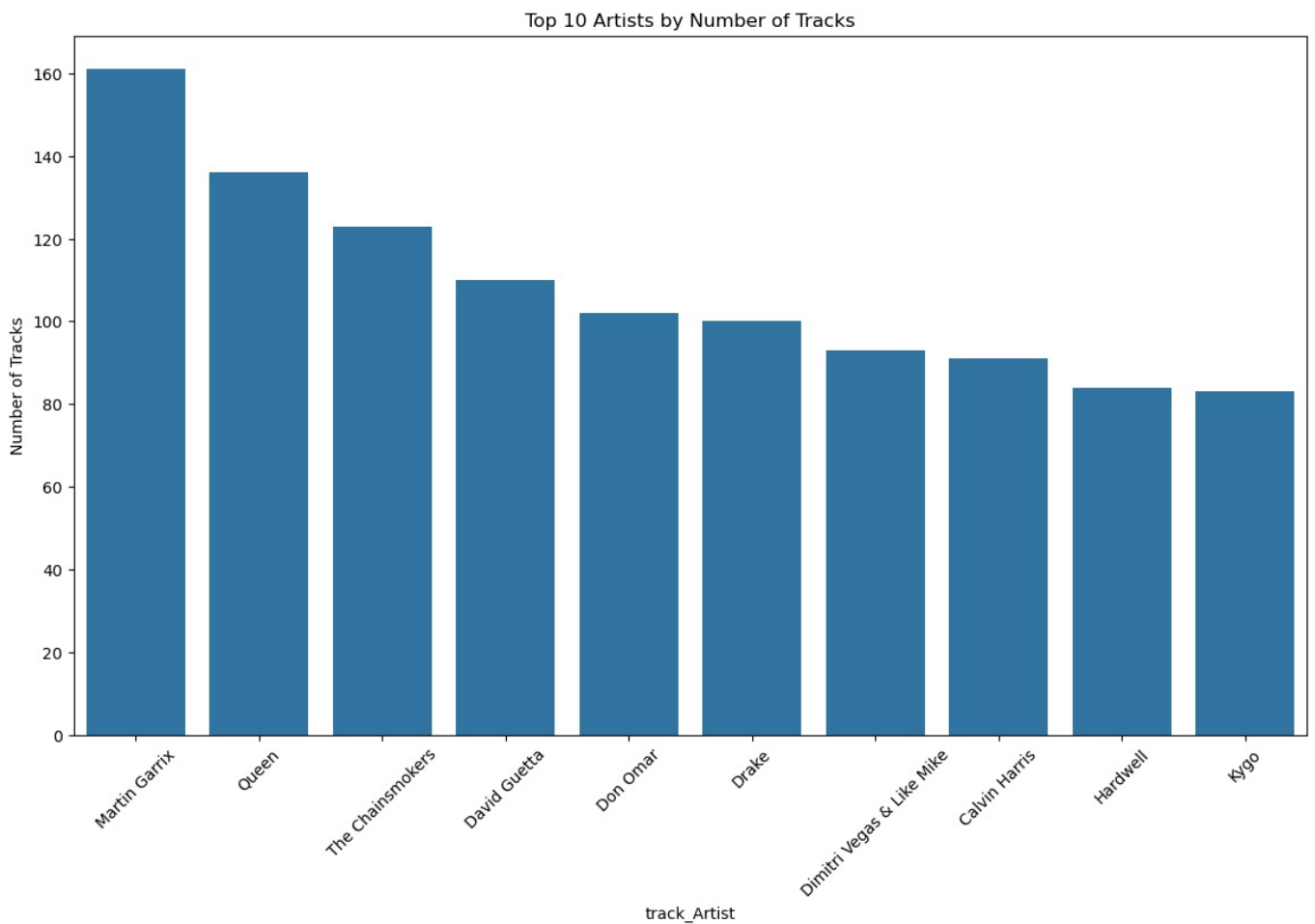
Out[8]:

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	tra
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSI2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHdEmnDE79I	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHIBJLuGdC7	Call You Mine - Keanu Silva Remix	The Chainsmokers	60	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	
4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wIQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	...
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEHqV6sb7JrT	City Of Lights (Vocal Mix)	
32829	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	
32830	7ImMqPP3Q1yfUHvsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxolZO4VzuCa6	Sweet Surrender (Radio Edit)	
32831	2m69mhnfQ1Oq6lGtXuYhgX	Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	
32832	29zWqhca3zt5NsckZqDf6c	Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	

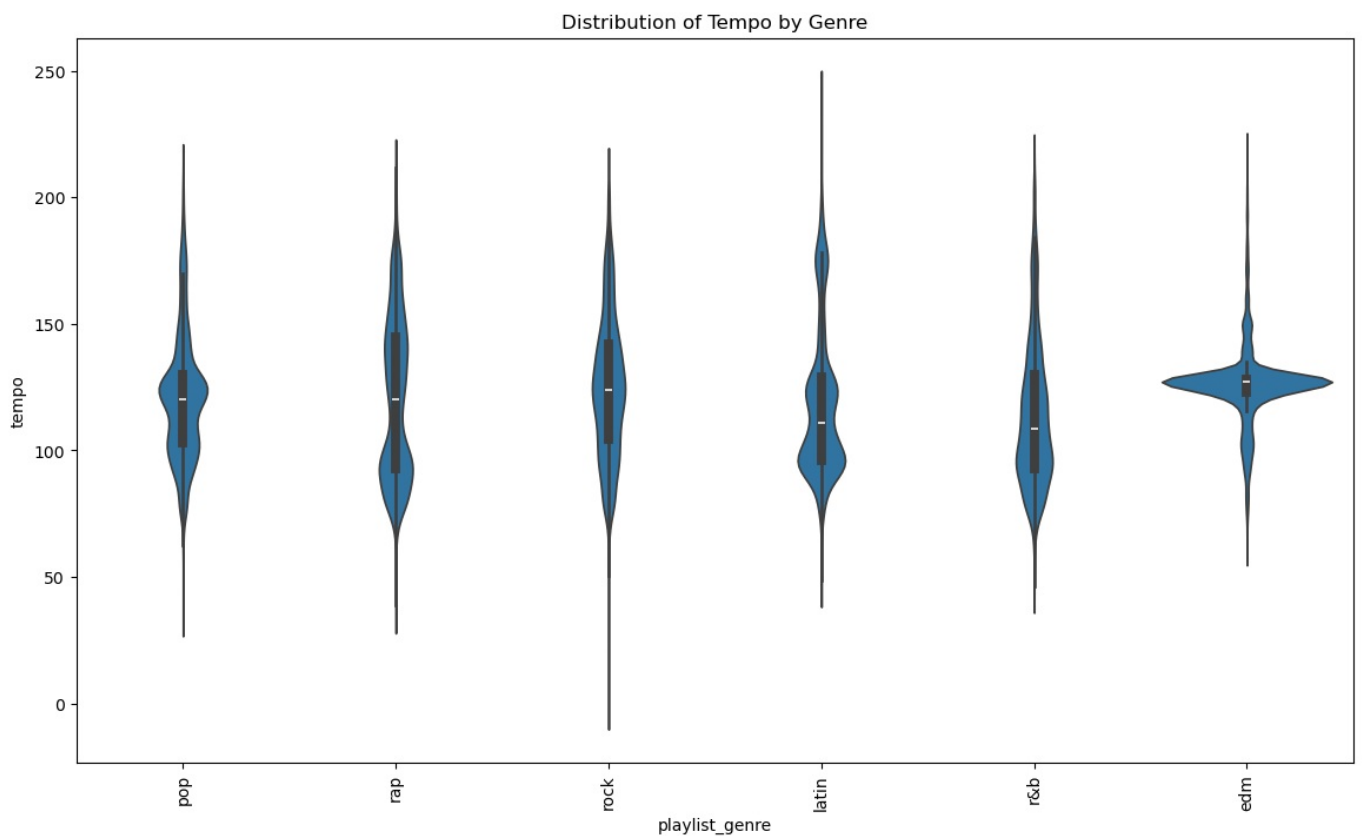
32833 rows × 23 columns



```
In [20]: plt.figure(figsize=(14, 8))
top_artists = df['track_artist'].value_counts().head(10)
sns.barplot(x=top_artists.index, y=top_artists.values)
plt.title('Top 10 Artists by Number of Tracks')
plt.xlabel('track_Artist')
plt.ylabel('Number of Tracks')
plt.xticks(rotation=45)
plt.show()
```

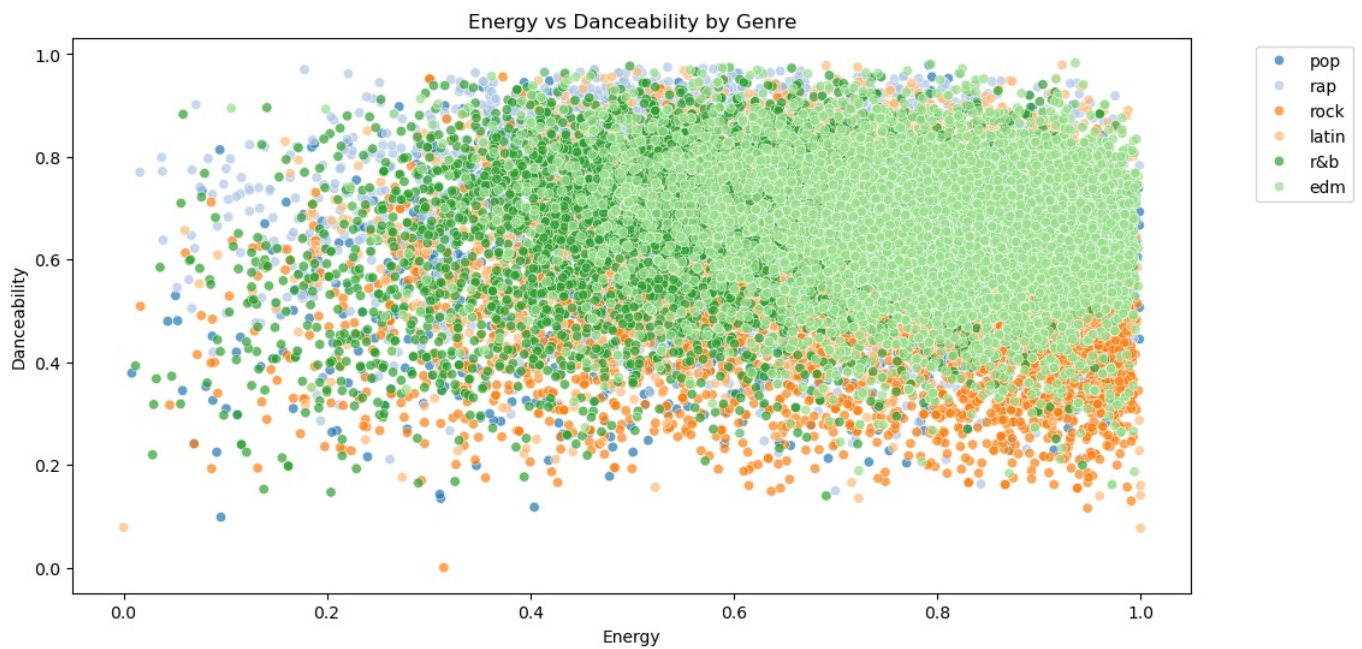


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In [10]: plt.figure(figsize=(14, 8))
sns.violinplot(x='playlist_genre', y='tempo', data=df)
plt.title('Distribution of Tempo by Genre')
plt.xticks(rotation=90)
plt.show()
```

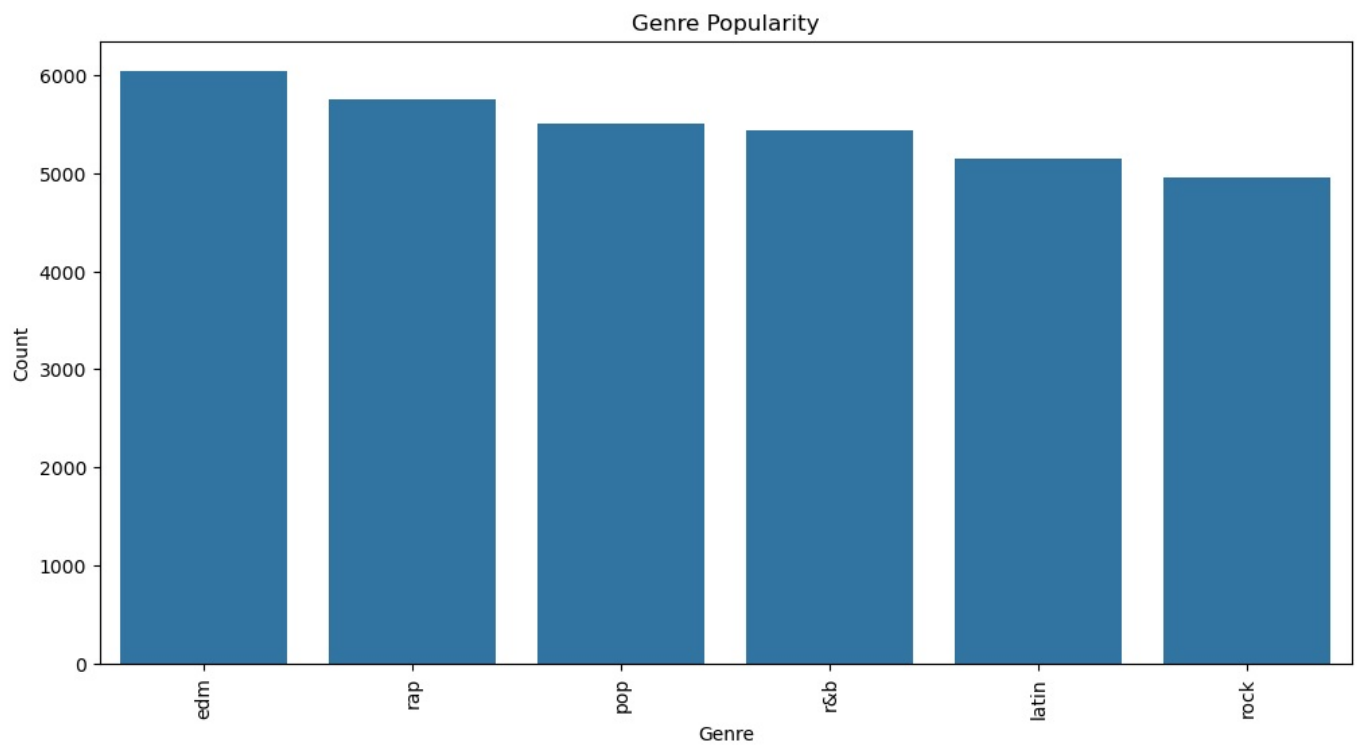


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In [21]: plt.figure(figsize=(12, 6))
sns.scatterplot(data=df, x='energy', y='danceability', hue='playlist_genre', palette='tab20', alpha=0.7)
plt.title('Energy vs Danceability by Genre')
plt.xlabel('Energy')
plt.ylabel('Danceability')
plt.legend(bbox_to_anchor=(1.05, 1), loc='upper left')
```

```
plt.show()
```



```
In [21]: plt.figure(figsize=(12, 6))
genre_count = df['playlist_genre'].value_counts()
sns.barplot(x=genre_count.index, y=genre_count.values)
plt.title('Genre Popularity')
plt.xlabel('Genre')
plt.ylabel('Count')
plt.xticks(rotation=90)
plt.show()
```



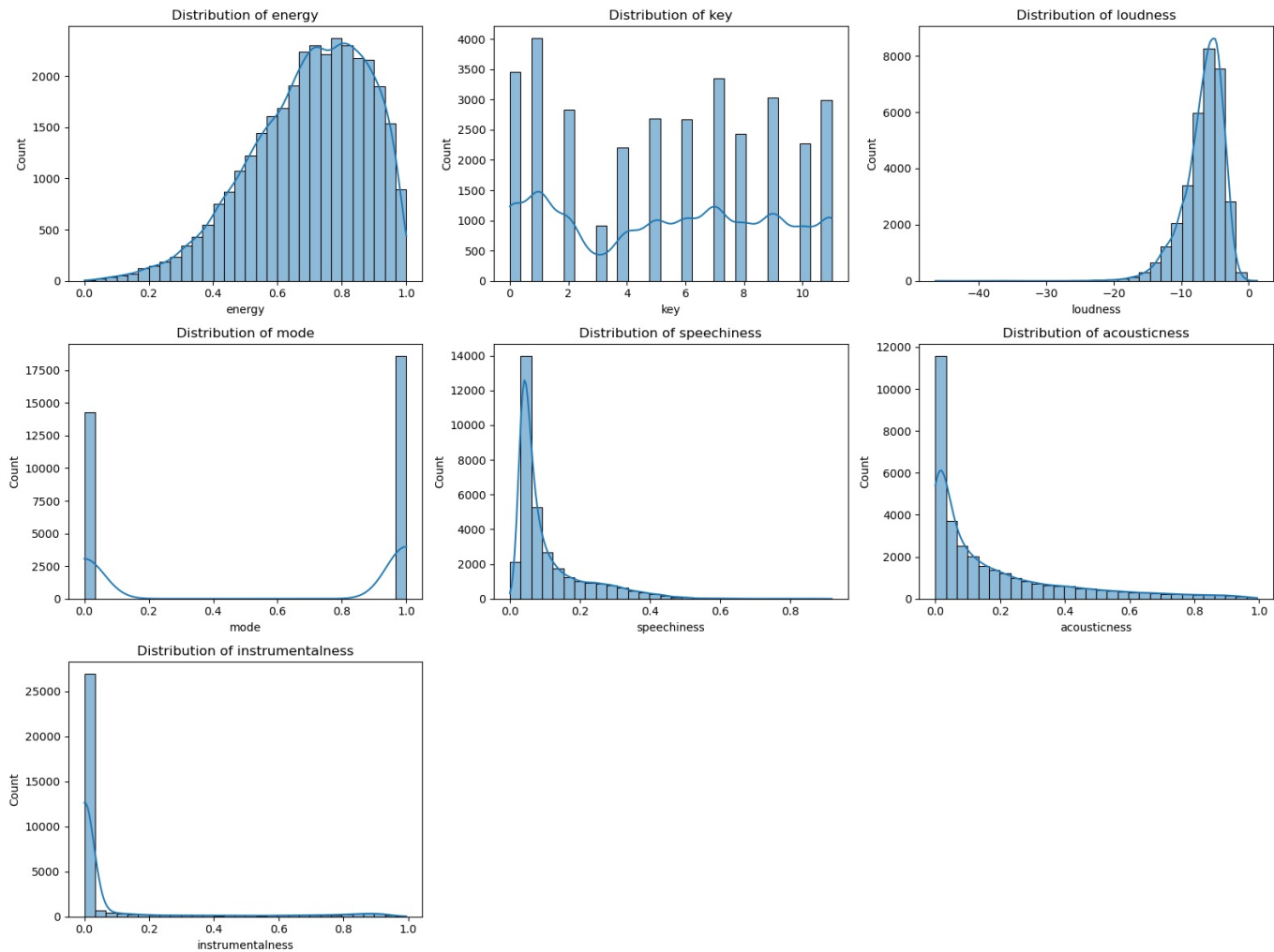
```
In [12]: df.describe()
```

Out[12]:

	track_popularity	danceability	energy	key	loudness	mode	speechiness	acousticness	instru
count	32833.000000	32833.000000	32833.000000	32833.000000	32833.000000	32833.000000	32833.000000	32833.000000	32833.000000
mean	42.477081	0.654850	0.698619	5.374471	-6.719499	0.565711	0.107068	0.175334	0.175334
std	24.984074	0.145085	0.180910	3.611657	2.988436	0.495671	0.101314	0.219633	0.219633
min	0.000000	0.000000	0.000175	0.000000	-46.448000	0.000000	0.000000	0.000000	0.000000
25%	24.000000	0.563000	0.581000	2.000000	-8.171000	0.000000	0.041000	0.015100	0.015100
50%	45.000000	0.672000	0.721000	6.000000	-6.166000	1.000000	0.062500	0.080400	0.080400
75%	62.000000	0.761000	0.840000	9.000000	-4.645000	1.000000	0.132000	0.255000	0.255000
max	100.000000	0.983000	1.000000	11.000000	1.275000	1.000000	0.918000	0.994000	0.994000

In [26]:

```
numeric_features='energy','key','loudness','mode','speechiness','acousticness','instrumentalness'
plt.figure(figsize=(16, 12))
for i, feature in enumerate(numeric_features):
    plt.subplot(3, 3, i+1)
    sns.histplot(df[feature], kde=True, bins=30)
    plt.title(f'Distribution of {feature}')
plt.tight_layout()
plt.show()
```

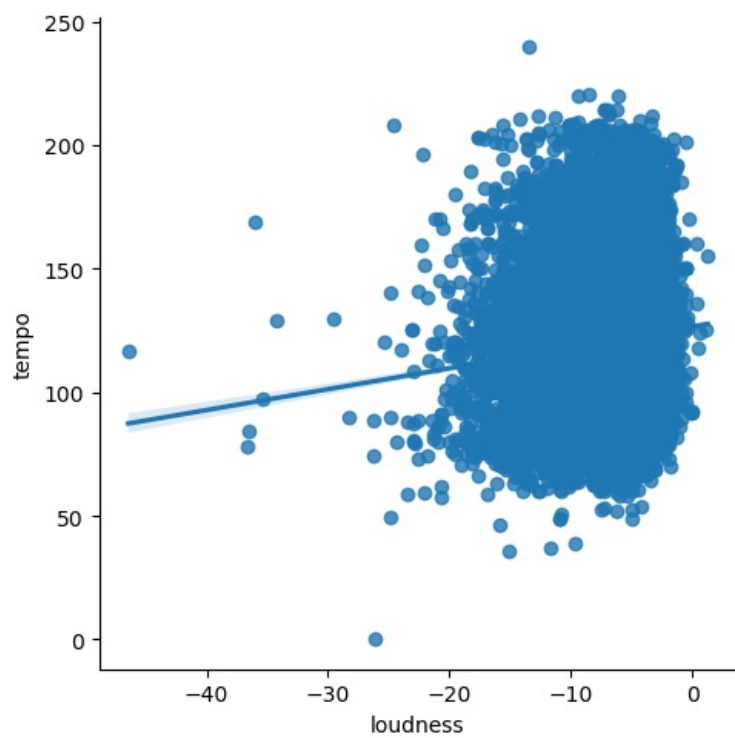


In [27]:

```
sns.lmplot(x="loudness", y="tempo", data=df)
```

Out[27]:

<seaborn.axisgrid.FacetGrid at 0x149dbb6aa80>



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