PERFORM DATA PRE-PROCESSING OPERATIONS
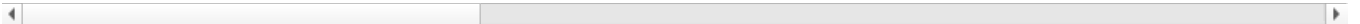
```
In [3]:  import pandas as pd
```

```
In [49]:  df1_spotify=pd.read_csv(r"C:\Users\arumu\OneDrive\Desktop\spotify.csv")
          df1_spotify
```

Out[49]:

	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	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	...
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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 [50]:  #function used to get first few rows from the dataset
          df1_spotify.head()
```

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	track_alb
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79I	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	

5 rows × 23 columns

```python
In [52]:    #to get last rows
            df1_spotify.tail()
```

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	track
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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	

5 rows × 23 columns

```python
In [53]:    #index of dataset
            df1_spotify.index
```
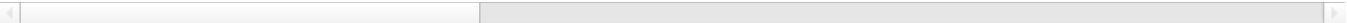
Out[53]:   RangeIndex(start=0, stop=32833, step=1)

```python
In [54]:    df1_spotify[1140:1150]
```

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	track
1140	2W3EgJst61RLZtPPm3EQim	Territory	The Blaze	64	56X6IaIoNEfqxAvGb9St58	Territory	
1141	5iK8GmW2uiPuUc5CtkZrlK	Downtown	Majical Cloudz	53	2xF3ioefFdZrOg9zUBU5hb	Are You Alone?	
1142	297rZsBEjFw9d0Gl3iBLnd	Goodie Bag	Still Woozy	45	31u58iuxrUOJeKJj4SKqOl	Goodie Bag	
1143	6qsArsTq6WoqtUFUe1e15W	Airplanes	Local Natives	49	2clpJDijNEoHv88jKwDID	Gorilla Manor	
1144	17eu2pSgSUpIG1GFWBnODv	Kill V. Maim	Grimes	62	5hB4jVN4ZHpubyiMmW81K1	Art Angels	
1145	6bTn1ovliIl0OkjUNkiMBJq	Nobody	Mitski	67	653wRjqO0GOZPQPcXpeAXD	Be the Cowboy	
1146	1CLmFKW99S8eJrebO3GB04	No Woman	Whitney	65	5yMCA6HdFAeL1aqUjxO3MO	Light Upon the Lake	
1147	71cUqXJ3h1r0Ees6YdENLU	Coffee	Sylvan Esso	61	5Abelpx4c3FzhTOZP3ZlvS	Sylvan Esso	
1148	2sZtaJ4RFbRAAOBKWEeR4H	Loud Places	Jamie xx	7	5jBKTppNIUpcrNKbr8jbsQ	In Colour - Preview White Label	
1149	2JiVVU7qv1YeD1yabpIyoX	Riding For The Feeling	Bill Callahan	48	4RBHgVw8kR6IpXVnZhZrh0	Apocalypse	

10 rows × 23 columns

```
df2_spotify=pd.read_csv(r"C:\Users\arumu\OneDrive\Desktop\spotify.csv",usecols=[0,11])
df2_spotify
```

	track_id	danceability
0	6f807x0ima9a1j3VPbc7VN	0.748
1	0r7CVbZTWZgbTCYdfa2P31	0.726
2	1z1Hg7Vb0AhHDiEmnDE79l	0.675
3	75FpbthrwQmzHlBJLuGdC7	0.718
4	1e8PAfcKUYoKkxPhrHqw4x	0.650
...	...	...
32828	7bxnKAamR3snQ1VGLuVfC1	0.428
32829	5Aevni09Em4575077nkWHz	0.522
32830	7ImMqPP3Q1yfUHvsdn7wEo	0.529
32831	2m69mhnfQ1Oq6lGtXuYhgX	0.626
32832	29zWqhca3zt5NsckZqDf6c	0.603

32833 rows × 2 columns

```
df3_spotify=pd.read_csv(r"C:\Users\arumu\OneDrive\Desktop\spotify.csv",skiprows=[4])
df3_spotify
```

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	track
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
4	7fvUMiyapMsRRxr07cU8Ef	Beautiful People (feat. Khalid) - Jack Wins Remix	Ed Sheeran	67	2yiy9cd2QktrNvWC2EUi0k	Beautiful People (feat. Khalid) [Jack Wins Remix]	
...	...	...	...	...	...	...	
32827	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	
32828	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	
32829	7ImMqPP3Q1yfUHvsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxoIZO4VzuCa6	Sweet Surrender (Radio Edit)	
32830	2m69mhnfQ1Oq6lGtXuYhgX	Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	
32831	29zWqhca3zt5NsckZqDf6c	Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	

32832 rows × 23 columns

```
df4_spotify=pd.read_csv(r"C:\Users\arumu\OneDrive\Desktop\spotify.csv")
df4_spotify
```

	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	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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 [57]:  #to check null values we use this function
          df4_spotify.isnull()
```

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	track_album_release_date	playlist_n
0	False	False	False	False	False	False	False	F
1	False	False	False	False	False	False	False	F
2	False	False	False	False	False	False	False	F
3	False	False	False	False	False	False	False	F
4	False	False	False	False	False	False	False	F
...	...	...	...	...	...	...	...	
32828	False	False	False	False	False	False	False	F
32829	False	False	False	False	False	False	False	F
32830	False	False	False	False	False	False	False	F
32831	False	False	False	False	False	False	False	F
32832	False	False	False	False	False	False	False	F

32833 rows × 23 columns

```
In [58]:  df4_spotify.isnull().sum()
```

```
Out[58]:  track_id                     0
          track_name                   5
          track_artist                 5
          track_popularity             0
          track_album_id               0
          track_album_name             5
          track_album_release_date     0
          playlist_name                0
          playlist_id                  0
          playlist_genre               0
          playlist_subgenre            0
          danceability                 0
          energy                       0
          key                          0
          loudness                     0
          mode                         0
          speechiness                  0
          acousticness                 0
          instrumentalness             0
          liveness                     0
          valence                      0
          tempo                        0
          duration_ms                  0
          dtype: int64
```
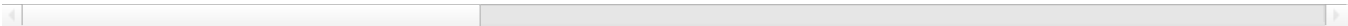
```python
In [59]:  df4_spotify["track_artist"].isnull().sum()
```

```
Out[59]:  5
```

```python
In [60]:  df5_spotify=pd.read_csv(r"C:\Users\arumu\OneDrive\Desktop\spotify.csv")
          df5_spotify
```

Out[60]:

	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	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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

```python
In [61]:  df5_spotify=pd.read_csv(r"C:\Users\arumu\OneDrive\Desktop\spotify.csv",dtype={"track_popularity (0:5)":"int64"}
          df5_spotify
```

	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	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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 [62]: `df5_spotify.sort_index()`

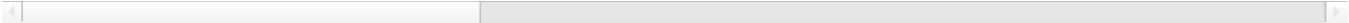|	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	tra
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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 [63]: `df5_spotify.sort_index(ascending=False)`

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	tra
32832	29zWqhca3zt5NsckZqDf6c	Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	
32831	2m69mhnfQ1Oq6lGtXuYhgX	Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	
32830	7ImMqPP3Q1yfUHvsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxoIZO4VzuCa6	Sweet Surrender (Radio Edit)	
32829	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	
...	...	...	...	...	...	...	
4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
3	75FpbthrwQmzHlBJLuGdC7	Call You Mine - Keanu Silva Remix	The Chainsmokers	60	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	

32833 rows × 23 columns

```
In [65]:  df5_spotify.loc[1,"track_popularity"]=100
          df5_spotify
```

	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	99	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	100	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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

`df5_spotify.loc[:,["track_album_id","track_album_name","track_album_release_date","playlist_name"]]`

	track_album_id	track_album_name	track_album_release_date	playlist_name
0	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	14-06-2019	Pop Remix
1	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	13-12-2019	Pop Remix
2	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	05-07-2019	Pop Remix
3	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	19-07-2019	Pop Remix
4	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	05-03-2019	Pop Remix
...	...	...	...	...
32828	2azRoBBWEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	28-04-2014	♥ EDM LOVE 2020
32829	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	08-03-2013	♥ EDM LOVE 2020
32830	0ltWNSY9JgxoIZO4VzuCa6	Sweet Surrender (Radio Edit)	21-04-2014	♥ EDM LOVE 2020
32831	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	01-01-2014	♥ EDM LOVE 2020
32832	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	03-03-2014	♥ EDM LOVE 2020

32833 rows × 4 columns

`df5_spotify.loc[0:5,["track_album_id","track_album_name","track_album_release_date","playlist_name"]]`

	track_album_id	track_album_name	track_album_release_date	playlist_name
0	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	14-06-2019	Pop Remix
1	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	13-12-2019	Pop Remix
2	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	05-07-2019	Pop Remix
3	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	19-07-2019	Pop Remix
4	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	05-03-2019	Pop Remix
5	2yiy9cd2QktrNvWC2EUi0k	Beautiful People (feat. Khalid) [Jack Wins Remix]	11-07-2019	Pop Remix

In [72]: `df5_spotify.iloc[20:30,4:7]`

	track_album_id	track_album_name	track_album_release_date
20	37bCTD5iLWMpDcBanNkkXB	Heaven (David Guetta & MORTEN Remix)	23-08-2019
21	5r998zJ0MNYb2TTxyQmjxT	All Around The World (La La La) [Marnik Remix]	23-08-2019
22	1WhPuMFm5VaTJqe9rl3C5Q	Don't Leave Me Alone (feat. Anne-Marie) [EDX's...	08-05-2019
23	6Ol6C42O7AWnTkj8pHMHWv	Slow Dance (feat. Ava Max) [Sam Feldt Remix]	25-10-2019
24	5vf16sRhXB2f3sS5kteU2T	Do You Mean - The Remixes (feat. Ty Dolla $ign...	24-05-2019
25	1LTVUVJQ9wNArrbm02ZOVL	Hold Me While You Wait (Steve Void Remix)	21-06-2019
26	13pvchQvJxxpvvtsasA4NG	One Thing Right (Remixes)	09-08-2019
27	5bMicFMWsZlRZNTDq9h3oA	Close To Me (Remixes)	01-02-2019
28	4pl2838fY2YPaqiT2yWuMo	So Am I (Toby Green Remix)	23-05-2019
29	6MhbDWEsAP9Xsgoj0TuEOc	When You Leave (Breathe Carolina Remix)	19-04-2019

In [73]:
```python
df6_spotify=pd.read_csv(r"C:\Users\arumu\OneDrive\Desktop\spotify.csv")
df6_spotify
```

	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	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	
32829	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	
32830	7lmMqPP3Q1yfUHvsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxoIZO4VzuCa6	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

```
df6_spotify.drop(3)
```

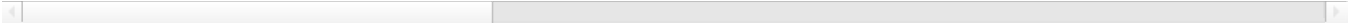|	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	track
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
5	7fvUMiyapMsRRxr07cU8Ef	Beautiful People (feat. Khalid) - Jack Wins Remix	Ed Sheeran	67	2yiy9cd2QktrNvWC2EUi0k	Beautiful People (feat. Khalid) [Jack Wins Remix]	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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	

32832 rows × 23 columns

In [75]: `df6_spotify.drop("track_album_release_date",axis=1)`

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	pla
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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 × 22 columns

In [76]: `df4_spotify.isnull()`

	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	track_album_release_date	playlist_n
0	False	False	False	False	False	False	False	F
1	False	False	False	False	False	False	False	F
2	False	False	False	False	False	False	False	F
3	False	False	False	False	False	False	False	F
4	False	False	False	False	False	False	False	F
...	...	...	...	...	...	...	...	
32828	False	False	False	False	False	False	False	F
32829	False	False	False	False	False	False	False	F
32830	False	False	False	False	False	False	False	F
32831	False	False	False	False	False	False	False	F
32832	False	False	False	False	False	False	False	F

32833 rows × 23 columns

In [77]: `df4_spotify.dropna()`

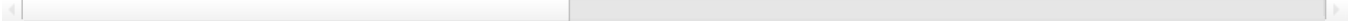|	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	tra
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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	

32828 rows × 23 columns

In [78]: `df4_spotify.dropna(axis=1)`

	track_id	track_popularity	track_album_id	track_album_release_date	playlist_name	
0	6f807x0ima9a1j3VPbc7VN	66	2oCs0DGTsRO98Gh5ZSl2Cx	14-06-2019	Pop Remix	37i9dQZF
1	0r7CVbZTWZgbTCYdfa2P31	67	63rPSO264uRjW1X5E6cWv6	13-12-2019	Pop Remix	37i9dQZF
2	1z1Hg7Vb0AhHDiEmnDE79l	70	1HoSmj2eLcsrR0vE9gThr4	05-07-2019	Pop Remix	37i9dQZF
3	75FpbthrwQmzHlBJLuGdC7	60	1nqYsOef1yKKuGOVchbsk6	19-07-2019	Pop Remix	37i9dQZF
4	1e8PAfcKUYoKkxPhrHqw4x	69	7m7vv9wlQ4i0LFuJiE2zsQ	05-03-2019	Pop Remix	37i9dQZF
...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	42	2azRoBBWEEEYhqV6sb7JrT	28-04-2014	♥ EDM LOVE 2020	6jI1gFr6
32829	5Aevni09Em4575077nkWHz	20	6kD6KLxj7s8eCE3ABvAyf5	08-03-2013	♥ EDM LOVE 2020	6jI1gFr6
32830	7ImMqPP3Q1yfUHvsdn7wEo	14	0ltWNSY9JgxoIZO4VzuCa6	21-04-2014	♥ EDM LOVE 2020	6jI1gFr6
32831	2m69mhnfQ1Oq6lGtXuYhgX	15	1fGrOkHnHJcStl14zNx8Jy	01-01-2014	♥ EDM LOVE 2020	6jI1gFr6
32832	29zWqhca3zt5NsckZqDf6c	27	0X3mUOm6MhxR7PzxG95rAo	03-03-2014	♥ EDM LOVE 2020	6jI1gFr6

32833 rows × 20 columns

In [79]: `df4_spotify.rename(columns={"track_id":"id_num","track_name":"name_of_track","track_artist":"artist_name","track`
`df4_spotify`

	id_num	name_of_track	artist_name	popularity_of_track	album_id_num	album_name	
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	2
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	2
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	2
3	75FpbthrwQmzHlBJLuGdC7	Call You Mine - Keanu Silva Remix	The Chainsmokers	60	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	2
4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	2
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	2
32829	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	2
32830	7ImMqPP3Q1yfUHvsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxoIZO4VzuCa6	Sweet Surrender (Radio Edit)	2
32831	2m69mhnfQ1Oq6lGtXuYhgX	Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	2
32832	29zWqhca3zt5NsckZqDf6c	Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	2

32833 rows × 23 columns

In [80]: df4_spotify

	id_num	name_of_track	artist_name	popularity_of_track	album_id_num	album_name	
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	2
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	2
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	2
3	75FpbthrwQmzHlBJLuGdC7	Call You Mine - Keanu Silva Remix	The Chainsmokers	60	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	2
4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	2
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	2
32829	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	2
32830	7ImMqPP3Q1yfUHvsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxoIZO4VzuCa6	Sweet Surrender (Radio Edit)	2
32831	2m69mhnfQ1Oq6lGtXuYhgX	Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	2
32832	29zWqhca3zt5NsckZqDf6c	Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	2

32833 rows × 23 columns

In [81]:
```python
df4_spotify.dropna(how="any")
```

	id_num	name_of_track	artist_name	popularity_of_track	album_id_num	album_name	
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	2
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	2
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	2
3	75FpbthrwQmzHlBJLuGdC7	Call You Mine - Keanu Silva Remix	The Chainsmokers	60	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	2
4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	2
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	2
32829	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	2
32830	7ImMqPP3Q1yfUHvsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxoIZO4VzuCa6	Sweet Surrender (Radio Edit)	2
32831	2m69mhnfQ1Oq6lGtXuYhgX	Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	2
32832	29zWqhca3zt5NsckZqDf6c	Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	2

32828 rows × 23 columns

In [82]:
```python
df8_spotify=pd.read_csv(r"C:\Users\arumu\OneDrive\Desktop\spotify.csv")
df8_spotify
```

	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	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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 [83]: `df8_spotify.fillna("SPOTIFY")`

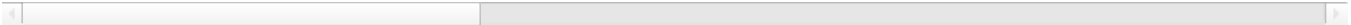|	track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	tra
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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 [86]: `df8_spotify.interpolate(inplace=False)`

```
C:\Users\arumu\AppData\Local\Temp\ipykernel_7728\1907674542.py:1: FutureWarning: DataFrame.interpolate with obje
ct dtype is deprecated and will raise in a future version. Call obj.infer_objects(copy=False) before interpolati
ng instead.
  df8_spotify.interpolate(inplace=False)
```

Out[86]:

	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	2oCs0DGTsRO98Gh5ZSl2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	
2	1z1Hg7Vb0AhHDiEmnDE79l	All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	
3	75FpbthrwQmzHlBJLuGdC7	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	7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
...	...	...	...	...	...	...	
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEYhqV6sb7JrT	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	0ltWNSY9JgxoIZO4VzuCa6	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 [ ]:

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