

Perform data pre-processing operations

Data pre-processing operations:

Data collection,

Data cleaning,

Data integration,

Data transformation,

Data representation

```
In [ ]: this can be shown by using the code of python..
```

```
In [ ]: import pandas as pd
```

```
In [3]: df1=pd.read_csv(r"C:\Users\bhava\Downloads\spotify dataset.csv") #loading the data set  
df1
```

```
Out[3]:
```

	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	1z1Hg7Vb0AhHDiEmnDE79I	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	2azRoBBWEEYhqv6sb7JrT	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	0ItWNSY9JgxolZO4VzuCa6	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	

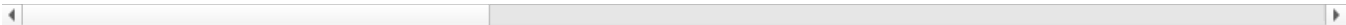
32833 rows × 23 columns

```
In [5]: #function used to get first few rows from dataset  
df1.head()
```

Out[5]:

		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	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	1z1Hg7Vb0AhHDIEmnDE79l		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	7m7vv9wlQ4i0LFuJiE2zsQ		Someone You Loved (Future Humans Remix)	

5 rows × 23 columns



In [7]:

```
#to get last rows
df1.tail()
```

Out[7]:

		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	2azRoBBWEEEEEYhqV6sb7JrT		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	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	

5 rows × 23 columns



In [11]:

```
#index of dataset
df1.index
```

Out[11]: RangeIndex(start=0, stop=32833, step=1)

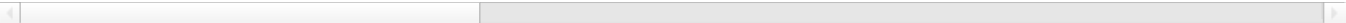
In [15]:

```
df1[1150:1160] # to get particular rows and columns
```

Out[15]:

		track_id	track_name	track_artist	track_popularity	track_album_id	track_album_name	track
1150	3j5DVpcCELigVZrmwGOw3X		Cruel	St. Vincent	55	1Lci4bx7JluCC8pnBNX7ds	Strange Mercy	
1151	7DfFc7a6Rwfi3YQMRbDMau	Thinkin Bout You		Frank Ocean	75	392p3shh2jkkUxY2VHvIH8	channel ORANGE	
1152	7GdGBGwFMg21mY9kNpNKXI	Antidote		Orion Sun	58	3fUfLInvi1phe0vKhDBKwM	A Collection of Fleeting Moments and Daydreams	
1153	781V2Y5LPtcpgONEOadadE	Get Got		Death Grips	58	1PQDjdBpHPikAodJqjzm6a	The Money Store	
1154	6golelYKuy85o3u0cxIxFK	The Wire		HAIM	60	729Vh0HApsm7hGDVjbmtrf	Days Are Gone	
1155	3GbJOImkNo5nFT2GQxVr11	Rill Rill		Sleigh Bells	56	1IWkF6zpOq73txmrYpljIT	Treats	
1156	7IzJ7EGplpq2vW3ylVTtMh	Not		Big Thief	62	7pg8T6pajjHVZbiyB8bGxo	Two Hands	
1157	2pE0CMK1fE3mfU0eEOHhKw	The Mother We Share		CHVRCHES	61	7mYtNRrdUIZZymc5epjYHE	The Bones of What You Believe	
1158	5HLes17mwCwKt81mi0Tk35	Archie, Marry Me		Alvvays	62	4PrBMzWzzoMOwm55Bfo3dt	Alvvays	
1159	4QHKR48C18rwlpSYW6rH7p	Mi Mujer		Nicolas Jaar	59	1b6TEbqt3BVA43BtMnL7Yk	Time for Us	

10 rows × 23 columns



In [23]:

```
df2=pd.read_csv(r"C:\Users\bhava\Downloads\spotify dataset.csv",usecols=[0,11]) #to get columns by using index
df2
```

Out[23]:

	track_id	danceability
0	6f807x0ima9a1j3VPbc7VN	0.748
1	0r7CVbZTWZgbTCYdfa2P31	0.726
2	1z1Hg7Vb0AhHDiEmnDE79I	0.675
3	75FpbthrwQmzHIBJLuGdC7	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

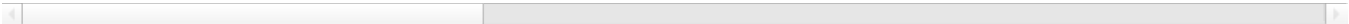
In [25]:

```
df3=pd.read_csv(r"C:\Users\bhava\Downloads\spotify dataset.csv",skiprows=[4]) # skipping the rows from the datas
df3
```

Out [25]:

		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	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	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	7m7vv9wIQ4i0LFuJiE2zsQ		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	2azRoBBWEEEEEYhqV6sb7JrT		City Of Lights (Vocal Mix)	
32828	5Aevni09Em4575077nkWHz		Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5		Closer Remixed	
32829	7lmMqPP3Q1yfUHvsdn7wEo		Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxolZO4VzuCa6		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



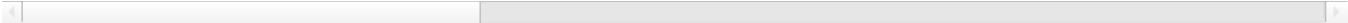
In [36]:

```
df4=pd.read_csv(r"C:\Users\bhava\Downloads\spotify dataset.csv") #loading the data again
df4
```

Out[36]:

		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	1z1Hg7Vb0AhHDiEmnDE79l		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	2azRoBBWEEEEYhqV6sb7JrT		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

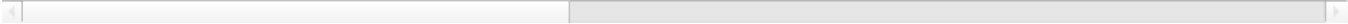


```
In [38]: #to check null values we use this function
df4.isnull()
```

Out[38]:

	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 [40]: df4.isnull().sum()
```

```
Out[40]: 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
```

```
In [42]: df4["track_artist"].isnull().sum() #sum of null values
```

```
Out[42]: 5
```

```
In [44]: df5=pd.read_csv(r"C:\Users\bhava\Downloads\spotify dataset.csv")
df5
```

Out[44]:		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	1z1Hg7Vb0AhHDiEmnDE79l	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		7m7vv9wlQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
	
	32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42		2azRoBBWEEYhqV6sb7JrT	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		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 [58]: df5=pd.read_csv(r"C:\Users\bhava\Downloads\spotify dataset.csv",dtype={"track_popularity (0:5)": "int64"}) # cha
df5
```

Out[58]:

		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	1z1Hg7Vb0AhHDiEmnDE79l		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	2azRoBBWEEEEYhqV6sb7JrT		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	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 [60]:

df5.sort_index() # sorting

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	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	1z1Hg7Vb0AhHDiEmnDE79l		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	2azRoBBWEEEEYhqV6sb7JrT		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	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 [62]:

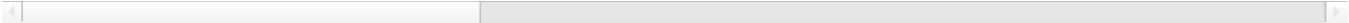
```
df5.sort_index(ascending=False) #sorting in descending
```


Out [62]:

		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	7lmMqPP3Q1yfUHvsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14		0ltWNSY9JgxolZO4VzuCa6	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		2azRoBBWEEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	

	4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69		7m7vv9wIQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	
	3	75FpbthrwQmzHIBJLuGdC7	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		2oCs0DGTsRO98Gh5ZSI2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	

32833 rows × 23 columns



In [64]:

```
df5.loc[0,"track_popularity"]=99
df5
```

Out[64]:

		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	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	1z1Hg7Vb0AhHDiEmnDE79I		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	2azRoBBWEEEEYhqV6sb7JrT		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	2m69mhnfQ1Oq6IGtXuYhgX		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 [66]:

df5.loc[:,["track_id","track_name","track_artist","track_popularity"]] #using loc function

Out[66]:

	track_id	track_name	track_artist	track_popularity
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	99
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67
2	1z1Hg7Vb0AhHDiEmnDE79I	All the Time - Don Diablo Remix	Zara Larsson	70
3	75FpbthrwQmzHIBJLuGdC7	Call You Mine - Keanu Silva Remix	The Chainsmokers	60
4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69
...
32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	42
32829	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20
32830	7ImMqPP3Q1yfUHVsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	14
32831	2m69mhnfQ1Oq6IGtXuYhgX	Only For You - Maor Levi Remix	Mat Zo	15
32832	29zWqhca3zt5NsckZqDf6c	Typhoon - Original Mix	Julian Calor	27

32833 rows × 4 columns

In [68]:

df5.loc[0:5,["track_id","track_name","track_artist","track_popularity"]] #to get particular cols

Out [68]:

	track_id	track_name	track_artist	track_popularity
0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	99
1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	67
2	1z1Hg7Vb0AhHDIEmnDE79I	All the Time - Don Diablo Remix	Zara Larsson	70
3	75FpbthrwQmzHIBJLuGdC7	Call You Mine - Keanu Silva Remix	The Chainsmokers	60
4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	69
5	7fvUMiyapMsRRxr07cU8Ef	Beautiful People (feat. Khalid) - Jack Wins Remix	Ed Sheeran	67

In [70]:

```
df5.iloc[10:20,0:3] #to get particular data
```

Out [70]:

	track_id	track_name	track_artist
10	3eFJI470ALf1EYjywPRsJy	Cross Me (feat. Chance the Rapper & PnB Rock) ...	Ed Sheeran
11	3iJeF2izF1QcpCgUc97BLI	Hate Me - R3HAB Remix	Ellie Goulding
12	6e0CvGZf7CouOpYF8toXHC	Body On My	Loud Luxury
13	3eLdNmnRWr9glyBcqTSSSti	SOS - Laidback Luke Tribute Remix / Radio Edit	Avicii
14	55nMnifaQWKe3f9cbwOXwx	Summer Days (feat. Macklemore & Patrick Stump ...	Martin Garrix
15	1EJgymgJHcjSOGSHcYaxvW	South of the Border (feat. Camila Cabello & Ca...	Ed Sheeran
16	5WaXMQMlQppq8pwldaFP43L	All My Friends - Eden Prince Remix	AJ Mitchell
17	3TjLsDgL0bTbSQIF6M5Ki8	Say My Name (feat. Bebe Rexha & J Balvin) - Lu...	David Guetta
18	0GfS3y8Jd7SHWd9R51s7Fo	Dancing With A Stranger (With Normani) - Cheat...	Sam Smith
19	2v3DuCVBbopteJqdM7aKQK	Let It Be Me - Sondr Remix	Steve Aoki

In [72]:

```
df6=pd.read_csv(r"C:\Users\bhava\Downloads\spotify dataset.csv")
df6
```

Out [72]:

		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	1z1Hg7Vb0AhHDiEmnDE79l		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	2azRoBBWEEEEYhqV6sb7JrT		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	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 [74]:

df6.drop(4)

Out[74]:

	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	1z1Hg7Vb0AhHDiEmnDE79l	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	
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	2azRoBBWEEEEYhqV6sb7JrT	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	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	

32832 rows × 23 columns

```
In [76]: df6.drop("track_popularity",axis=1) #deleting the column
```

Out [76]:

		track_id	track_name	track_artist	track_album_id	track_album_name	track_album_release
	0	6f807x0ima9a1j3VPbc7VN	I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	2oCs0DGTsRO98Gh5ZSI2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	2019-
	1	0r7CVbZTWZgbTCYdfa2P31	Memories - Dillon Francis Remix	Maroon 5	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	2019-
	2	1z1Hg7Vb0AhHDiEmnDE79I	All the Time - Don Diablo Remix	Zara Larsson	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	2019-
	3	75FpbthrwQmzHIBJLuGdC7	Call You Mine - Keanu Silva Remix	The Chainsmokers	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	2019-
	4	1e8PAfcKUYoKkxPhrHqw4x	Someone You Loved - Future Humans Remix	Lewis Capaldi	7m7vv9wIQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	2019-
	
	32828	7bxnKAamR3snQ1VGLuVfC1	City Of Lights - Official Radio Edit	Lush & Simon	2azRoBBWEEEyhqV6sb7JrT	City Of Lights (Vocal Mix)	2014-
	32829	5Aevni09Em4575077nkWHz	Closer - Sultan & Ned Shepard Remix	Tegan and Sara	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	2013-
	32830	7lmMqPP3Q1yfUHVsdn7wEo	Sweet Surrender - Radio Edit	Starkillers	0ltWNSY9JgxolZO4VzuCa6	Sweet Surrender (Radio Edit)	2014-
	32831	2m69mhnfQ1Oq6IGtXuYhgX	Only For You - Maor Levi Remix	Mat Zo	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	2014-
	32832	29zWqhca3zt5NsckZqDf6c	Typhoon - Original Mix	Julian Calor	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	2014-

32833 rows × 22 columns

In [78]:

df4.isnull()

Out [78]:

	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	F
	1	False	False	False	False	False	False	F
	2	False	False	False	False	False	False	F
	3	False	False	False	False	False	False	F
	4	False	False	False	False	False	False	F
	
	32828	False	False	False	False	False	False	F
	32829	False	False	False	False	False	False	F
	32830	False	False	False	False	False	False	F
	32831	False	False	False	False	False	False	F
	32832	False	False	False	False	False	False	F

32833 rows × 23 columns

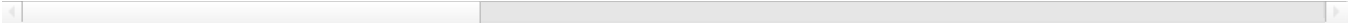
In [80]:

df4.dropna() #deleting the function

Out[80]:

		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	1z1Hg7Vb0AhHDIEmnDE79I		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	2azRoBBWEEEEYhqV6sb7JrT		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	0ltWNSY9JgxolZO4VzuCa6		Sweet Surrender (Radio Edit)	
32831	2m69mhnfQ1Oq6lGtXuYhgX		Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcSti14zNx8Jy		Only For You (Remixes)	
32832	29zWqhca3zt5NsckZqDf6c		Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo		Typhoon/Storm	

32828 rows × 23 columns



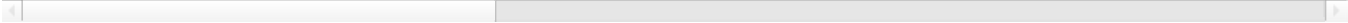
In [82]:

```
df4.dropna(axis=1)
```

Out[82]:

		track_id	track_popularity	track_album_id	track_album_release_date	playlist_name	
0	6f807x0ima9a1j3VPbc7VN		66	2oCs0DGTsRO98Gh5ZSI2Cx	2019-06-14	Pop Remix	37i9dQZF
1	0r7CVbZTWZgbTCYdfa2P31		67	63rPSO264uRjW1X5E6cWv6	2019-12-13	Pop Remix	37i9dQZF
2	1z1Hg7Vb0AhHDIEmnDE79I		70	1HoSmj2eLcsrR0vE9gThr4	2019-07-05	Pop Remix	37i9dQZF
3	75FpbthrwQmzHIBJLuGdC7		60	1nqYsOef1yKKuGOVchbsk6	2019-07-19	Pop Remix	37i9dQZF
4	1e8PAfcKUYoKkxPhrHqw4x		69	7m7vv9wIQ4i0LFuJiE2zsQ	2019-03-05	Pop Remix	37i9dQZF
...
32828	7bxnKAamR3snQ1VGLuVfC1		42	2azRoBBWEEEEYhqV6sb7JrT	2014-04-28	♥ EDM LOVE 2020	6jl1gFr
32829	5Aevni09Em4575077nkWHz		20	6kD6KLxj7s8eCE3ABvAyf5	2013-03-08	♥ EDM LOVE 2020	6jl1gFr
32830	7lmMqPP3Q1yfUHvsdn7wEo		14	0ltWNSY9JgxolZO4VzuCa6	2014-04-21	♥ EDM LOVE 2020	6jl1gFr
32831	2m69mhnfQ1Oq6lGtXuYhgX		15	1fGrOkHnHJcSti14zNx8Jy	2014-01-01	♥ EDM LOVE 2020	6jl1gFr
32832	29zWqhca3zt5NsckZqDf6c		27	0X3mUOm6MhxR7PzxG95rAo	2014-03-03	♥ EDM LOVE 2020	6jl1gFr

32833 rows × 20 columns



In [84]:

```
df4.rename(columns={"track_id": "id", "track_name": "name", "track_artist": "artist", "track_popularity": "popularity"})
df4 #changing the names
```

Out[84]:

		id	name	artist	popularity		album_id	album_name	date	list name
0	6f807x0ima9a1j3VPbc7VN		I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSI2Cx		I Don't Care (with Justin Bieber) [Loud Luxury...	2019-06-14	Pop Remix
1	0r7CVbZTWZgbTCYdfa2P31		Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6		Memories (Dillon Francis Remix)	2019-12-13	Pop Remix
2	1z1Hg7Vb0AhHDiEmnDE79l		All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4		All the Time (Don Diablo Remix)	2019-07-05	Pop Remix
3	75FpbthrwQmzHIBJLuGdC7		Call You Mine - Keanu Silva Remix	The Chainsmokers	60	1nqYsOef1yKKuGOVchbsk6		Call You Mine - The Remixes	2019-07-19	Pop Remix
4	1e8PAfcKUYoKkxPhrHqw4x		Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wlQ4i0LFuJiE2zsQ		Someone You Loved (Future Humans Remix)	2019-03-05	Pop Remix
...
32828	7bxnKAamR3snQ1VGLuVfC1		City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEyhqV6sb7JrT		City Of Lights (Vocal Mix)	2014-04-28	♥ EDM LOVE 2020
32829	5Aevni09Em4575077nkWHz		Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5		Closer Remixed	2013-03-08	♥ EDM LOVE 2020
32830	7lmMqPP3Q1yfUHVsdn7wEo		Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxolZO4VzuCa6		Sweet Surrender (Radio Edit)	2014-04-21	♥ EDM LOVE 2020
32831	2m69mhnfQ1Oq6lGtXuYhgX		Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy		Only For You (Remixes)	2014-01-01	♥ EDM LOVE 2020
32832	29zWqhca3zt5NsckZqDf6c		Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo		Typhoon/Storm	2014-03-03	♥ EDM LOVE 2020

32833 rows × 23 columns

```
In [86]: df4 #loading the data
```

```
df4 #loading the data
```


Out[86]:

		id	name	artist	popularity		album_id	album_name	date	list name
0	6f807x0ima9a1j3VPbc7VN		I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSI2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	2019-06-14	Pop Remix	
1	0r7CVbZTWZgbTCYdfa2P31		Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	2019-12-13	Pop Remix	
2	1z1Hg7Vb0AhHDIEmnDE79I		All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	2019-07-05	Pop Remix	
3	75FpbthrwQmzHIBJLuGdC7		Call You Mine - Keanu Silva Remix	The Chainsmokers	60	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	2019-07-19	Pop Remix	
4	1e8PAfcKUYoKkxPhrHqw4x		Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wIQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	2019-03-05	Pop Remix	
...	
32828	7bxnKAamR3snQ1VGLuVfC1		City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	2014-04-28	♥ EDM LOVE 2020	
32829	5Aevni09Em4575077nkWHz		Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	2013-03-08	♥ EDM LOVE 2020	
32830	7ImMqPP3Q1yfUHVsdn7wEo		Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxolZO4VzuCa6	Sweet Surrender (Radio Edit)	2014-04-21	♥ EDM LOVE 2020	
32831	2m69mhnfQ1Oq6lGtXuYhgX		Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	2014-01-01	♥ EDM LOVE 2020	
32832	29zWqhca3zt5NsckZqDf6c		Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	2014-03-03	♥ EDM LOVE 2020	

32833 rows × 23 columns

In [88]:

df4.dropna(how="any")

Out [88]:

		id	name	artist	popularity		album_id	album_name	date	list name
0	6f807x0ima9a1j3VPbc7VN		I Don't Care (with Justin Bieber) - Loud Luxur...	Ed Sheeran	66	2oCs0DGTsRO98Gh5ZSI2Cx	I Don't Care (with Justin Bieber) [Loud Luxury...	2019- 06-14	Pop Remix	
1	0r7CVbZTWZgbTCYdfa2P31		Memories - Dillon Francis Remix	Maroon 5	67	63rPSO264uRjW1X5E6cWv6	Memories (Dillon Francis Remix)	2019- 12-13	Pop Remix	
2	1z1Hg7Vb0AhHDIEmnDE79I		All the Time - Don Diablo Remix	Zara Larsson	70	1HoSmj2eLcsrR0vE9gThr4	All the Time (Don Diablo Remix)	2019- 07-05	Pop Remix	
3	75FpbthrwQmzHIBJLuGdC7		Call You Mine - Keanu Silva Remix	The Chainsmokers	60	1nqYsOef1yKKuGOVchbsk6	Call You Mine - The Remixes	2019- 07-19	Pop Remix	
4	1e8PAfcKUYoKkxPhrHqw4x		Someone You Loved - Future Humans Remix	Lewis Capaldi	69	7m7vv9wIQ4i0LFuJiE2zsQ	Someone You Loved (Future Humans Remix)	2019- 03-05	Pop Remix	
...	
32828	7bxnKAamR3snQ1VGLuVfC1		City Of Lights - Official Radio Edit	Lush & Simon	42	2azRoBBWEEEEEYhqV6sb7JrT	City Of Lights (Vocal Mix)	2014- 04-28	♥ EDM LOVE 2020	
32829	5Aevni09Em4575077nkWHz		Closer - Sultan & Ned Shepard Remix	Tegan and Sara	20	6kD6KLxj7s8eCE3ABvAyf5	Closer Remixed	2013- 03-08	♥ EDM LOVE 2020	
32830	7ImMqPP3Q1yfUHVsdn7wEo		Sweet Surrender - Radio Edit	Starkillers	14	0ltWNSY9JgxolZO4VzuCa6	Sweet Surrender (Radio Edit)	2014- 04-21	♥ EDM LOVE 2020	
32831	2m69mhnfQ1Oq6lGtXuYhgX		Only For You - Maor Levi Remix	Mat Zo	15	1fGrOkHnHJcStl14zNx8Jy	Only For You (Remixes)	2014- 01-01	♥ EDM LOVE 2020	
32832	29zWqhca3zt5NsckZqDf6c		Typhoon - Original Mix	Julian Calor	27	0X3mUOm6MhxR7PzxG95rAo	Typhoon/Storm	2014- 03-03	♥ EDM LOVE 2020	

32828 rows × 23 columns

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In [92]:

```
df8=pd.read_csv(r"C:\Users\bhava\Downloads\spotify dataset.csv")
df8
```

Out [92]:

		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	1z1Hg7Vb0AhHDiEmnDE79l		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	2azRoBBWEEEEYhqV6sb7JrT		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	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 [96]: df8.interpolate(inplace=False)

C:\Users\bhava\AppData\Local\Temp\ipykernel_15756\1024399409.py:1: FutureWarning: DataFrame.interpolate with object dtype is deprecated and will raise in a future version. Call obj.infer_objects(copy=False) before interpolating instead.
df8.interpolate(inplace=False)

Out [96]:

		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	1z1Hg7Vb0AhHDiEmnDE79l		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	2azRoBBWEEEEYhqV6sb7JrT		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	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 [98]:

df8.fillna("PYTHON") #null values filling using python

Out[98]:

	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	1z1Hg7Vb0AhHDiEmnDE79l	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	2azRoBBWEEEEYhqV6sb7JrT	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	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