

Databases 1

TD: SQL

Familiarize yourself with the database `music.db` available on the course web page. Draw the diagram of its relational schema paying careful attention to foreign keys. What do you think are the uses of the foreign key `Artist_ID` in tables `Dics`, `Listing`, and `Written`?

Q 1. Display the CDs that came out in 1998.

CDDB	Artist_ID	Title	Year	Price	State
0901b102	43	The Proximity Effect...	1998	11.6	Used
8a0c8c0b	61	Le bonheur de la ten...	1998	17.22	New
8d0a290a	66	Paradis Païen	1998	10.86	New
960a780c	113	Spread it all around	1998	17.48	New

[Line count: 35]

Q 2. Display the CDs published in 21st century.

CDDB	Artist_ID	Title	Year	Price	State
9608ca0c	10	Quelqu'un m'a dit	2003	14.03	Damaged
8f08ae0a	9	Hotel Vast Horizon	2003	17.63	New
980c890d	13	La femme chocolat	2005	15.67	New
9d0bee0b	14	The Bootleg Series V...	2002	13.01	Used

[Line count: 142]

Q 3. Display the CDs that came out in the 90s.

CDDB	Artist_ID	Title	Year	Price	State
2b056004	NULL	French Kiss (Bonus CD)	1999	17.93	Used
46046d06	1	Stiff'n Red	1991	17.04	Used
6e090e0a	2	This ain't no jukebo...	1991	11.86	Used
7108b60a	3	Sam Brown	1999	15.45	Damaged

[Line count: 291]

Q 4. Display the different names of states of CDs (without repetition).

State
Used
Damaged
New
Destroyed

[Line count: 4]

Q 5. Find the titles of all damaged CDs.

Title
Sam Brown
Sounds from the four...
Amnesty For Eve
A Crack In Time

[Line count: 170]

Q 6. Find cheap used CDs (price below 11). Order the result by the price (ascending).

CDDB	Artist_ID	Title	Year	Price	State
9c0c080c	184	Longtemps	2005	10.0	Used
c30ff40e	7	Feel This	1992	10.01	Used
56098a06	63	Guet-apens	1997	10.01	Used
6609e308	83	For Your Pleasure	1973	10.14	Used

[Line count: 30]

Q 7. Find CDs that came out either in 1990 or 1995 and whose price is between 10 and 15.

CDDB	Artist_ID	Title	Year	Price	State
810ad70b	6	Post	1995	11.22	Used
880bca0b	3	Dream of the Dog	1995	11.92	Used
370ed405	16	Symphonie n°5 in Do ...	1990	14.66	New
400d3405	22	Symphony No. 4 - Tragic	1990	14.03	Used

[Line count: 26]

Q 8. Find the number of CDs that came out in the 80s and their price is between 12 and 14.

```
+-----+
| Disc count |
+-----+
|      42    |
+-----+
```

[Line count: 1]

Q 9. Find the total of prices of destroyed CD.

```
+-----+
|      Hein  |
+-----+
| 627.969999999999 |
+-----+
```

[Line count: 1]

Q 10. Find CDs by 'The Beatles'.

```
+-----+-----+-----+-----+-----+-----+
| CDDb | Artist_ID | Title | Year | Price | State |
+-----+-----+-----+-----+-----+-----+
| b107d40e | 135 | With the Beatles | 1963 | 11.7 | Damaged |
| b20b120d | 135 | White Album CD2 | 1968 | 18.67 | Used |
| c009560d | 135 | Sgt. Pepper's Lonely... | 1967 | 15.89 | Used |
| c808330e | 135 | Revolver | 1966 | 16.1 | Used |
| c808330e | 135 | Sgt. Pepper's Lonely... | 1967 | 15.89 | Used |
```

[Line count: 6]

Q 11. Find CDs by 'AC DC' that came out in the 90s.

```
+-----+-----+-----+-----+-----+-----+
| CDDb | Artist_ID | Title | Year | Price | State |
+-----+-----+-----+-----+-----+-----+
| ac0bb00b | 4 | Ballbreaker | 1995 | 14.84 | Damaged |
| ab0ae80c | 4 | The Razors Edge | 1990 | 15.59 | Damaged |
| c1107b0c | 4 | AC/DC Live (CD1) | 1992 | 13.49 | New |
| 960e760b | 4 | AC/DC Live (CD2) | 1992 | 16.41 | New |
```

[Line count: 4]

Q 12. Find artists names who had a CD in 1991.

Name
Baton Rouge
Dusters
Calvin Russell
Chris Whitley

[Line count: 25]

Q 13. Find the sum of prices of all CD by Georges Brassens.

Hein
200.73000000000002

[Line count: 1]

Q 14. Find titles of song of the Rock genre.

Title
Jean Baltazaarr
Mona Lisa Klaxon
Le Sud
Louis

[Line count: 5504]

Q 15. List titles of songs whose genre description uses the word 'afric'.

Title
The girl in black
I can tell
Lonely in the dark
tesax chainsaw

[Line count: 334]

Q 16. Find the number of folk songs whose lyrics are not covered by copyright.

COUNT(Song.ID)
124

[Line count: 1]

Q 17. Find song titles written by Jacques Brel.

Title
Le Bon Dieu
Voir Un Ami Pleurer
Isabelle
Marieke

[Line count: 134]

Q 18. Find artists who have written the song 'Anybody Seen My Baby?'

Name
Mick Jagger
Keith Richards

[Line count: 2]

--

Q 19. Find the number of CDs with songs written by Mick Jagger.

[Line count: 1]

--

Q 20. Find the song list on the CD 'A Night at the Opera', in the order of their position.

[Line count: 12]

--

Q 21. Find name of artists who have not written a single song.

[Line count: 506]

--

Q 22. List songs performed by Lenny Kravitz that are present on David Bowie's CDs.

```

+-----+
|      Title      |
+-----+
| Buddha Of Suburbia |
+-----+

```

[Line count: 1]

Q 23. Find CDs that contain at least one song performed by an artist different from the artist releasing the disc.

```

+-----+-----+-----+-----+-----+-----+
| CDDB | Artist_ID | Title | Year | Price | State |
+-----+-----+-----+-----+-----+-----+
| fc0fd113 | 112 | Bar Aid | 1992 | 16.22 | Damaged |
| de0f4710 | 193 | L'espoir | 2008 | 15.12 | New |
| ca0b5311 | 8 | Billy Elliot | 2000 | 17.86 | Used |
| 9d0a3e0c | 8 | Labyrinth | 1986 | 16.03 | Damaged |
| 411222 | 8 | The Untouchables | 1985 | 15.52 | New |

```

[Line count: 37]

Q 24. Find CDs that contain at least one song written by an artist different from the artist releasing of the CD.

```

+-----+-----+-----+-----+-----+-----+
| CDDB | Artist_ID | Title | Year | Price | State |
+-----+-----+-----+-----+-----+-----+
| 8409a209 | 84 | Lust For Life | 1990 | 19.47 | Damaged |
| cc11560e | 178 | Contraband | 2004 | 10.89 | Used |
| b10cae0e | 80 | Wandering Spirit | 1992 | 19.42 | Damaged |
| c60e9a0f | 141 | The Best Of (Words A... | 1989 | 12.74 | Damaged |
| 511222 | 8 | The Untouchables | 1985 | 15.52 | New |

```

[Line count: 83]

Q 25. List the number and the average price of CD for every different state.

State	Average Price	Disc count
Damaged	15.09876470588235	170
Destroyed	14.603953488372092	43
New	14.825515695067253	223
Used	15.156416464891029	413

[Line count: 4]

Q 26. For every artist find the number of CD they have released. Display the results in the descending order of the number of CDs

Name	Number of CDs
The Rolling Stones	43
David Bowie	31
Renaud	21
Elliott Murphy	17

[Line count: 273]

Q 27. For every CD list its cddb number, its title and the number of songs it contains. Display only CD with at least 10 songs

CDDB	Title	Song number
030c7b12	02-La valse à mille ...	18
03115f11	A Bigger Bang	16
05100e11	Le Pelegrin	17
05109a14	Essentielles	20

[Line count: 688]

Q 28. For every genre find the number of CDs that contain a song of this genre. Mind not to count the same CD more than once. Display genres with more than 50 songs

Name	Disc count
Classique	51
Folk	111
Français	124
Rock	516

[Line count: 4]

Q 29. List the artists in the descending order of the average price of their CDs. List only those artists who have at least 4 CDs for which the average CD price is greater than 12.

Name	Average disc price
Les Wampas	16.771428571428572
Téléphone	16.695999999999998
Serge Gainsbourg	16.6325
Molodoi	16.588

[Line count: 61]

Q 30. Find CD whose list of songs is potentially incomplete. (Hint: compare the number of songs with the position of the last song).

CDDB	Title
200be716	Prophètes et Nains d...
24110621	Il faut tourner l'ap...
270d0015	04-Initials B.B.
2b11be14	St Patrick Spirit CD1

[Line count: 21]

Q 31. Find frequent collaborators. Any pair of artists who have performed a song on the same CD are collaborators. If there are at least 2 CDs, then it is a pair of frequent collaborators.

ID	Name	ID	Name
196	Tri Yann	207	Alan Stivell
196	Tri Yann	230	Gilles Servat
207	Alan Stivell	196	Tri Yann
207	Alan Stivell	230	Gilles Servat

[Line count: 8]
