

# Database Assignment 2: DDL and Java Database Access

---

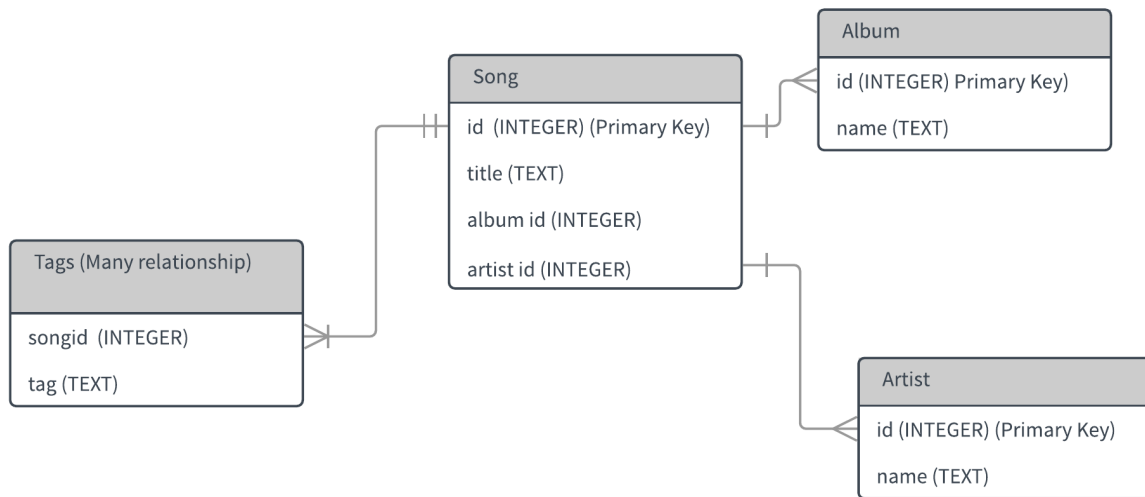
## 1) SQL code to create database tables, including constraints

---

```
1 CREATE TABLE albums (  
2     id INTEGER  
3     name TEXT  
4     PRIMARY KEY id  
5     UNIQUE (id))  
6  
7 CREATE TABLE artists (  
8     id INTEGER  
9     name TEXT  
10    PRIMARY KEY id  
11    UNIQUE (id))  
12  
13 CREATE TABLE songs (  
14     id INTEGER  
15     title TEXT  
16     artist ID REFERENCES artists(id)  
17     album ID REFERENCES albums(id)  
18     UNIQUE(title))  
19  
20 CREATE TABLE tags (  
21     songid INTEGER REFERENCES songs(id)  
22     tag TEXT  
23     UNIQUE (songid))
```

## 2) ER Diagram for the database

---



### 3) Java code for populating the database

See attached Java code. The CSV file was opened first in Excel and all extra commas were removed using find and replace

### 4) How many albums are listed?

```
1 SELECT COUNT(DISTINCT id) FROM albums;
```

492

### 5) How many albums are funk rock ones?

```
1 SELECT COUNT(DISTINCT album) FROM albums JOIN songs on albums.id = songs.id JOIN
tags ON songs.id = tags.songid WHERE tag LIKE '%funk rock%'
```

24

### 6) List, in alphabetical order, all the artists who have tracks regarded as 'new wave'

```
1 SELECT DISTINCT name FROM artists JOIN songs ON artists.id = songs.id JOIN tags
ON songs.id = tags.songid WHERE tag LIKE '%new wave%' ORDER BY name ASC
```

1. BEASTIE BOYS
2. BLONDIE
3. CLASH
4. COLDPLAY

5. CURE
6. DEBORAH HARRY
7. DEEP PURPLE
8. DEPECHE MODE
9. EURYTHMICS
10. FRANZ FERDINAND
11. JACKSON FIVE
12. JAM
13. JEFF BUCKLEY
14. LOU REED
15. NEW ORDER
16. NIRVANA
17. PATTI SMITH
18. PIXIES
19. POLICE
20. RADIOHEAD
21. R.E.M.
22. VELVET UNDERGROUND
23. VERVE
24. WEEZER
25. YEAH YEAH YEAHS

## 7) What is the numerical difference between songs with "love" in the title and those that are tagged with "love" that don't have it in the title?

```
1 | SELECT count(title) FROM songs JOIN tags ON tags.songid = songs.id WHERE title NOT LIKE '%LOVE%' AND tag LIKE '%love%';
```

110 songs with love and 144 songs tagged with love therefore the answer is 34

## 8) How many albums have at least one song with 'dog' in the title?

```
1 | SELECT count(distinct name) WHERE album JOIN songs ON songs.id = album.id WHERE title LIKE '%DOG%';
```

7

## 9) Are there more rhythmic songs than playful ones?

```
1 SELECT COUNT(id) FROM songs JOIN tags ON tags.songid = songs.id WHERE tag LIKE  
   '%rhythmic%';  
2 SELECT count(id) FROM songs JOIN tags ON tags.songid = songs.id WHERE tag LIKE  
   '%playful%';
```

Rhythmic: 871

Playful: 43

More rhythmic than playful