**20203데이터베이스설계특론**

**Advanced SQL Implementation**

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1. **Program description**
2. Entity Information:

We have two entities which are artists and songs.

Artists entity has 4 fields:

- id INT PIMARY KEY

- name VARCHAR(50) NOT NULL,

- type VARCHAR(10) NOT NULL,

- nationality VARCHAR(20) NOT NULL

Songs entity has 4 fields:

- id INT PRIMARY KEY

- title VARCHAR(50) NOT NULL

- release\_year INT NOT NULL

- artist\_id INT FOREIGN KEY

DROP TABLE IF EXISTS artists;  
 create table artists(  
 id int unsigned auto\_increment primary key,  
 name varchar(50) not null,  
 type varchar(50) not null,  
 nationality varchar(50) not null  
 );

DROP TABLE IF EXISTS songs;  
 create table songs(  
 Id int unsigned auto\_increment primary key,  
 title varchar(50) not null,  
 release\_year int not null,  
 artist\_id int unsigned not null,  
 constraint songs\_ibfk\_1  
 foreign key (artist\_id) references artists (id)  
 );

b. Program features:

- Find all songs

- Find a song by song id

- Insert new song

- Delete a song by song id

- Update a song by song id

- Count artists by artist id

1. **SQL Statement usage**
2. Find all song

SELECT \* FROM songs as s INNER JOIN artists as a on s.artist\_id = a.id

1. Find a song by song id

SELECT \* FROM songs as s INNER JOIN artists as a on s.artist\_id = a.id where s.id = ?

1. Insert new song

INSERT INTO songs(title, release\_year, artist\_id) VALUES(?,?,?)

1. Delete a song by song id

DELETE FROM songs as s WHERE s.id = ?

1. Update a song by song id

UPDATE songs as s SET title = ?, release\_year = ?, artist\_id = ? where s.id = ?

1. Count artists by artists type using SQL function

DROP FUNCTION IF EXISTS *countArtistBySongType*;  
CREATE FUNCTION *countArtistBySongType*(type\_name VARCHAR(50)) RETURNS INTEGER READS SQL DATA DETERMINISTIC BEGIN  
 DECLARE song\_type INTEGER;  
 SELECT *COUNT*(*\**) INTO song\_type FROM artists WHERE type = type\_name;  
 RETURN song\_type;  
END;