Music Database

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Project Description

- Music database that allows the user to...
  - View songs
  - Add albums/songs
  - Search for songs
    - Based on album title, song title, artist
    - Filter by genre
  - Sort song results
    - By song title or song duration
    - Ascending and descending is allowed
  - Create playlists with songs in the database
  - Delete songs
  - Reset button to make all songs to display and clear search parameters

Tables

```sql
create table Artist (
    aid INT auto_increment primary key,
    aname VARCHAR(30) NOT NULL
);
```
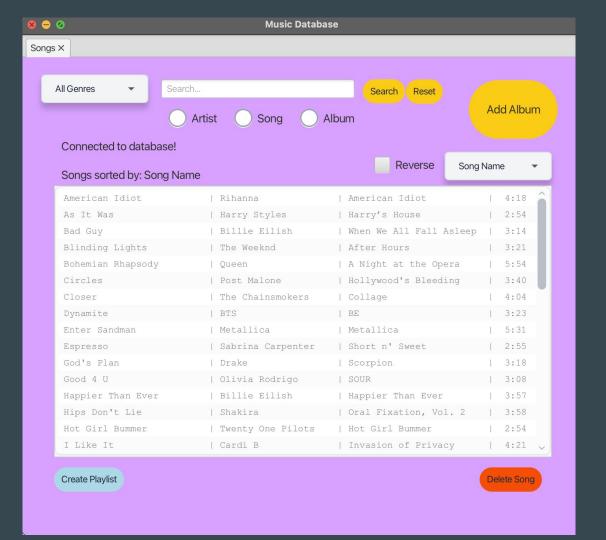
```sql
create table Song (
    sid INT auto_increment primary key,
    sname VARCHAR(30) NOT NULL,
    album VARCHAR(30) NOT NULL,
    genre ENUM(
        'pop','hip-hop','rap','country','reggae',
        'r&b','folk','blues','edm','classical',
        'rock','jazz','metal','punk','latin',
        'kpop','other'),
    length INT NOT NULL
);
```

Tables

```sql
create table Playlist (
    plid INT auto_increment primary key,
    plname VARCHAR(30)
);
```

```sql
create table Playlist_Song (
    plid INT,
    sid INT,
    primary key (plid, sid),
    song_order int not null,
    foreign key (plid) references Playlist(plid) on delete cascade,
    foreign key (sid) references Song(sid) on delete cascade
);
```

Demo

What Did We Learn?

- How to set up the environment, including:
    - Scene Builder
    - Github Repository
    - MySQL Workbench + connection
- How to use:
    - JavaFX library functions
    - SQL Queries through Java
    - JavaFX library components
        - ModalControllers and actionEvents
    - Java SceneBuilder
- How to work in a team successfully
- How to consistently dedicate time for a project

Major Difficulties

- Phase 1: Getting started
  - Which idea to do
  - Weren't sure where to start
  - Learning curve
- Phase 2: Getting familiar with Scene Builder and JavaFX
  - JavaFX library was confusing and all new for all of us
  - What they are and what we can do with them
- Phase 3: Implementing a reusable/understandable layout for our code
  - Since everyone was working on individual parts, it was hard to understand how the main functionalities were set up
- Implementing SQL commands through Java
- Lack of time