

Group Members: David(Jinho) Seo, Eftekher Husain, Leah Meza, Thierno Diallo
Prof. John Conner
CSc 336: Project 1
04/10/2019

DELTA: DOCUMENTATION

Brief Introduction

The initial intention of *Delta* is to be a digital music service that enables users to remotely source millions of songs. It works best on a laptop than other devices. In this application, multiple tracks can be combined into a completely personalized playlist. The vision of this software is to give offline access to the customer can enjoy their favorite songs anywhere, anytime.

This database design is re-creatable from SQL scripts. Below are the intended schemas and constraints that are required in order for the user to be able to enjoy service in a simple and smooth manner.

Schemas:

Artists(artist_id, name)

Genres(genre_id, name)

Albums(album_id, title, artist, genre)

Tracks(track_id, artist_id, name, album_id, genre_id, file)

Libraries(library_id, track_id, artist_id)

Playlist_tracks(track_id, artist_id, playlist_id)

Playlists(playlist_id, name)

Users(user_id, username, password, first_name, last_name, email)

Constraints:

$$\pi_{\text{artist_id}}(\text{Tracks}) \subseteq \pi_{\text{artist_id}}(\text{Artists})$$

$$\pi_{\text{album_id}}(\text{Tracks}) \subseteq \pi_{\text{album_id}}(\text{Albums})$$

$$\pi_{\text{genre_id}}(\text{Tracks}) \subseteq \pi_{\text{playlist_id}}(\text{Genre})$$

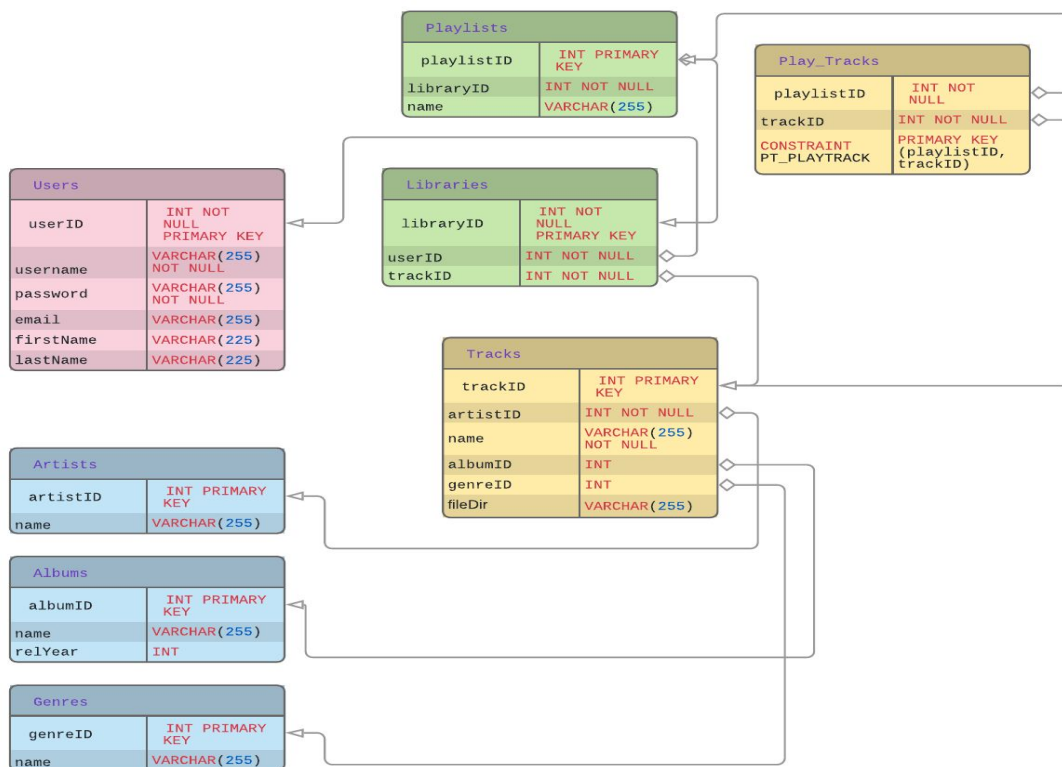
$$\pi_{\text{track_id}, \text{artist_id}}(\text{Playlist_tracks}) \subseteq \pi_{\text{track_id}, \text{artist_id}}(\text{Tracks})$$

$$\pi_{\text{playlist_id}}(\text{Playlist_tracks}) \subseteq \pi_{\text{playlist_id}}(\text{Playlists})$$

$$\pi_{\text{library_id}}(\text{Library}) \subseteq \pi_{\text{user_id}}(\text{Users})$$

$$\pi_{\text{track_id}, \text{artist_id}}() \subseteq \pi_{\text{track_id}, \text{artist_id}}(\text{Tracks})$$

ER diagram



Technical Requirements

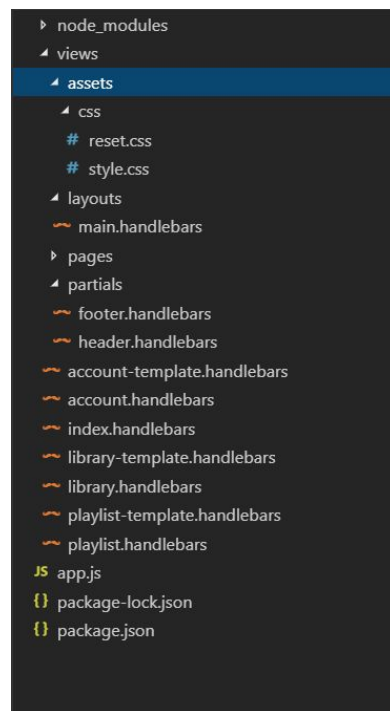
- Node JS platform for Building a structure and framework
- Node Package Manager(NPM) installation with the following dependencies.
 - body-parser: 1.18.3,
 - connect: 3.6.6,
 - cookie-parser: 1.4.4,
 - express: 4.16.4,
 - express-handlebars: 3.0.2,
 - mariadb: 2.0.3,
 - multer: 1.4.1,
 - mysql: 2.16.0
- MariaDB v10.3 for the database
- Git for the version control

Setting Up the Environment for Delta

(instruction steps based on the assumption that all the technical requirements are met)

- Download Project Zip file(project_delta_v1.zip) extract the file.

Recommended project folder hierarchy :



- Open Cmd prompt, connect mariaDB followed by DB command with localhost credential

```
Mysql -u root -p;
```

```
[Enter];           // password has not been set
```

```
USE DeltaMusic;
```

- Import sql file(DeltaMusic.sql) followed by command : \. [your local path]DeltaMusic.sql
- Install Node.js through the command prompt
- Install NPM with required packages with --save -dev command at the end, for the local use and devDependencies property.

```
Npm install packagename --save -dev
```

- Turning on the localhost server using port 3000, by using the command on command prompt:

```
node app.js
```

- Delta Music App's main index page starts on <http://localhost:3000/index>.

Music Page

In this page, the user can access My Library where they have option to create a playlist. The user can name the playlist and add songs from library. Any number of playlist can be created.

Playlist Page

The user is able to add song to the playlist and also delete song from the playlist. The User is also able to delete a playlist.

Utilizing Delta Music Properly

Once given access to the actual page where the user can play music or create a playlist of own preference. User can create any number of playlist. Once a playlist is created, the user can then add any number of songs to the playlist.

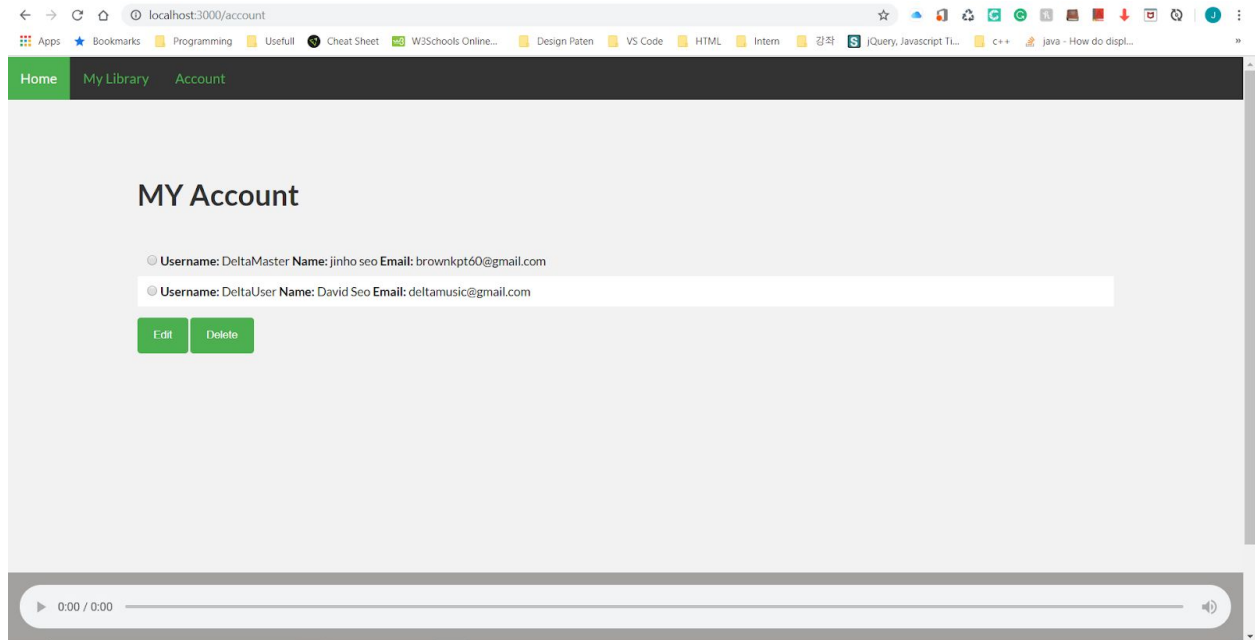
Delta: Verifying Correctness

The user should be able to create and delete a playlist consisting of multiple tracks. The user should be able to SELECT, INSERT, UPDATE, DELETE actions on the music page. The user should be able to insert or delete a song from a playlist.

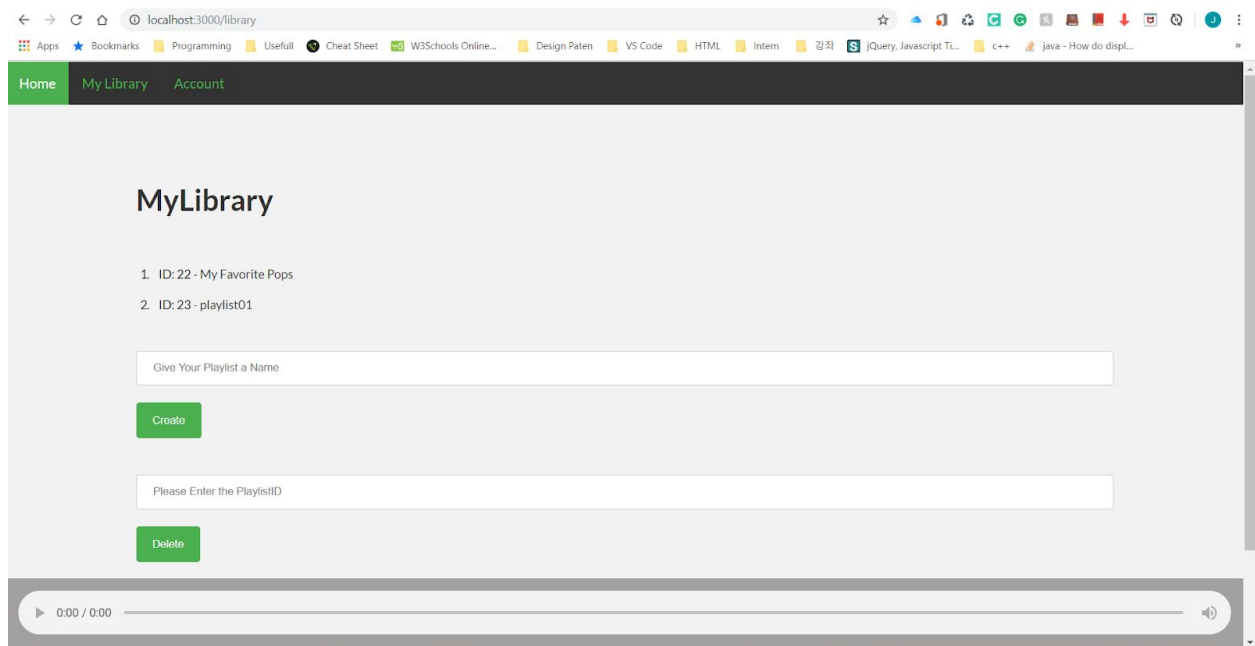
Delta Music Demo Instruction

The screenshot shows a web browser at localhost:3000/index. The application has a dark navigation bar with 'Home', 'My Library', and 'Account' links. The main content area is titled 'DELTA:Music'. On the left, there is a sign-up form with fields for Username (DeltaUser), Password (1234), Firstname (David), Lastname (Seo), and Email (deltamusic@gmail.com), followed by a green 'Sign up' button. On the right, there is a playlist management section with a list of songs: 'Going Bad (feat. Drake)', 'Nights Like This (feat. Ty Dolla Sign)', and 'Come Through and Chill (feat. J.Cole & Salaam Remi)'. Below the list is a dropdown menu and a green 'Add to the playlist' button. At the bottom, there is a media player interface showing a progress bar at 0:00 / 0:00 and a speaker icon.

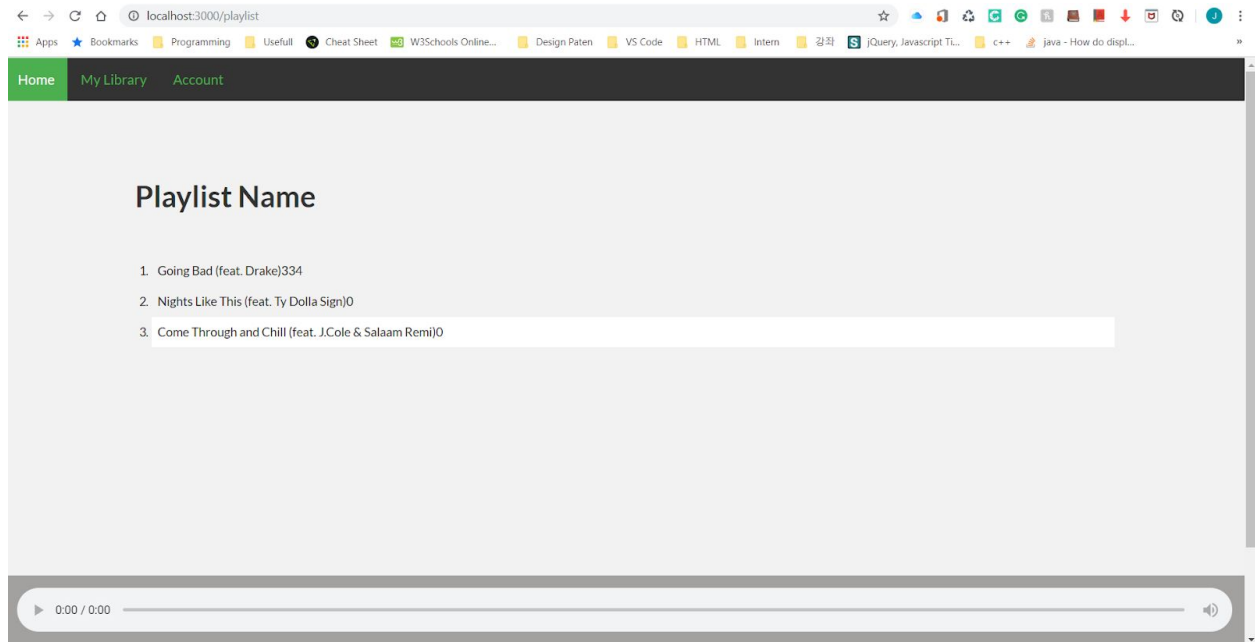
<main index page, user can sign-up by filling out the sign-up form>



<after sign-up, click on Account on the top nav bar to see retrived date from DB has been saved in Users table>



<Clicking on My Library user can Create playlist - entering the playlist name and it will appears with ID number and Playlist name. User also can delete the playlist entering ID number>



<Clicking on the playlist, the user can see the tracks that saved in the playlist>