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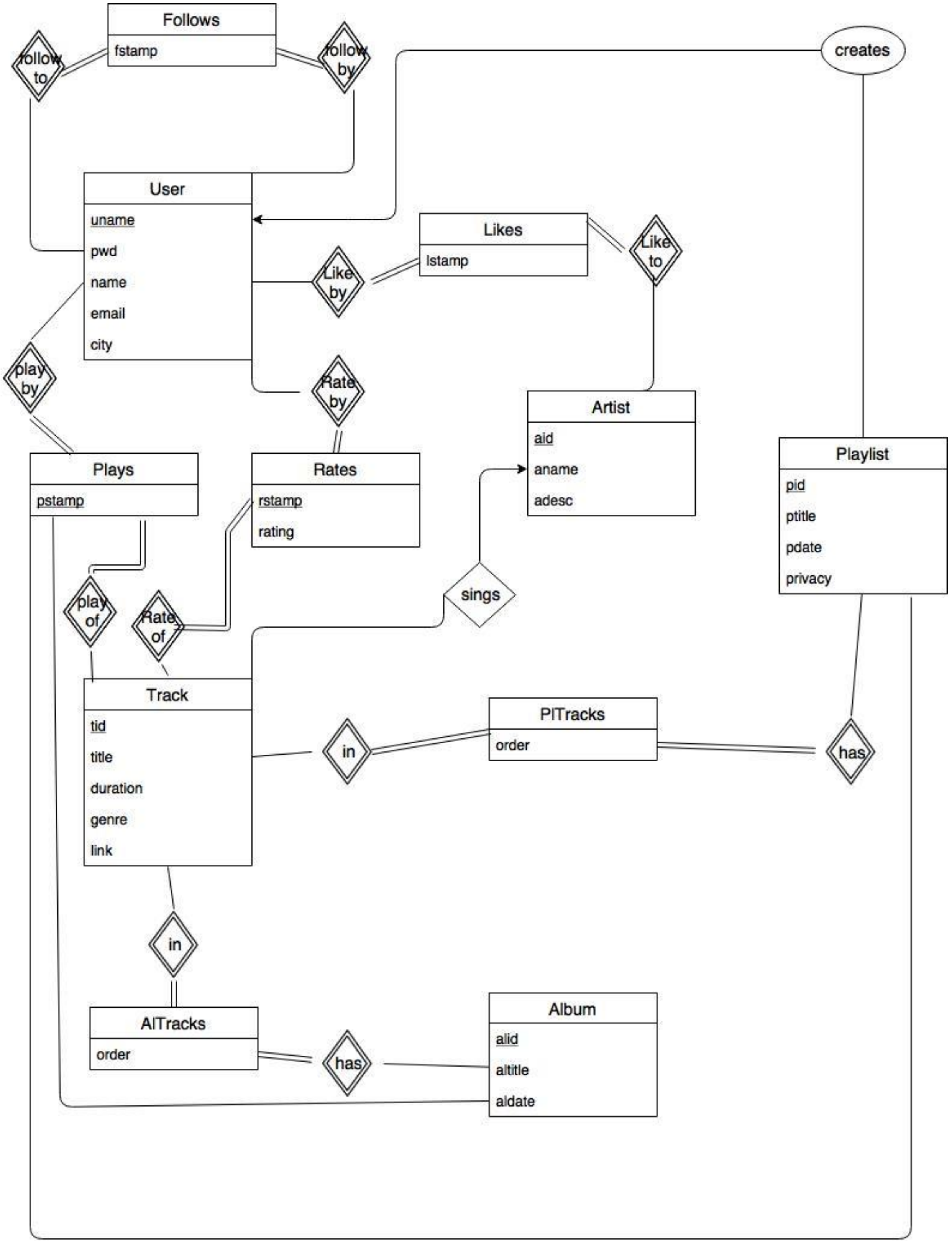
N14423018

Music Player is a new digital music service that enables users to remotely source millions of different songs on various record labels from a laptop, smartphone or other device. Once users sign up, they have a homepage. On this homepage there a list of customized songs that are suggested to the user. The user can see songs by Artists they have liked, they can revisit songs they have played in the past and they can also see current chart toppers. Users can also follow other users to see the public playlists they have created. The user can like artists and songs by these artists are shown as suggested tracks to the user. The user also has the option to create their own custom playlists. These playlists are shown to the followers if public or kept private. The user can also rate songs, these ratings are collated to find out chartbusters and shown to users as recommendations.

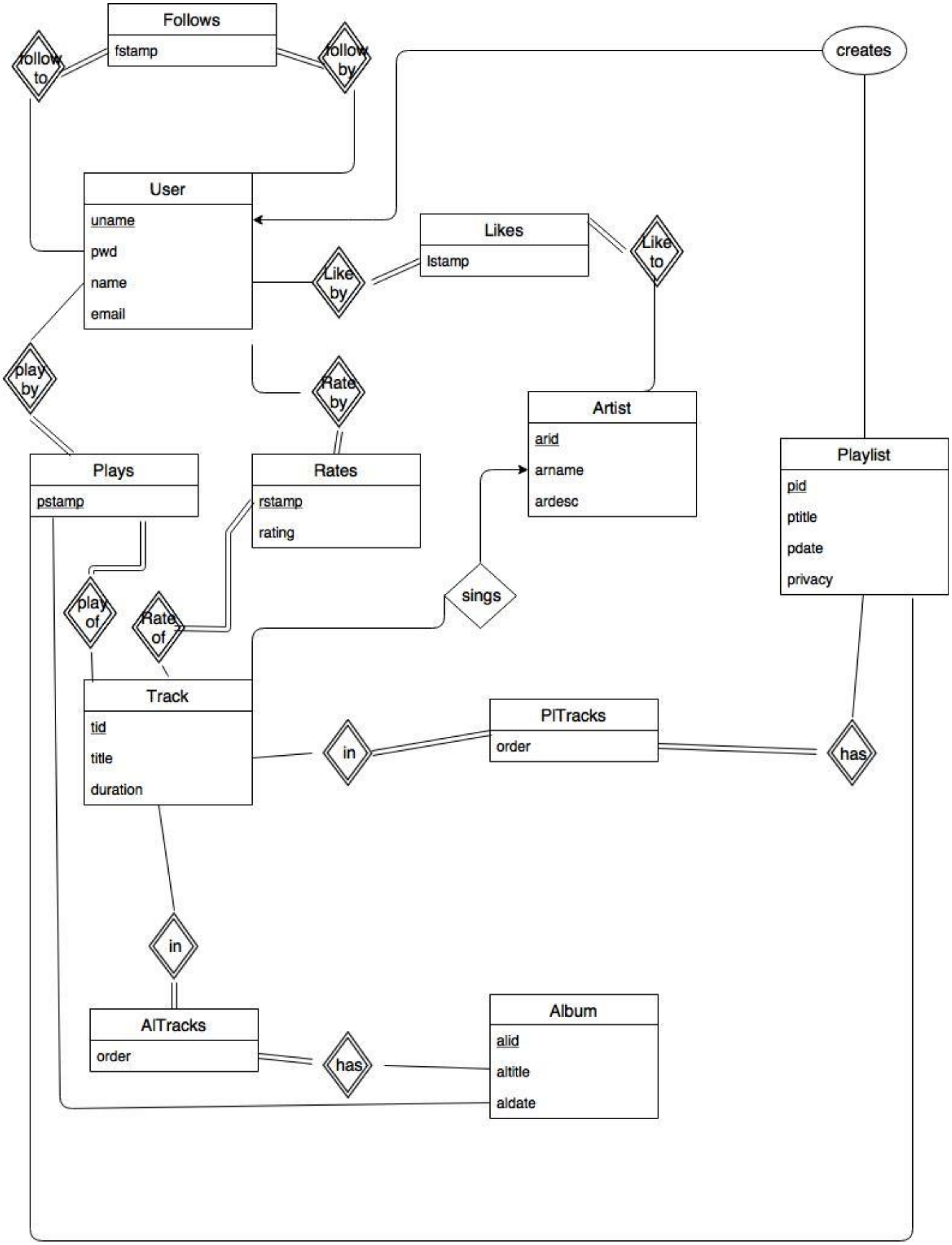
Original ER Diagram:


Follows
fstamp
follow to
follow by
creates
User
uname
pwd
name
email
city
Likes
lstamp
Like by
Like to
play by
Rate by
Artist
aid
aname
adesc
Playlist
pid
ptitle
pdate
privacy
Plays
pstamp
Rates
rstamp
rating
play of
Rate of
sings
Track
tid
title
duration
genre
link
in
PlTracks
order
has
in
AlTracks
order
has
Album
alid
altitle
aldate

Design Constraints:

1. Each User can play multiple tracks and each track can be played by many users.
2. The play table has attributes of userid, trackid, playlistid, albumid, and playtime. If the user plays a track directly we insert null into albumid and playid. If the user plays a track from a playlist then we insert playlistid and leave albumid as null. A similar design is user when a track is played from an album. This helps us track not only when a user played a track but also which playlist or album it was played from.
3. A user can rate a track and one track can be rated by many users
4. A user can follow multiple users and a user can also be followed by many users this is a relationship on itself.
5. An artist can be liked by many users and a user can like many artists
6. An artist can sing many track, however each track is sung only by one artist. If a track is sung by a band then the band is also modeled as an artist with details in the artist description containing the band details.
7. A user can create multiple playlists, however a playlist can be created by only one user
8. A playlist can contain many track and a track can be in many playlists
9. A playlist contains tracks in an order ordered using ‘order’ from plTracks
10. An album can contain many tracks and a track can be in many albums
11. Albums don’t have an ordering for tracks and are added from the backend while playlists are user generated

New ER Diagram:



Changes in ER:

Our ER and schema underwent very few changes as the design we prepared initially was enough to model the website. The changes that were made were:

1. User table no longer has city as we didn't require it for any functionality
2. Genre was removed from tracks as this was now a part of the artist description
3. Link to fetch the track was removed from tracks as trackid itself contained the link to fetch the track.

Apart from this the ER and Schema remained same as out initially design.

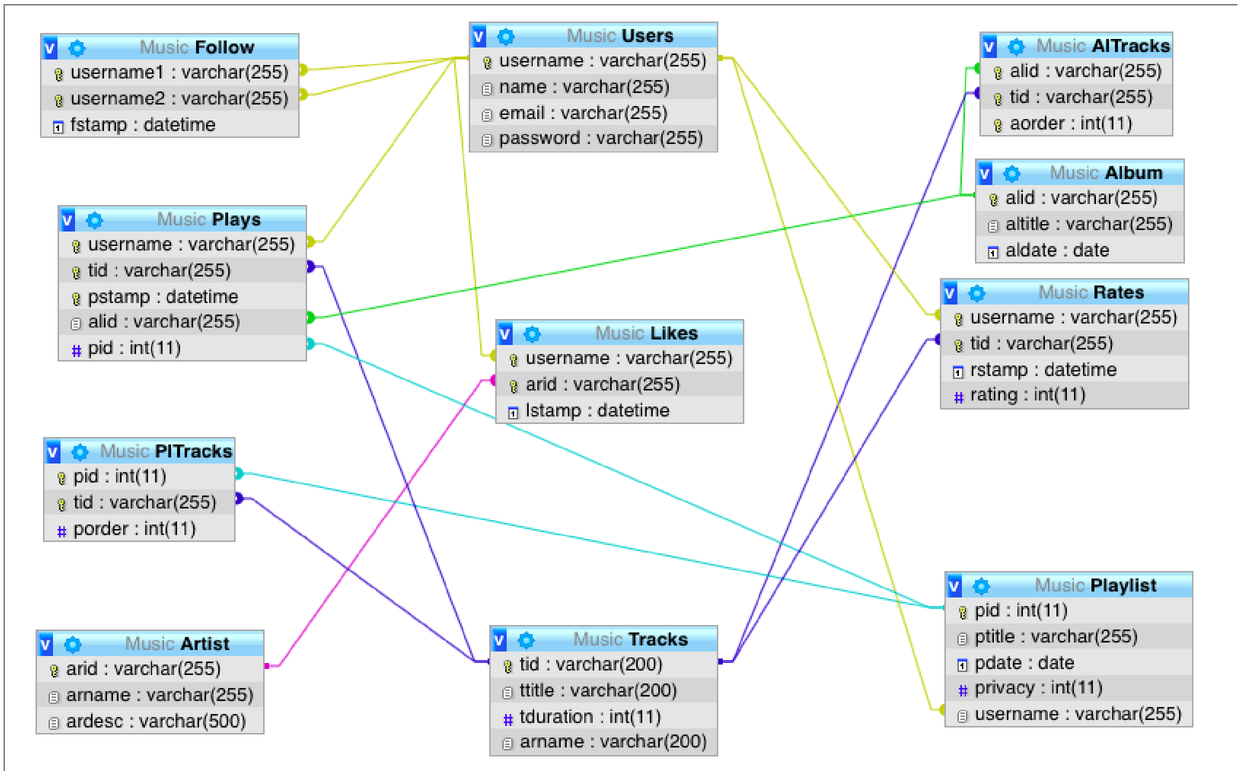
Old Schema:

User (uname , pwd , name , email , city)
Artist (aid, aname , adesc)
Album (alid , altitle , aldate)
Track (tid , title , duration , genre , link)
Playlist (pid , ptitle , pdate , privacy , uname)
PlTracks (pid , tid , porder)
AlTracks (alid , tid , aorder)
Plays (uname , tid , pstamp, alid, pid)
Rates (uname , tid , rstamp , rating)
Likes (uname , aid, lstamp)
Follow (uname1 , uname2 , fstamp)

New Schema:

User (username , password, name , email)
Artist (arid, arname , ardesc)
Album (alid , altitle , aldate)
Track (tid , ttitle , tduration)
Playlist (pid , ptitle , pdate , privacy , username)
PlTracks (pid , tid , porder)
AlTracks (alid , tid , aorder)
Plays (username , tid , pstamp, alid, pid)
Rates (username , tid , rstamp , rating)
Likes (username , arid, lstamp)
Follow (username1 , username2 , fstamp)

The Schema details are as shown below:



Music Follow
username1 : varchar(255)
username2 : varchar(255)
fstamp : datetime

Music Users
username : varchar(255)
name : varchar(255)
email : varchar(255)
password : varchar(255)

Music AlTracks
alid : varchar(255)
tid : varchar(255)
aorder : int(11)

Music Album
alid : varchar(255)
altitle : varchar(255)
aldate : date

Music Plays
username : varchar(255)
tid : varchar(255)
pstamp : datetime
alid : varchar(255)
pid : int(11)

Music Likes
username : varchar(255)
arid : varchar(255)
lstamp : datetime

Music Rates
username : varchar(255)
tid : varchar(255)
rstamp : datetime
rating : int(11)

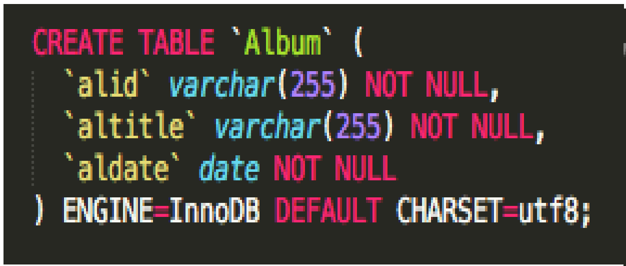
Music PlTracks
pid : int(11)
tid : varchar(255)
porder : int(11)

Music Playlist
pid : int(11)
ptitle : varchar(255)
pdate : date
privacy : int(11)
username : varchar(255)

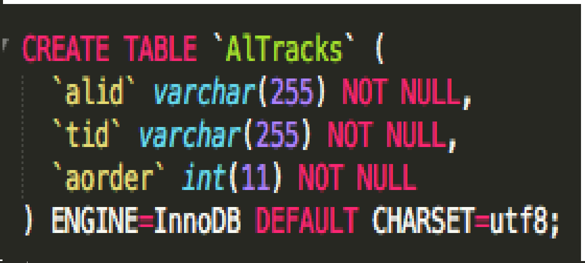
Music Artist
arid : varchar(255)
arname : varchar(255)
ardesc : varchar(500)

Music Tracks
tid : varchar(200)
ttitle : varchar(200)
tduration : int(11)
arname : varchar(200)

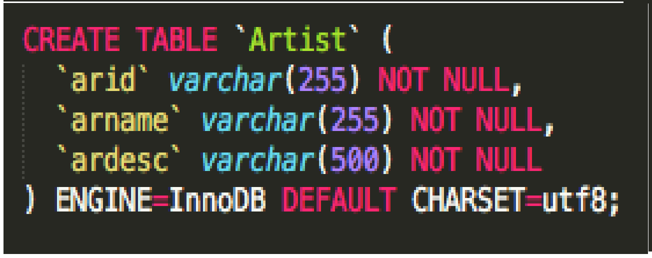
Table Creation:



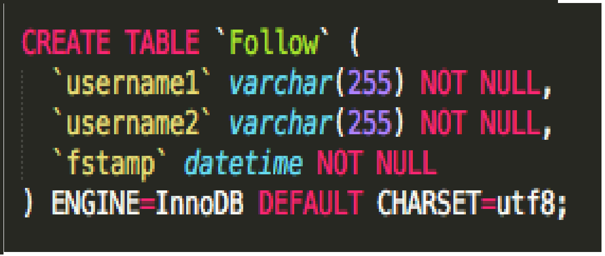
```
CREATE TABLE `Album` (
  `alid` varchar(255) NOT NULL,
  `altitle` varchar(255) NOT NULL,
  `aldate` date NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```



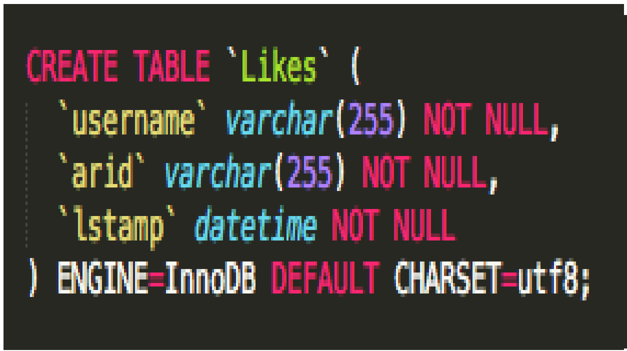
```
CREATE TABLE `AlTracks` (
  `alid` varchar(255) NOT NULL,
  `tid` varchar(255) NOT NULL,
  `aorder` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```



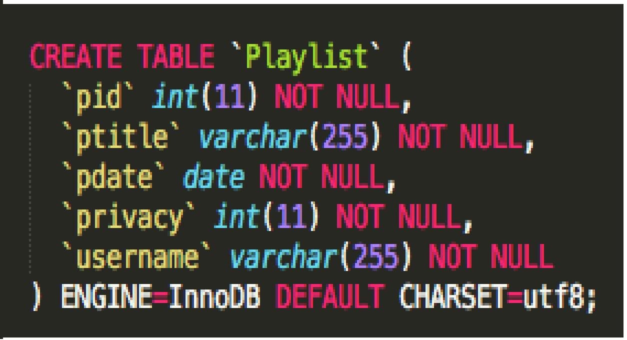
```
CREATE TABLE `Artist` (
  `arid` varchar(255) NOT NULL,
  `arname` varchar(255) NOT NULL,
  `ardesc` varchar(500) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```



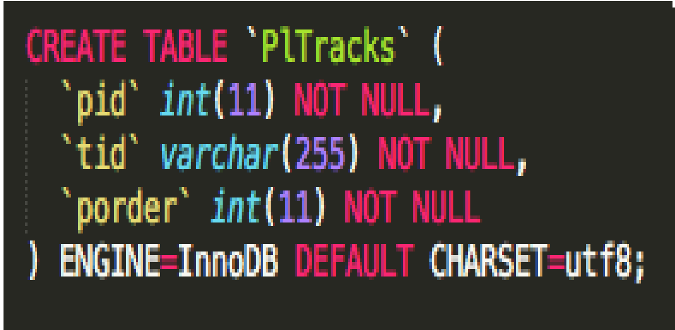
```
CREATE TABLE `Follow` (
  `username1` varchar(255) NOT NULL,
  `username2` varchar(255) NOT NULL,
  `fstamp` datetime NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```



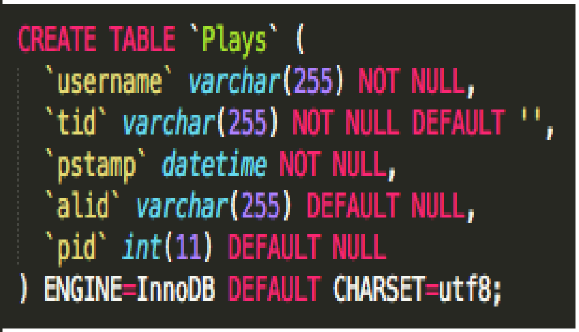
```
CREATE TABLE `Likes` (
  `username` varchar(255) NOT NULL,
  `arid` varchar(255) NOT NULL,
  `lstamp` datetime NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```



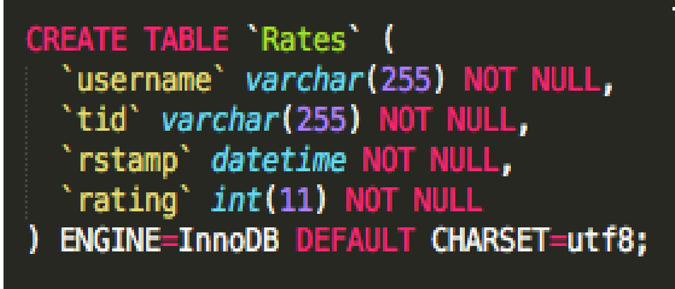
```
CREATE TABLE `Playlist` (
  `pid` int(11) NOT NULL,
  `ptitle` varchar(255) NOT NULL,
  `pdate` date NOT NULL,
  `privacy` int(11) NOT NULL,
  `username` varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```



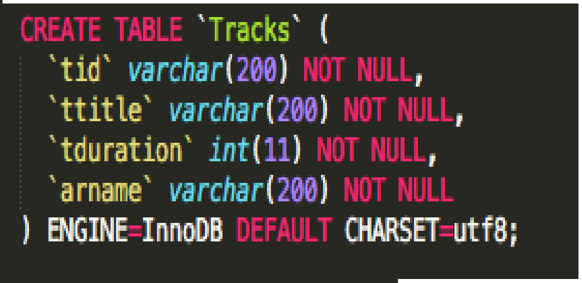
```
CREATE TABLE `PlTracks` (
  `pid` int(11) NOT NULL,
  `tid` varchar(255) NOT NULL,
  `porder` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```



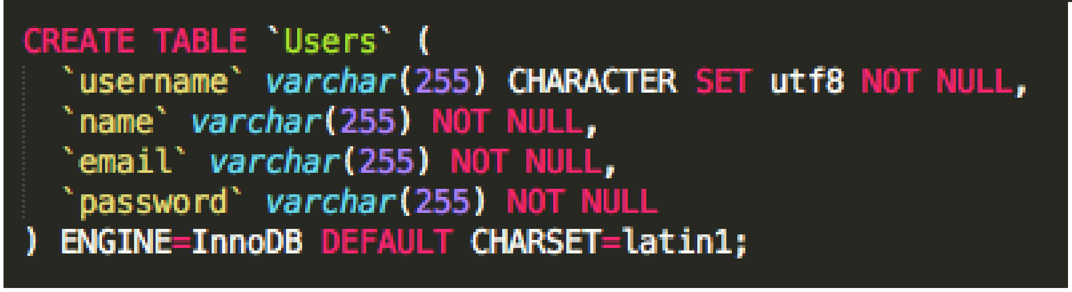
```
CREATE TABLE `Plays` (
  `username` varchar(255) NOT NULL,
  `tid` varchar(255) NOT NULL DEFAULT '',
  `pstamp` datetime NOT NULL,
  `alid` varchar(255) DEFAULT NULL,
  `pid` int(11) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```



```
CREATE TABLE `Rates` (
  `username` varchar(255) NOT NULL,
  `tid` varchar(255) NOT NULL,
  `rstamp` datetime NOT NULL,
  `rating` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

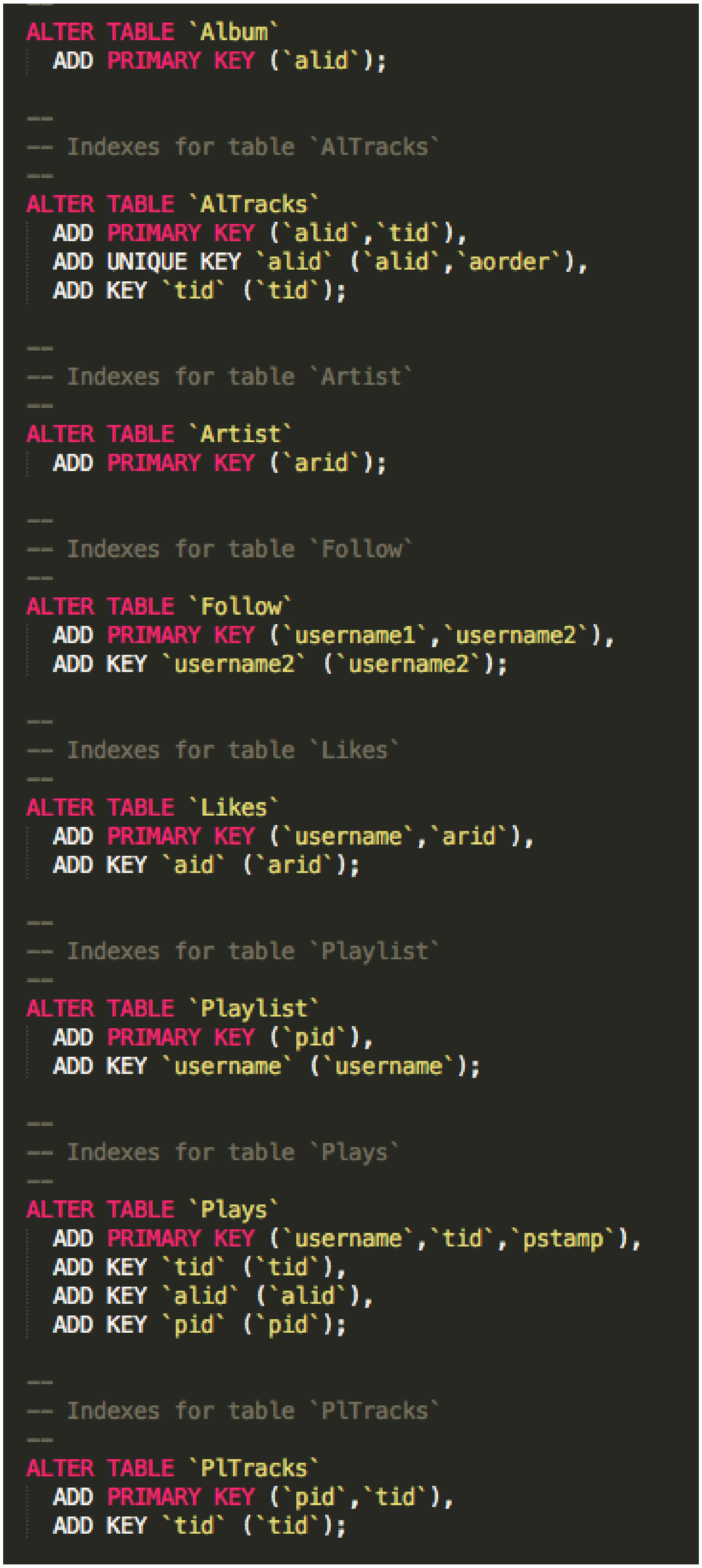


```
CREATE TABLE `Tracks` (
  `tid` varchar(200) NOT NULL,
  `ttitle` varchar(200) NOT NULL,
  `tduration` int(11) NOT NULL,
  `arname` varchar(200) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

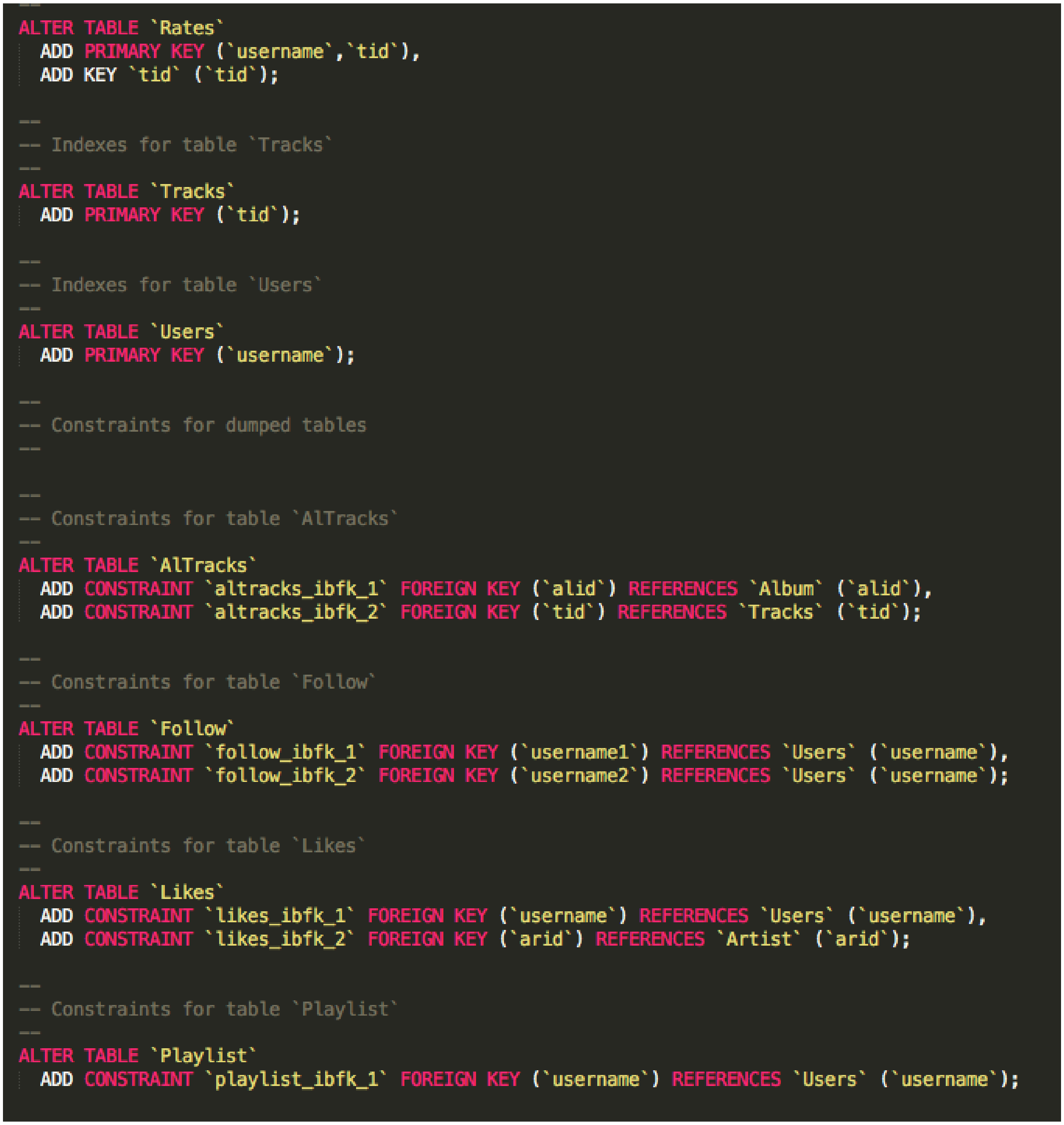


```
CREATE TABLE `Users` (
  `username` varchar(255) CHARACTER SET utf8 NOT NULL,
  `name` varchar(255) NOT NULL,
  `email` varchar(255) NOT NULL,
  `password` varchar(255) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

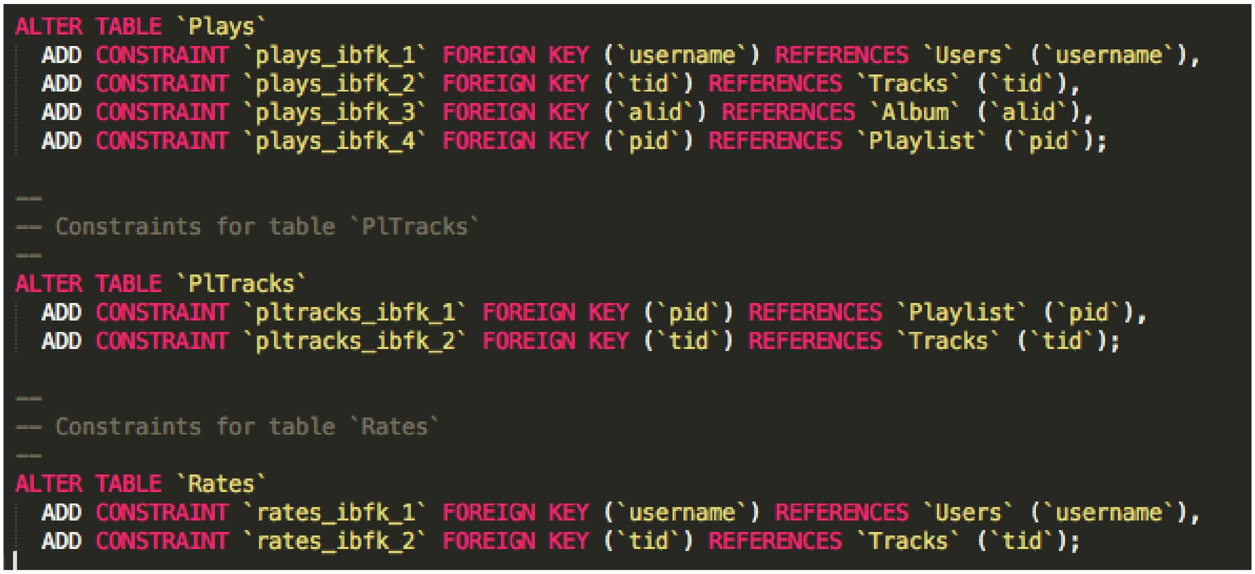
Constraints Addition:



```
--
ALTER TABLE `Album`
  ADD PRIMARY KEY (`alid`);

--
-- Indexes for table `AlTracks`
--
ALTER TABLE `AlTracks`
  ADD PRIMARY KEY (`alid`,`tid`),
  ADD UNIQUE KEY `alid` (`alid`,`aorder`),
  ADD KEY `tid` (`tid`);

--
-- Indexes for table `Artist`
--
ALTER TABLE `Artist`
  ADD PRIMARY KEY (`arid`);

--
-- Indexes for table `Follow`
--
ALTER TABLE `Follow`
  ADD PRIMARY KEY (`username1`,`username2`),
  ADD KEY `username2` (`username2`);

--
-- Indexes for table `Likes`
--
ALTER TABLE `Likes`
  ADD PRIMARY KEY (`username`,`arid`),
  ADD KEY `aid` (`arid`);

--
-- Indexes for table `Playlist`
--
ALTER TABLE `Playlist`
  ADD PRIMARY KEY (`pid`),
  ADD KEY `username` (`username`);

--
-- Indexes for table `Plays`
--
ALTER TABLE `Plays`
  ADD PRIMARY KEY (`username`,`tid`,`pstamp`),
  ADD KEY `tid` (`tid`),
  ADD KEY `alid` (`alid`),
  ADD KEY `pid` (`pid`);

--
-- Indexes for table `PlTracks`
--
ALTER TABLE `PlTracks`
  ADD PRIMARY KEY (`pid`,`tid`),
  ADD KEY `tid` (`tid`);
```



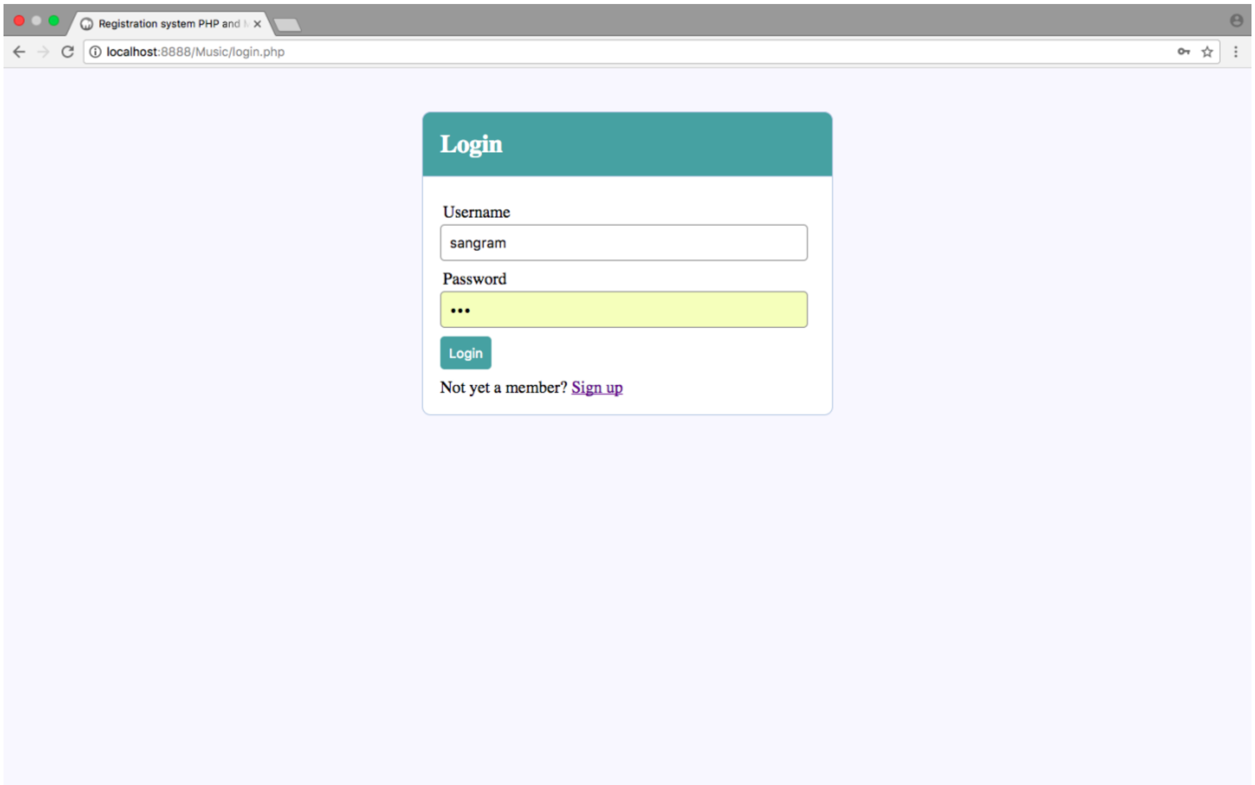
```
--
ALTER TABLE `Rates`
  ADD PRIMARY KEY (`username`,`tid`),
  ADD KEY `tid` (`tid`);

--
-- Indexes for table `Tracks`
--
ALTER TABLE `Tracks`
  ADD PRIMARY KEY (`tid`);

--
-- Indexes for table `Users`
--
ALTER TABLE `Users`
  ADD PRIMARY KEY (`username`);

--
-- Constraints for dumped tables
--

--
-- Constraints for table `AlTracks`
--
ALTER TABLE `AlTracks`
  ADD CONSTRAINT `altracks_ibfk_1` FOREIGN KEY (`alid`) REFERENCES `Album` (`alid`),
  ADD CONSTRAINT `altracks_ibfk_2` FOREIGN KEY (`tid`) REFERENCES `Tracks` (`tid`);

--
-- Constraints for table `Follow`
--
ALTER TABLE `Follow`
  ADD CONSTRAINT `follow_ibfk_1` FOREIGN KEY (`username1`) REFERENCES `Users` (`username`),
  ADD CONSTRAINT `follow_ibfk_2` FOREIGN KEY (`username2`) REFERENCES `Users` (`username`);

--
-- Constraints for table `Likes`
--
ALTER TABLE `Likes`
  ADD CONSTRAINT `likes_ibfk_1` FOREIGN KEY (`username`) REFERENCES `Users` (`username`),
  ADD CONSTRAINT `likes_ibfk_2` FOREIGN KEY (`arid`) REFERENCES `Artist` (`arid`);

--
-- Constraints for table `Playlist`
--
ALTER TABLE `Playlist`
  ADD CONSTRAINT `playlist_ibfk_1` FOREIGN KEY (`username`) REFERENCES `Users` (`username`);
```



```
ALTER TABLE `Plays`
  ADD CONSTRAINT `plays_ibfk_1` FOREIGN KEY (`username`) REFERENCES `Users` (`username`),
  ADD CONSTRAINT `plays_ibfk_2` FOREIGN KEY (`tid`) REFERENCES `Tracks` (`tid`),
  ADD CONSTRAINT `plays_ibfk_3` FOREIGN KEY (`alid`) REFERENCES `Album` (`alid`),
  ADD CONSTRAINT `plays_ibfk_4` FOREIGN KEY (`pid`) REFERENCES `Playlist` (`pid`);

--
-- Constraints for table `PlTracks`
--
ALTER TABLE `PlTracks`
  ADD CONSTRAINT `pltracks_ibfk_1` FOREIGN KEY (`pid`) REFERENCES `Playlist` (`pid`),
  ADD CONSTRAINT `pltracks_ibfk_2` FOREIGN KEY (`tid`) REFERENCES `Tracks` (`tid`);

--
-- Constraints for table `Rates`
--
ALTER TABLE `Rates`
  ADD CONSTRAINT `rates_ibfk_1` FOREIGN KEY (`username`) REFERENCES `Users` (`username`),
  ADD CONSTRAINT `rates_ibfk_2` FOREIGN KEY (`tid`) REFERENCES `Tracks` (`tid`);
```

Description:

1. Login Page



Login

Username

sangram

Password

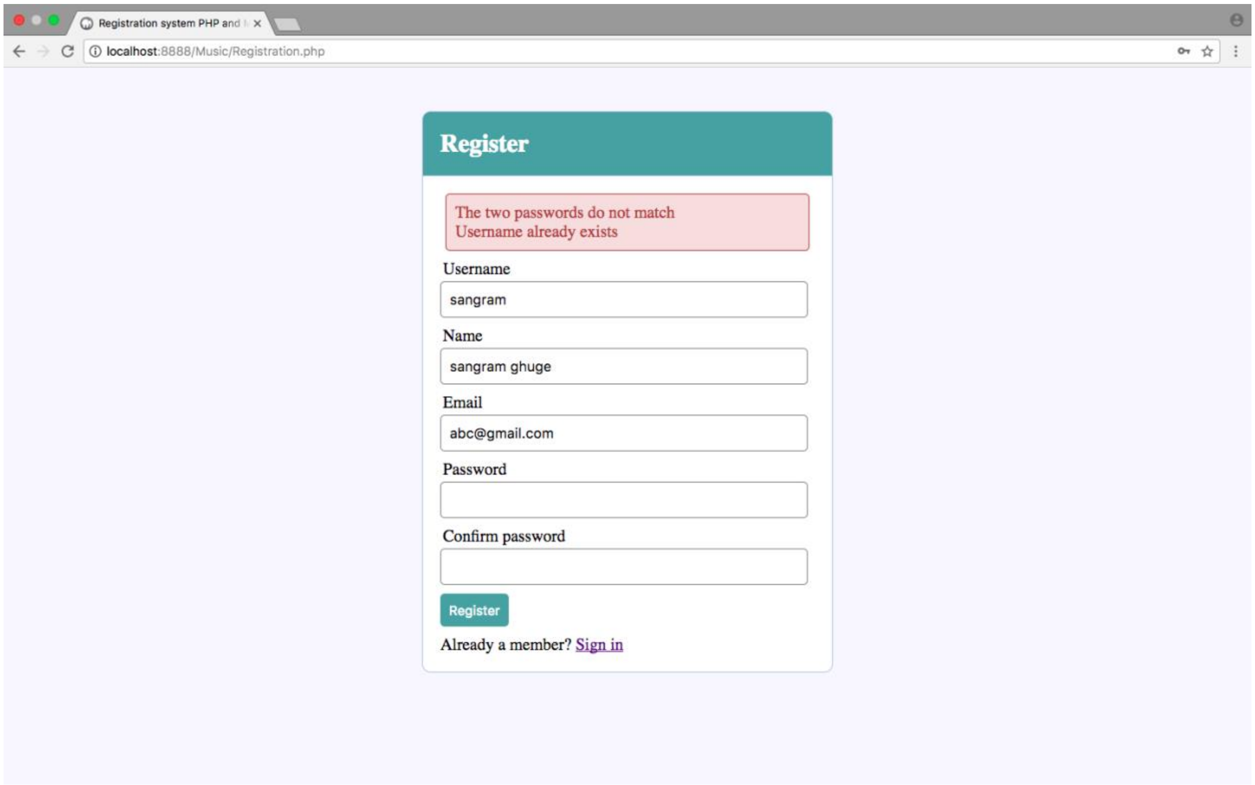
•••

Login

Not yet a member? Sign up

The login page is used by a registered user to log in to the website. If the user is already logged in it will redirect him/her to the home page. If the user is not yet a member there is an option to sign up.

2. Register Page



Registration system PHP and
localhost:8888/Music/Registration.php
Register

Register

The two passwords do not match
Username already exists

Username: sangram

Name: sangram ghuge

Email: abc@gmail.com

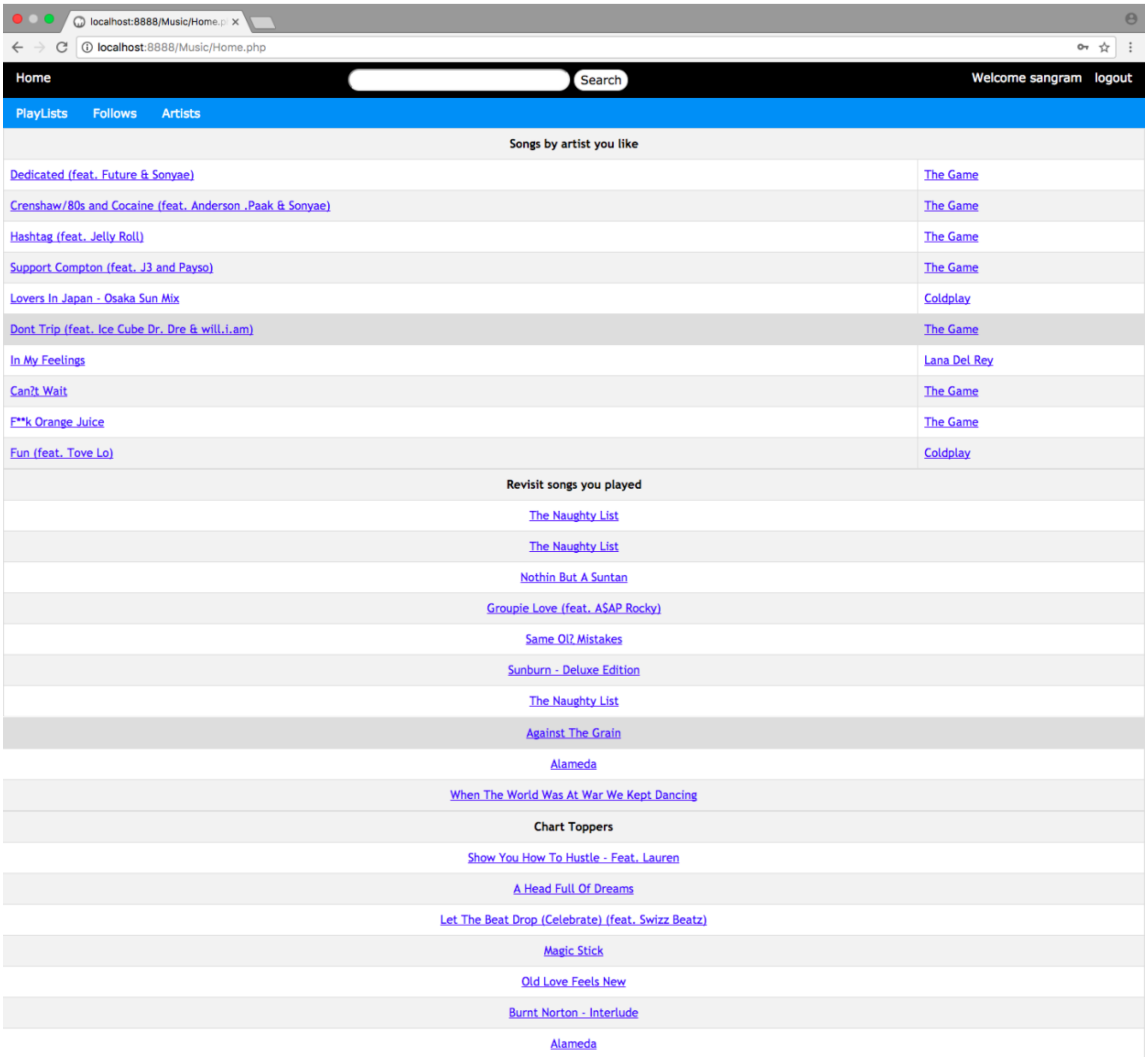
Password:

Confirm password:

Already a member? Sign in

The user uses this page to create a new account. The username needs to be unique and a prompt gibes an error message if the username already exists. We also verify if the passwords match and if the email ID is a valid format email ID. Once the user registers, the details are added to the database using MD5 encryption and the user is redirected to the home page.

3. The Home page



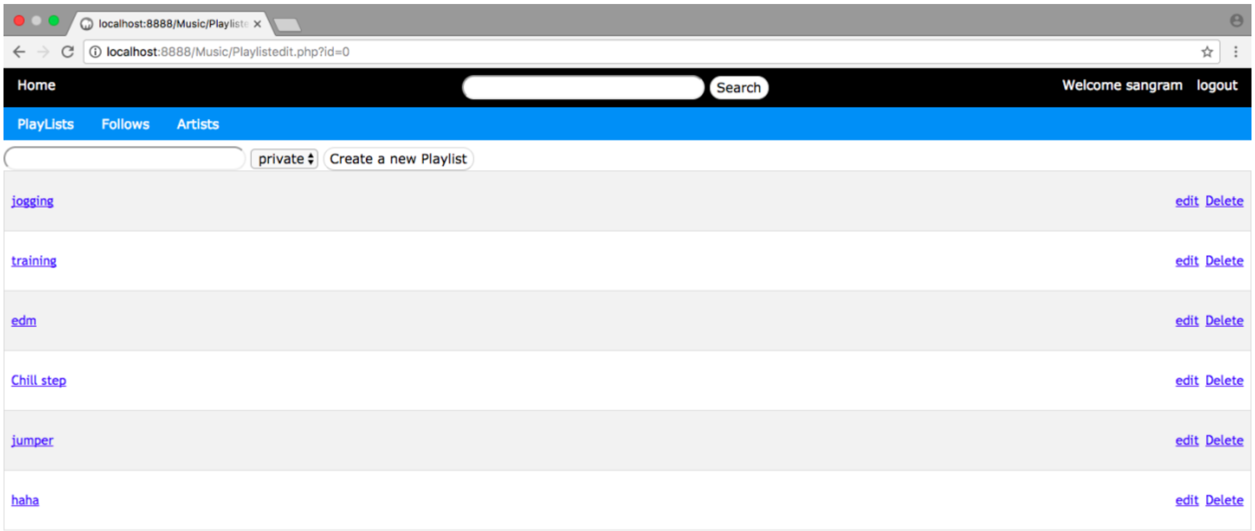
Songs by artist you like	
Dedicated (feat. Future & Sonyae)	The Game
Crenshaw/80s and Cocaine (feat. Anderson .Paak & Sonyae)	The Game
Hashtag (feat. Jelly Roll)	The Game
Support Compton (feat. J3 and Payso)	The Game
Lovers In Japan - Osaka Sun Mix	Coldplay
Dont Trip (feat. Ice Cube Dr. Dre & will.i.am)	The Game
In My Feelings	Lana Del Rey
Can?t Wait	The Game
F**k Orange Juice	The Game
Fun (feat. Tove Lo)	Coldplay
Revisit songs you played	
The Naughty List	
The Naughty List	
Nothin But A Suntan	
Groupie Love (feat. A$AP Rocky)	
Same Ol? Mistakes	
Sunburn - Deluxe Edition	
The Naughty List	
Against The Grain	
Alameda	
When The World Was At War We Kept Dancing	
Chart Toppers	
Show You How To Hustle - Feat. Lauren	
A Head Full Of Dreams	
Let The Beat Drop (Celebrate) (feat. Swizz Beatz)	
Magic Stick	
Old Love Feels New	
Burnt Norton - Interlude	
Alameda	

The Home Page has the users feed. The feed consists of 3 categories of suggestions.

a) Songs by artists you like – This area shows you songs by your liked artists which you haven't yet played. It is a song suggestion for your likes.
b) Revisit songs you played – This area takes songs you have already played and shows you 10 of the random songs. This is like song history but randomized to show only ten so you can revisit a song you have played.
c) Chart Toppers – This are shows songs that are quite popular. It takes the ratings of the songs by all user to show the songs with the highest ratings.

The top bar in black is constant through all web pages. It gives you options to go home, logout or search. Each of the option in the blue bar navigates to a different section.

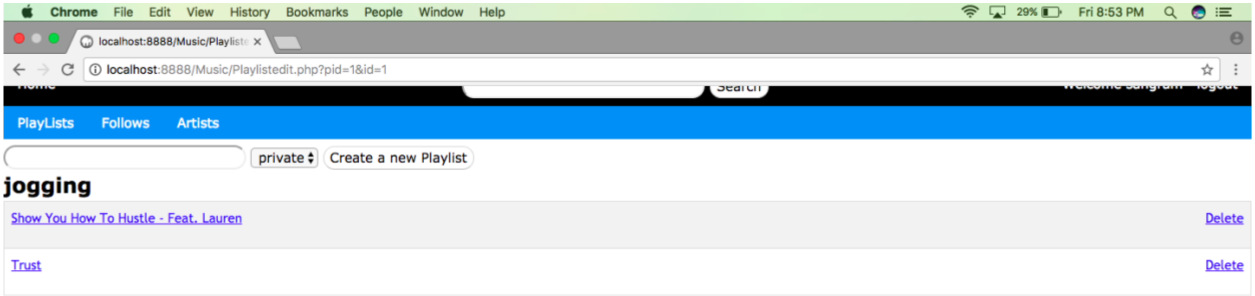
4. The Playlists Page



jogging	edit Delete
training	edit Delete
edm	edit Delete
Chill step	edit Delete
jumper	edit Delete
haha	edit Delete

This page lists all your personal playlists. It has the option to create a new playlist, edit a play list or delete a playlist.

5. **Create/Edit a Playlist**

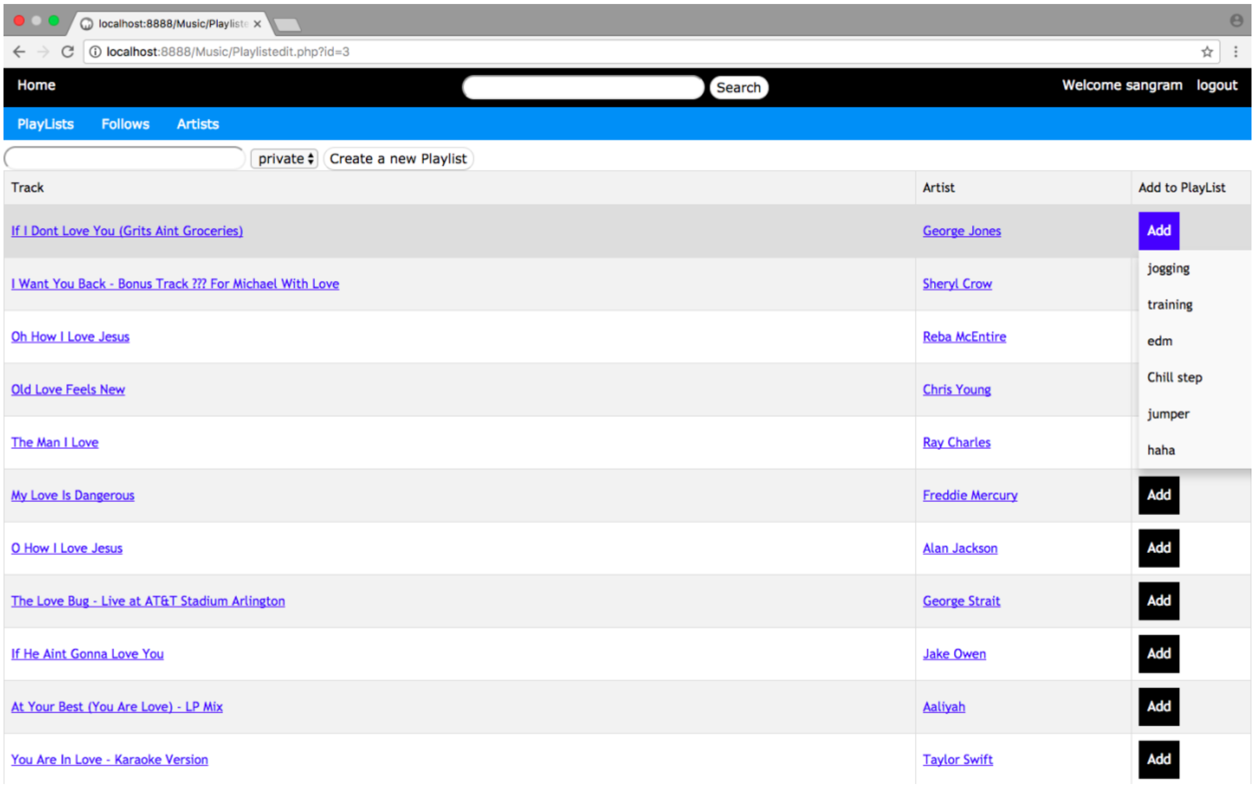

Chrome File Edit View History Bookmarks People Window Help
29%
Fri 8:53 PM
localhost:8888/Music/Playliste
localhost:8888/Music/Playlistedit.php?pid=1&id=1
PlayLists
Follows
Artists
private
Create a new Playlist

jogging

Show You How To Hustle - Feat. Lauren	Delete
Trust	Delete

Edit a Playlist gives you options to delete songs from your playlist

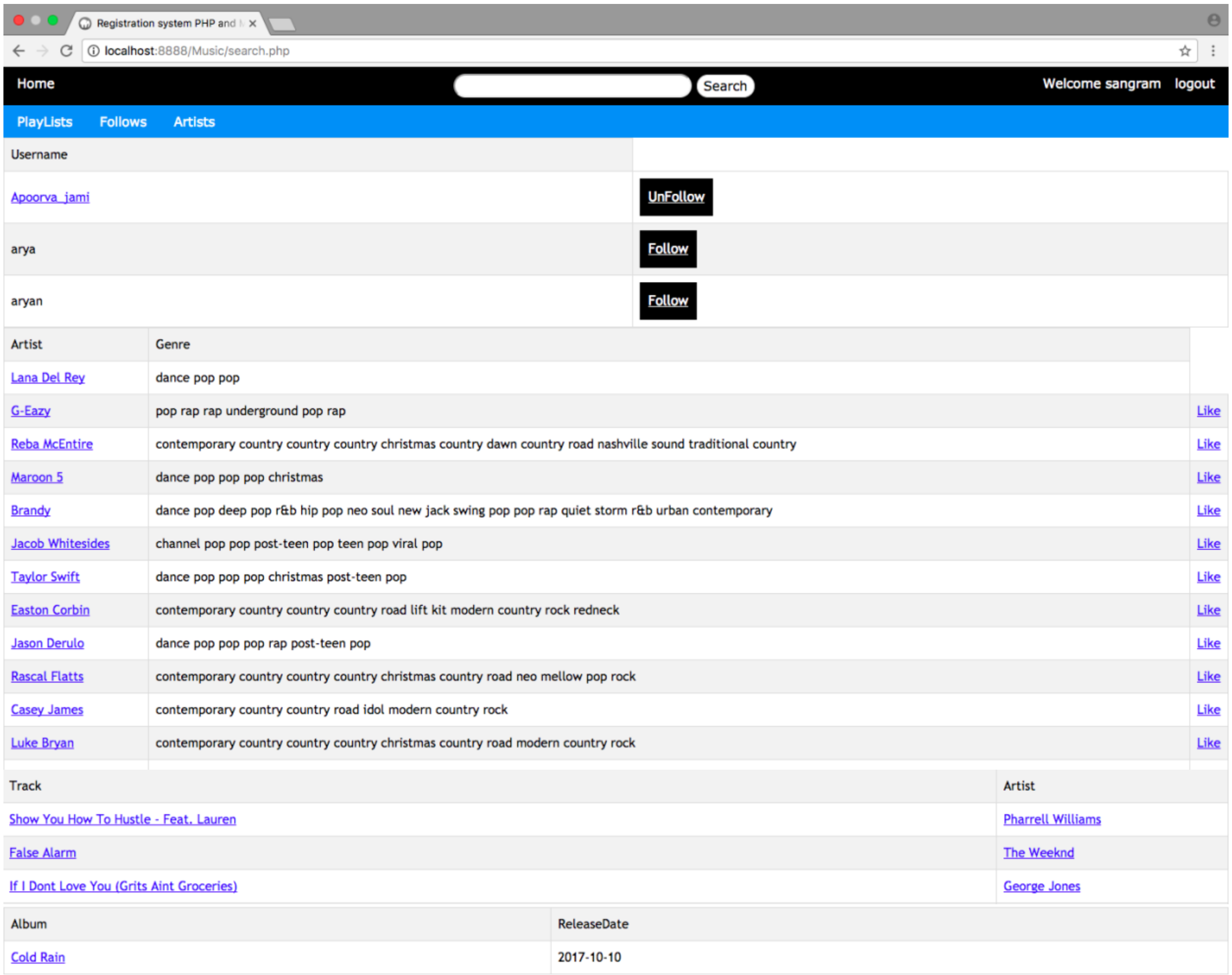
6. **Add songs to a playlist**



Track	Artist	Add to PlayList
If I Dont Love You (Grits Aint Groceries)	George Jones	Add
I Want You Back - Bonus Track ??? For Michael With Love	Sheryl Crow	
Oh How I Love Jesus	Reba McEntire	
Old Love Feels New	Chris Young	
The Man I Love	Ray Charles	
My Love Is Dangerous	Freddie Mercury	Add
O How I Love Jesus	Alan Jackson	Add
The Love Bug - Live at AT&T Stadium Arlington	George Strait	Add
If He Aint Gonna Love You	Jake Owen	Add
At Your Best (You Are Love) - LP Mix	Aaliyah	Add
You Are In Love - Karaoke Version	Taylor Swift	Add

In order to add songs to your playlist. You need to search for the song using the search bar. Normally the search bar searches for users, albums, tracks etc. However from inside the context of edit a playlist, the search bar changes functionality to only search songs and gives you the option to add any of those songs searched to the playlists. Hover over the add button and choose the playlist you want to add to.

7. The Search Bar



Username	
Apoorva_jami	UnFollow
arya	Follow
aryan	Follow

Artist	Genre	
Lana Del Rey	dance pop pop	
G-Eazy	pop rap rap underground pop rap	Like
Reba McEntire	contemporary country country country christmas country dawn country road nashville sound traditional country	Like
Maroon 5	dance pop pop pop christmas	Like
Brandy	dance pop deep pop r&b hip pop neo soul new jack swing pop pop rap quiet storm r&b urban contemporary	Like
Jacob Whitesides	channel pop pop post-teen pop teen pop viral pop	Like
Taylor Swift	dance pop pop pop christmas post-teen pop	Like
Easton Corbin	contemporary country country country road lift kit modern country rock redneck	Like
Jason Derulo	dance pop pop pop rap post-teen pop	Like
Rascal Flatts	contemporary country country country christmas country road neo mellow pop rock	Like
Casey James	contemporary country country road idol modern country rock	Like
Luke Bryan	contemporary country country country christmas country road modern country rock	Like

Track	Artist
Show You How To Hustle - Feat. Lauren	Pharrell Williams
False Alarm	The Weeknd
If I Dont Love You (Grits Aint Groceries)	George Jones

Album	ReleaseDate
Cold Rain	2017-10-10

The search bar can be accessed from any page. On typing a keyword it shows results for Users, Artists, Tracks and Albums. We have shown a few rows for the search ‘a’ in each category.

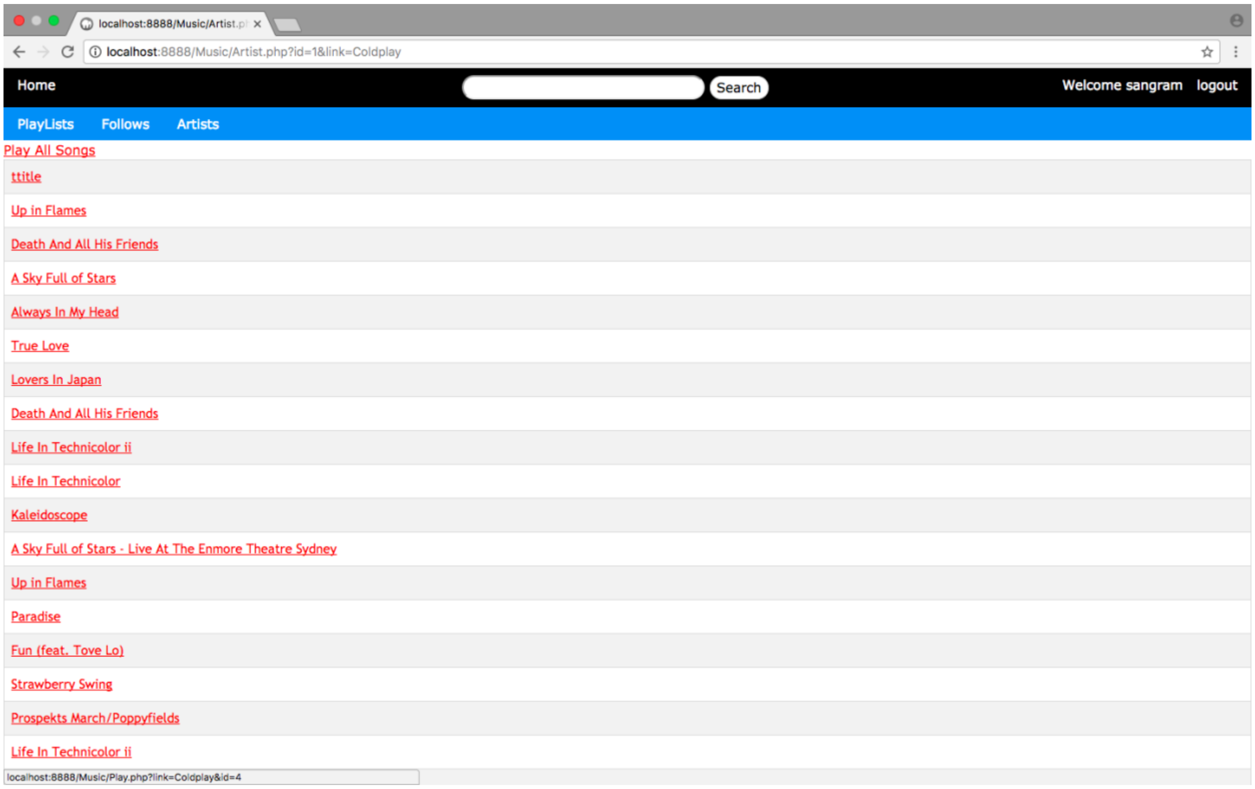
Users – The shows a list of users. From here, you can follow or unfollow users. If you already follow a user you can click on their name to go to their profile page. If you don’t follow a user you cannot go to their profile page. You will have to first click follow and then you can go to their page and view their profile.

Artist – The list shows a list of artists. You can click on the artist name to go to the artist page and see all their songs. you can also like the artist and it will show their songs in your suggested feed on homepage.

Tracks – The list shows a list of tracks. You can click on the track to play it or click on the artist name next to it to go to the artist page and see their songs.

Album – This shows a list of albums with the matching search criteria. You can click the album to see the songs in it. This redirects to the albums page.

8. Artist Page


localhost:8888/Music/Artist.p
localhost:8888/Music/Artist.php?id=1&link=Coldplay
Home
Search
Welcome sangram
logout
PlayLists
Follows
Artists

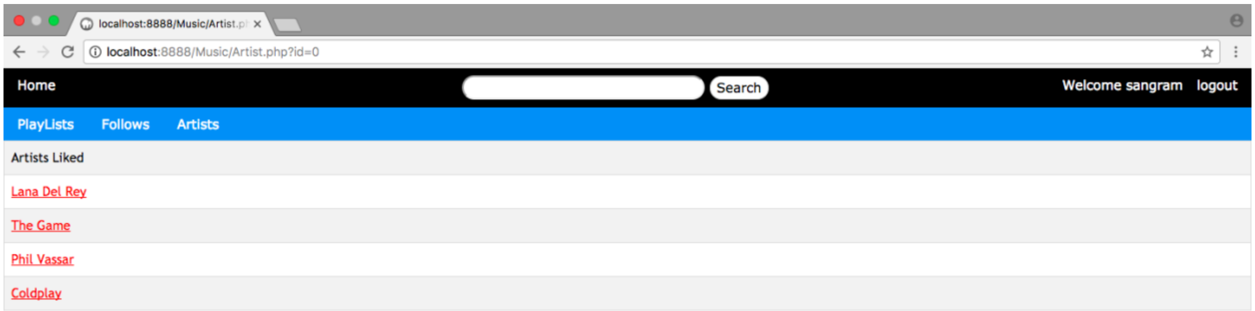
Play All Songs

ttitle
Up in Flames
Death And All His Friends
A Sky Full of Stars
Always In My Head
True Love
Lovers In Japan
Death And All His Friends
Life In Technicolor ii
Life In Technicolor
Kaleidoscope
A Sky Full of Stars - Live At The Enmore Theatre Sydney
Up in Flames
Paradise
Fun (feat. Tove Lo)
Strawberry Swing
Prospekts March/Poppyfields
Life In Technicolor ii

localhost:8888/Music/Play.php?link=Coldplay&id=4

Clicking on an artist's name takes us to an artist page. You can click on the song to play that particular songs. Or you can click on the artist name to play all of the artists songs. If you click play all the artists songs are played in a shuffled order.

9. Artist Tab

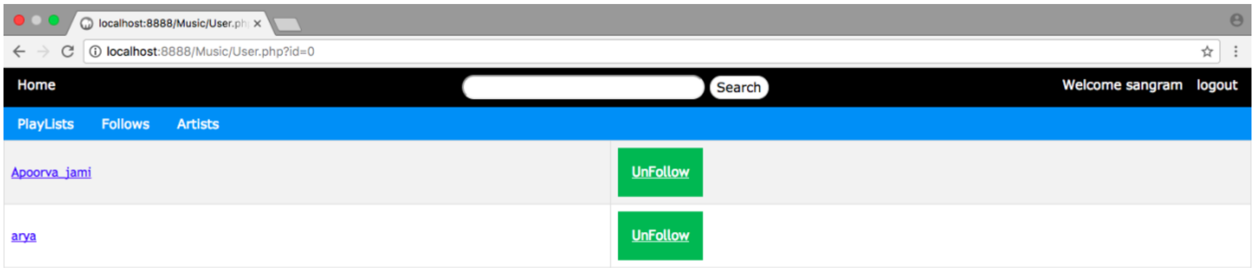

localhost:8888/Music/Artist.p
localhost:8888/Music/Artist.php?id=0
Home
Search
Welcome sangram
logout
PlayLists
Follows
Artists

Artists Liked

Lana Del Rey
The Game
Phil Vassar
Coldplay

Clicking on the artist tab shows the artists you follow. Clicking on the artists name takes you to the artists page.

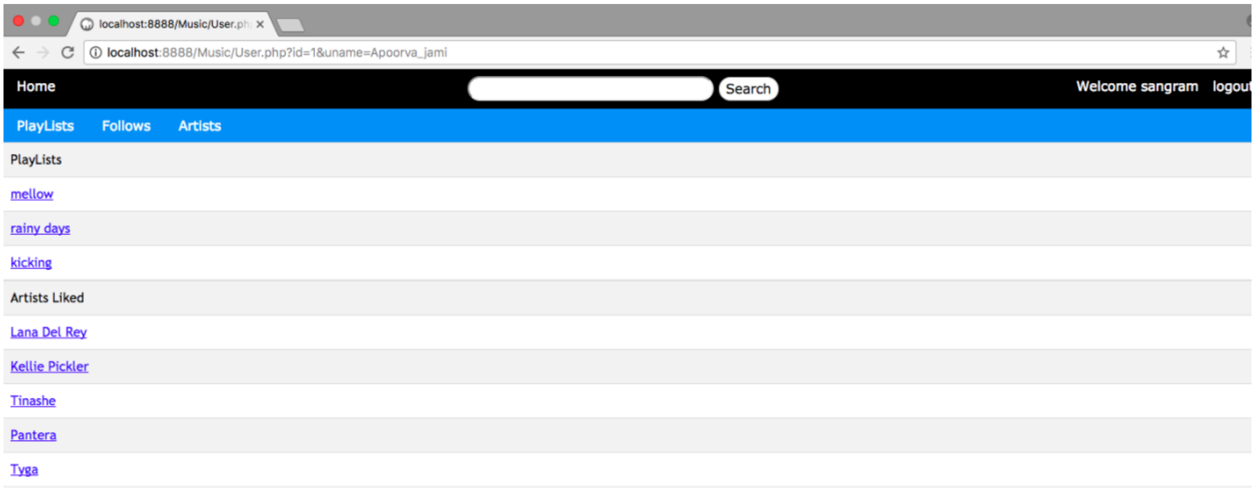
10. Follows


localhost:8888/Music/User.ph
localhost:8888/Music/User.php?id=0
Home
Search
Welcome sangram
logout
PlayLists
Follows
Artists

Apoorva_jami	UnFollow
arya	UnFollow

Clicking on the Follows tab shows the people you follow. Clicking on a friends name takes you to the friends profile.

11. Friends Profile


localhost:8888/Music/User.ph
localhost:8888/Music/User.php?id=1&uname=Apoorva_jami
Home
Search
Welcome sangram
logout
PlayLists
Follows
Artists

PlayLists

mellow

rainy days

kicking

Artists Liked

Lana Del Rey

Kellie Pickler

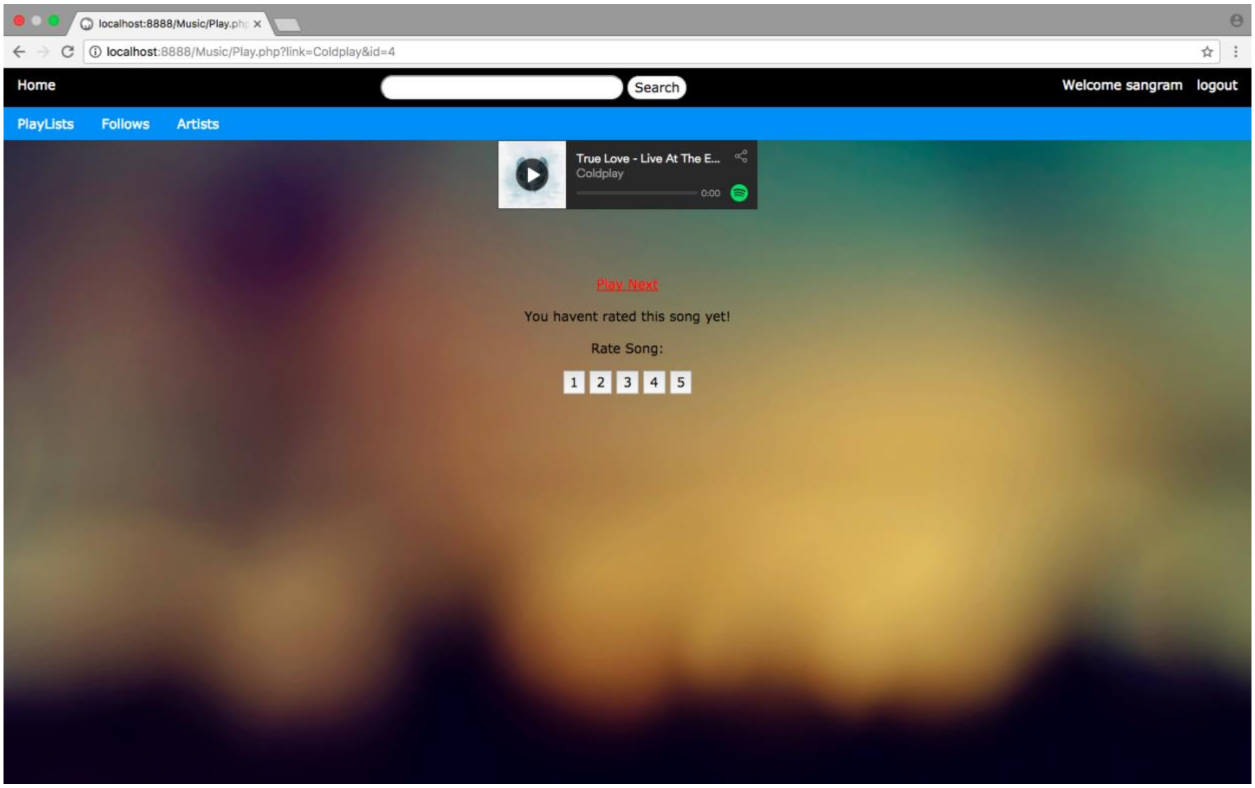
Tinashe

Pantera

Tyga

Clicking on a friend’s name shows us their profile. We can see their playlists and their friends.

12. **Play Page**


localhost:8888/Music/Play.php
localhost:8888/Music/Play.php?link=Coldplay&id=4
Home
Search
Welcome sangram
logout
PlayLists
Follows
Artists
True Love - Live At The E...
Coldplay
0:00
Play Next

You havent rated this song yet!

Rate Song:

1 2 3 4 5

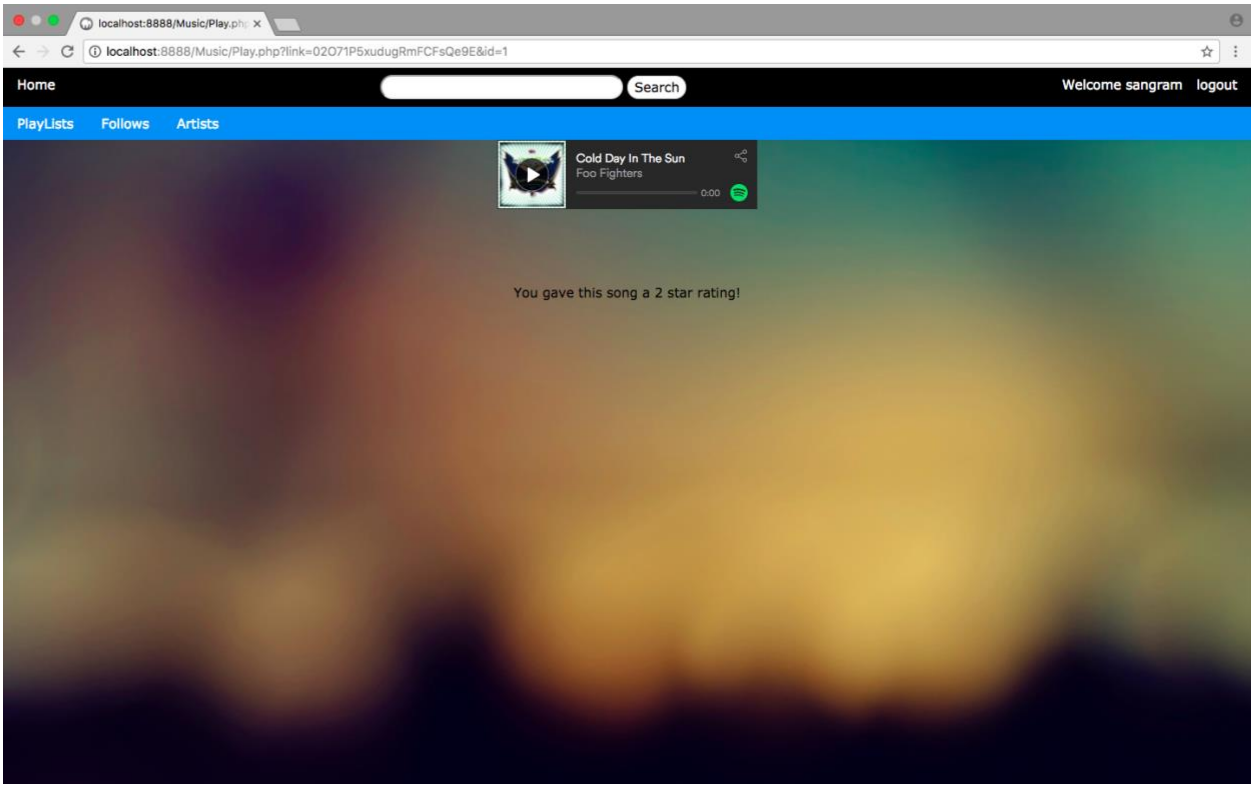
This is the Play page:

It has the track that is being played.

There is also a play next button, this button behaves differently based on what is being played.

a. Track – If just a track was played the play next button is hidden and does not exist.
b. Playlist – If a playlist is being played then the play next button plays the next song in the playlist in order
c. Album – If an album is being played the play next plays the next song in the album
d. Artist – If the songs are being played by clicking an artist, if we click play next another song of the same artist is played in a shuffled order.

There is an option to rate the song if you haven’t rated it already. You can click on one of the options to rate the song. If you have already rated it, it shows you the rating you gave.



localhost:8888/Music/Play.php?link=02O71P5xudugRmFCFsQe9E&id=1

You gave this song a 2 star rating!