USER MANUAL

CSE 412

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Description:

Our CSE412 project consists of a database that stores song information such as song title, artist, length of track, and genre. The database is organized into 8 tables which reflects our initial phase 1 project proposal. We will now outline how to use our music library.

Requirements:

- Pg4Admin
- IDE (able to run python code)

Step 1:

Connect to pg4Admin by using our credentials. Lines 506 -509 are required in order to connect to the database.

```
502
503
504    def main():
505        global con,cur
506        operation = False
507        con = pg.connect(host="localhost", user="postgres", password="412group", dbname="musicdb")
508        cur = con.cursor()
509        con.autocommit= True
```

Step 2:

Create the musicDB database using the following commands

Note: Once database is created comment out the execute command otherwise it will create another database and may conflict with the previous one created.

```
83
84
85        """CREATE MUSICDB"""
86        create_db = '''CREATE database musicDB '''
87        cur.execute(create_db)
88
```

Step 3:

Create the Tables required

```python
create_song = '''CREATE TABLE IF NOT EXISTS "song" (
                    songID  integer PRIMARY KEY,
                    Title   varchar(40) NOT NULL,
                    ArtistID    integer REFERENCES artist(ArtistID),
                    runTimeSeconds  integer,
                    genres  varchar(20),
                    artistName  varchar(20) NOT NULL
                    )'''
create_users = ''' CREATE TABLE IF NOT EXISTS "users" (
                    UserID  integer PRIMARY KEY,
                    fname   varchar(20) NOT NULL,
                    lname   varchar(20) NOT NULL,
                    username varchar(40) NOT NULL,
                    userPass    varchar(50) NOT NULL

                    )'''
create_artist = ''' CREATE TABLE IF NOT EXISTS "artist" (
                    ArtistID    integer PRIMARY KEY,
                    fname   varchar(20) NOT NULL,
                    lname   varchar(20) NOT NULL

                    )'''

create_album = ''' CREATE TABLE IF NOT EXISTS "album" (
                    AlbumID  integer PRIMARY KEY,
                    albumName   varchar(40) NOT NULL,
                    artistName   varchar(20) NOT NULL,
                    releaseYear    DATE,
                    genres      varchar(20)

                    )'''
create_rating = '''CREATE TABLE IF NOT EXISTS "rating" (
                    songID integer,
                    FOREIGN KEY(songID) REFERENCES song(songID),
                    avgRating integer


                    )'''

create_favorites = ''' CREATE TABLE IF NOT EXISTS "favorites" (
                    songID integer,
                    userID integer,
                    PRIMARY KEY (songID, userID),
                    FOREIGN KEY(songID) REFERENCES song(songID),
                    FOREIGN KEY (userID) REFERENCES users(userID),
                    listID  integer
                    )'''

create_makes = '''CREATE TABLE IF NOT EXISTS "artistalbum" (
                AlbumID integer,
                ArtistID integer,
                PRIMARY KEY(AlbumID, ArtistID),
                FOREIGN KEY (AlbumID)  REFERENCES album(AlbumID),
                FOREIGN KEY(ArtistID) REFERENCES artist(ArtistID)
                )'''

create_song_album_relation = '''CREATE TABLE IF NOT EXISTS "albumsongrelation"(
                        AlbumID integer,
                        songID  integer,
                        PRIMARY KEY(AlbumID, songID),
                        FOREIGN KEY(AlbumID) REFERENCES album(AlbumID),
                        FOREIGN KEY(songID) REFERENCES song(songID)
                        )'''
```

Step 4:

Execute the command to create the tables

```
91
92    cur.execute(create_artist)
93    cur.execute(create_song)
94    cur.execute(create_users)
95    cur.execute(create_album)
96    cur.execute(create_favorites)
97    cur.execute(create_makes)
98    cur.execute(create_song_album_relation)
99    cur.execute(create_rating)
100
```

Step 5:

Create the sql insert statements to insert the data into the database

```python
insert_userinfo_query= "INSERT INTO users (userid, fname, lname, username, userpass) VALUES (%s,%s, %s, %s, %s)"
userData = [('14589652', 'Johnny', 'Smith', 'johnS11', '3242cDsx#@'),
            ('34738040', 'Bradly', 'Johnson', 'bradJ23', 'b2dkd0x11'),
            ('78569904', 'Charlie', 'Valentine', 'charVin15','349dcdlsxx#@'),
            ('75489203', 'Doug', 'Alson', 'dougAls19','98985vbdxk#)(2)'),
            ('23942123', 'Ernesto', 'Lopez', 'elopz53','fdj04894!!@@'),
            ('53982832', 'Xavier', 'Rivers','xriver55','bndf2$%$%')]


insert_artistalbum_info_query = "INSERT INTO album (albumid, albumname, artistname, releaseyear, genres) VALUES (%s, %s, %s, %s, %s)"
albumData = [('604','The Brave','Adam Calhoun','18-Feb-22','Hip Hop'),
             ('718','As I Am','Alicia Keys','10-Sep-07', 'R&B'),
             ('643','Yours Truly','Arianna Grande','26-Mar-13', 'R&B'),
             ('867','Callaita','Bad Bunny','31-May-19', 'Reggaeton'),
             ('929','13 Reasons Why','Billie Eilish','19-Apr-18', 'Pop'),
             ('213','Black Out','Britney Spears','31-Aug-07', 'Dance Pop'),
             ('625','Unorthodox Jukebox', 'Bruno Mars','1-Oct-12', 'Pop Rock'),
             ('654','Romance','Camila Cabello','21-Jun-19', 'Latin Pop'),
             ('835','Invasion of Privacy','Cardi B','4-Apr-18','Hip Hop'),
             ('248' ,'F.A.M.E','Chris Brown','25-Apr-10','Dance Pop'),
             ('925','Starting Over','Chris Stapleton','28-Apr-20','Country'),
             ('491','Listen','David Guetta','16-Mar-15','Trap'),
             ('793','Demi','Demetria Lovato','25-Feb-13','Electric Pop'),
             ('152','Jolene','Dolly Parton','15-Oct-73', 'Country'),
             ('540','Future Nostalgia','Dua Lipa','1-Oct-20','Electric Pop'),
             ('910','Shape of you','Ed Sheeran','6-Jan-07','Pop'),
             ('801','Honky Chateau','Elton John','17-Apr-72', 'Pop'),
             ('597','Goldmin','Gabby Barrett','29-Jul-19','Country'),
             ('206','Four','Harry Styles','14-Nov-14','Folk Pop'),
             ('380','2014 Forrest Hills Drive','J Cole','9-Dec-14','Hip Hop'),
             ('390','Thats what they say','Jack Harlow','9-Dec-20', 'Hip Hop'),
             ('358','My kinda party','Jason Aldean','4-Apr-11', 'Country'),
             ('454','Love?','Jennifer Lopez','8-Feb-11','Dance Pop'),
             ('399', 'My World 2.0', 'Justin Bieber', '18-Jan-10','Pop')]

insert_artist_info_query = "INSERT INTO artist (artistid, fname, lname) VALUES (%s, %s, %s)"
artistData = [('36105', 'Adam', 'Calhoun'),
              ('8355', 'Alicia', 'Keys'),
              ('39021', 'Arianna', 'Grande'),
              ('46023', 'Bad','Bunny'),
              ('51310', 'Billie', 'Eilish'),
              ('35448', 'Britney', 'Spears'),
              ('83033', 'Bruno', 'Mars'),
              ('39277','Camila','Cabello'),
              ('97838', 'Cardi','B'),
              ('67572', 'Chris','Brown'),
              ('59369', 'Chris','Stapleton'),
              ('37563','David' ,'Guetta'),
              ('76689','Demetria','Lovato'),
              ('58312','Dolly','Parton'),
              ('40735','Dua','Lipa'),
              ('67172', 'Ed','Sheeran'),
              ('86863','Elton','John'),
              ('54082','Gabby' ,'Barrett'),
              ('53425','Harry','Styles'),
              ('29103','J','Cole'),
              ('3068','Jack','Harlow'),
              ('54883','Jason','Aldean'),
              ('97437','Jennifer','Lopez'),
              ('22358','Justin','Bieber')]

insert_songinfo_query = "INSERT INTO song (songid, title, artistid, runtimeseconds, genres, artistname) VALUES (%s, %s, %s, %s, %s, %s)"
data =[('5010', 'Dont wanna hear it', '36105', '183', 'Hip Hop', 'Adam Calhoun'),
       ('6732', 'No one', '8355', '254', 'R&B', 'Alicia Keys'),
       ('9222','The Way' ,'39021','190','R&B','Arianna Grande'),
       ('6752','Callaita','46023','251','Reggaeton','Bad Bunny'),
       ('7833','Lovely','51310','200','Pop','Billie Eilish'),
       ('7246','Gimmie More','35448','251','Dance pop','Britney Spears'),
       ('9009','Locked out of heaven','83033','233','Pop rock','Bruno Mars'),
       ('7393','Senorita','39277','190','Latin Pop','Camila Cabello'),
       ('9583','Drip','97838','263','Hip Hop','Cardi B'),
       ('8014','Yeah 3x','67572','241','Dance pop','Chris Brown'),
       ('9049','Starting Over','59369','240','Country','Chris Stapleton'),
       ('9616','Hey Mama','37563','192','Trap','David Guetta'),
       ('9243','Heart Attack','76689','210','Electric Pop','Demetria Lovato'),
       ('5363','Jolene','58312','162','Country','Dolly Parton'),
       ('6999','Levitating','40735','203','Electric Pop','Dua Lipa'),
       ('8421','Shape of you','67172','233','Pop','Ed Sheeran'),
       ('9156','Rocket Man','86863','281','Rock','Elton John'),
       ('9296','I Hope','54082','210','Country','Gabby Barrett'),
       ('5203','Night Changes','53425','227','Folk Pop','Harry Styles'),
       ('7480','Apparently','29103','293','Hip Hop','J Cole'),
       ('6979','Way out','3068','169','Hip Hop','Jack Harlow'),
       ('9810','Dirt Road Anthem','54883','330','Country','Jason Aldean'),
       ('9990','On the Floor','97437','284','Dance pop','Jennifer Lopez'),
       ('8121','Baby','22358','216','Pop','Justin Bieber')]

insert_songrating_query = "INSERT INTO rating (avgrating, songid) VALUES (%s, %s)"
ratingData = [('2','5010'),
              ('1','6732'),
              ('4','9222'),
              ('5','6752'),
              ('0','7833'),
              ('0','7246'),
              ('0','9009'),
              ('0','7393'),
              ('0','9583'),
              ('0','8014'),
              ('0','9049'),
              ('0','9616'),
              ('0','9243'),
              ('0','5363'),
              ('0','6999'),
```

Step 6:

Using the newly created data execute the commands which will insert the data into the database
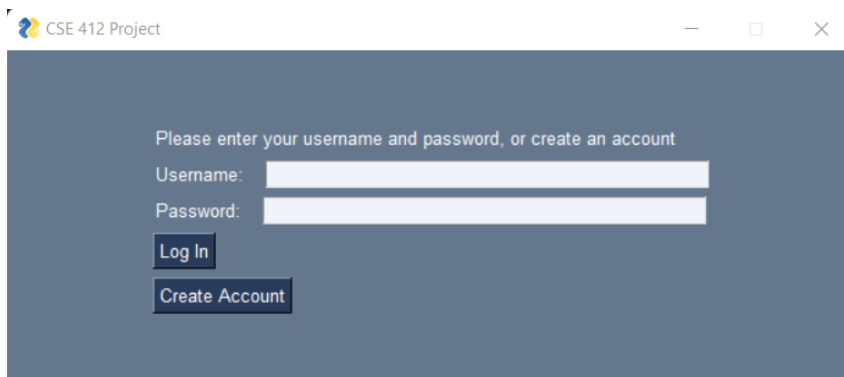
```
234
235    cur.executemany(insert_artist_info_query, artistData)
236    cur.executemany(insert_artistalbum_info_query, albumData)
237    cur.executemany(insert_songinfo_query, data)
238    cur.executemany(insert_userinfo_query, userData)
239
240    cur.executemany(insert_userfavorites_query, favoritesData)
241    cur.executemany(insert_makesrelation_query, makesData)
242    cur.executemany(insert_songalbum_query, songalbumData)
243    cur.executemany(insert_songrating_query, ratingData)
244
```

Step 7:

Verify on pgAdmin that the data and tables have been loaded properly. If all data is loaded correctly compile the provided source code.

Step 8:

Upon compiling the source code the user will be greeted with a window titled "CSE412 Project". This window will prompt the user to enter a verified username and password to login with or create an account.
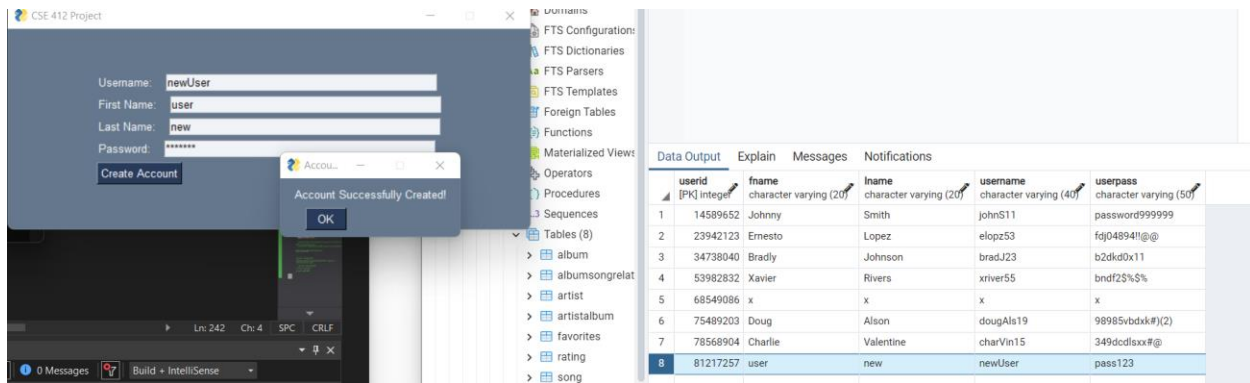

Step 8:

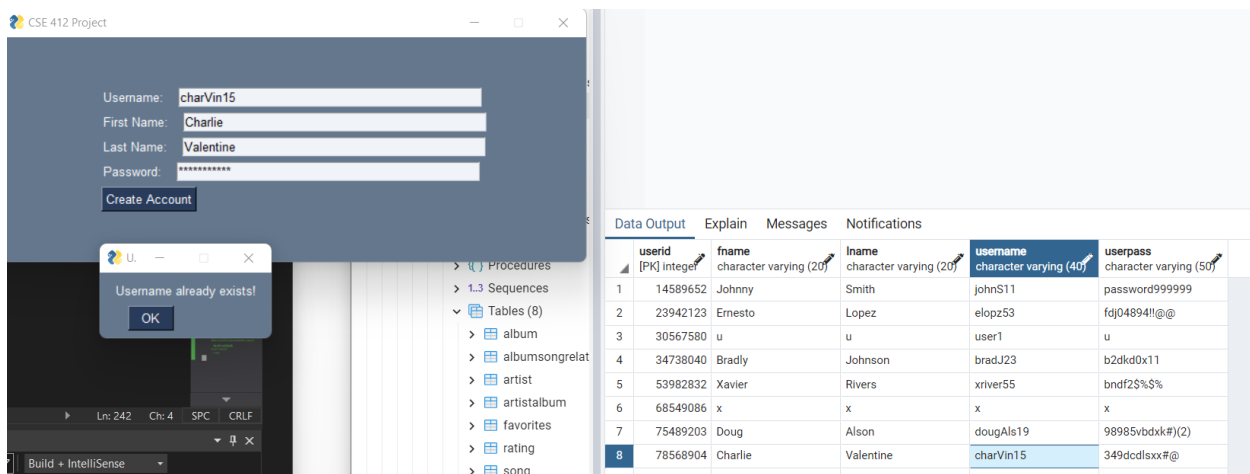Click the "Create Account" Button

Step 9:

The user will now be prompted to enter a username, first name, last name, and password.

Here we can see the newly created user "newUser" in the database (have to refresh the database to see).

Note: If username exists the user will be prompted to enter a new credentials

If username and password are valid a "login success" window will pop up signifying that the user is verified in the database.
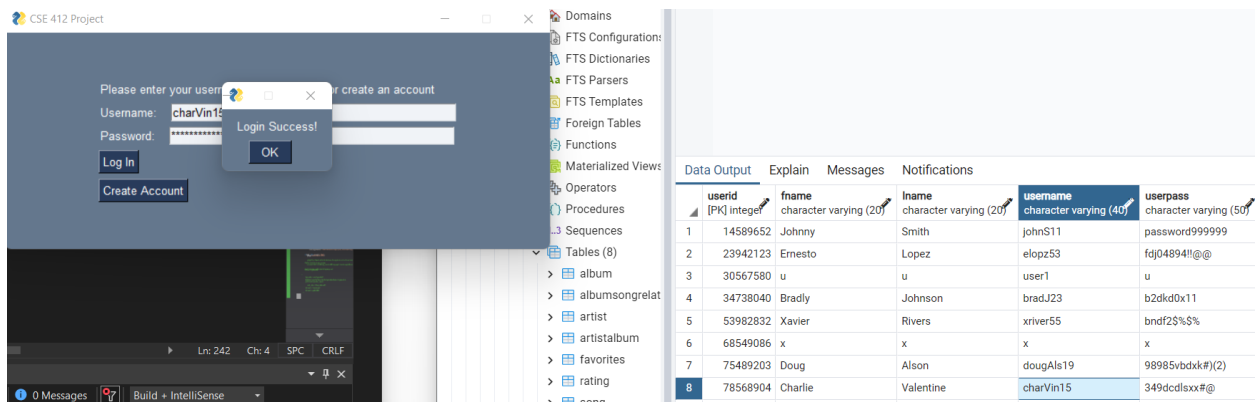
Step 10:

Once the user is logged in, a new window will display the songs list that are currently in the database. The library can be sorted by song, length of track, genre, artist, album, year, and or rating for easier viewing. Additionally, there is a favorites tab located in the top left corner of the window that users can use to add songs from the songs list into there own favorites section.
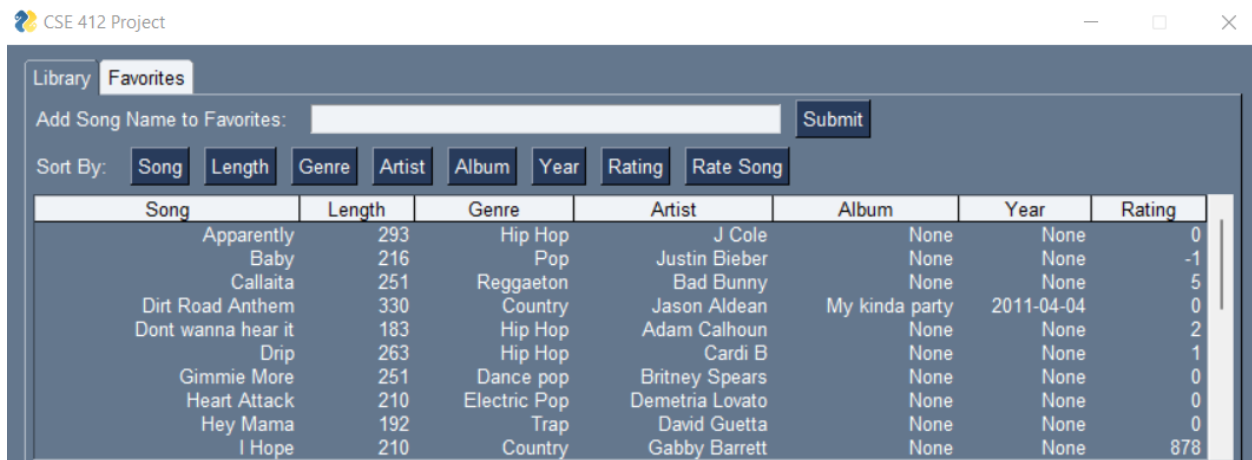
Currently as the new user there favorites section is empty.

Step 11:

      To add a song to the users favorites section simply type in the song name from the song list and press the submit button on the right hand side. If the song exists in the database then a new window will pop up "Song Successfully Added" signifying that it has been added to their favorites section. (displaying the sort by Artist feature).
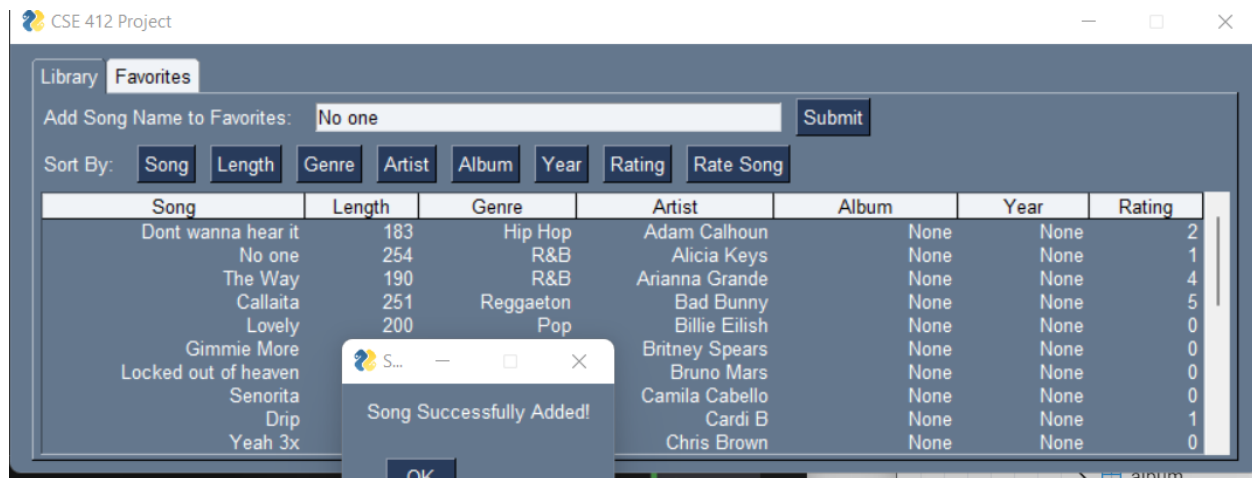
If we click the favorites tab we can see that the song "No one" has been added to the users favorites section.
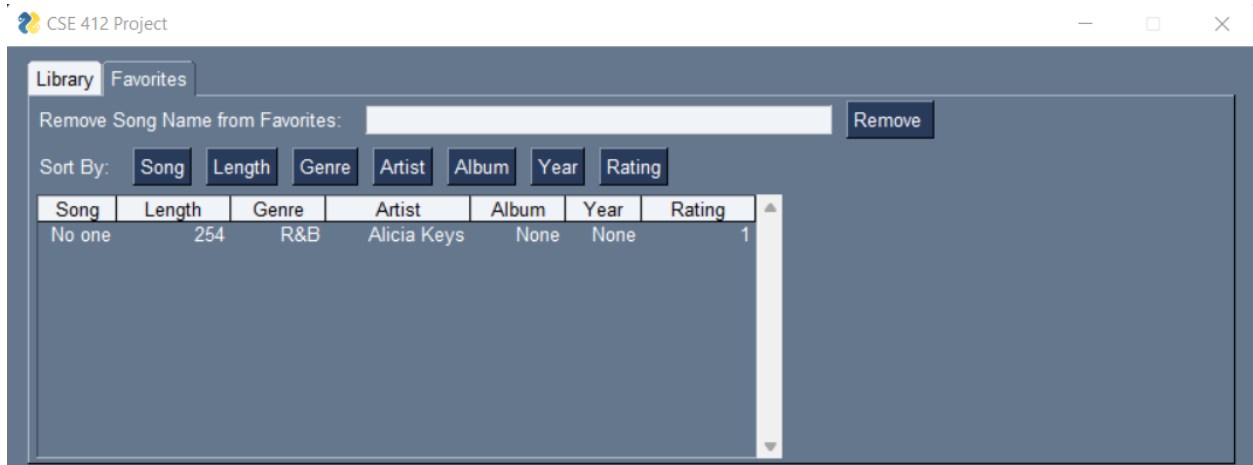
*Added another song for demonstration

Note: the input text is case-sensitive

If song does not exists in the database then it will not add anything to the favorites section
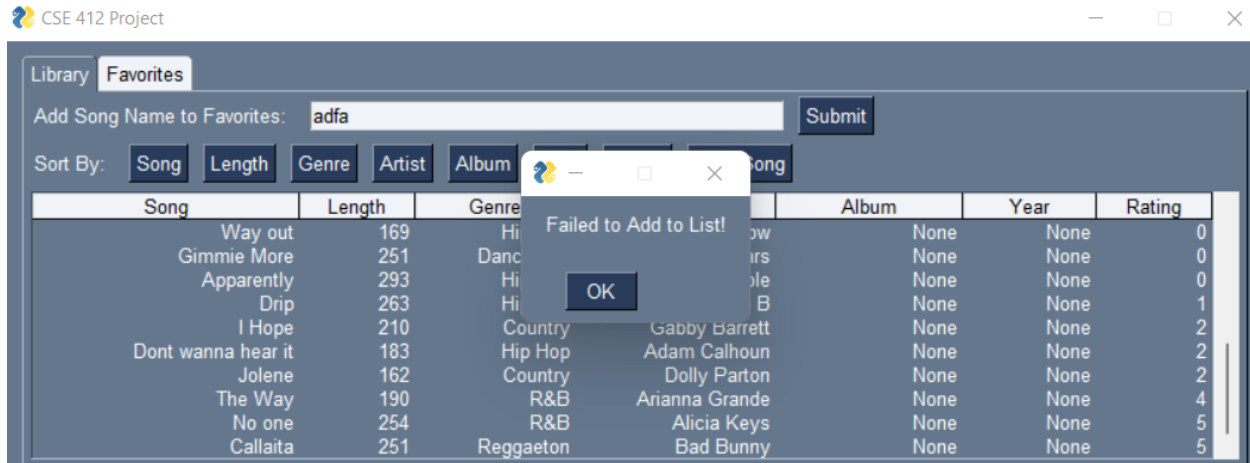
Now if a user wants to remove a song from their favorites section, they can simply type the name of the song in the "Remove Song name from Favorites" and click the remove button.
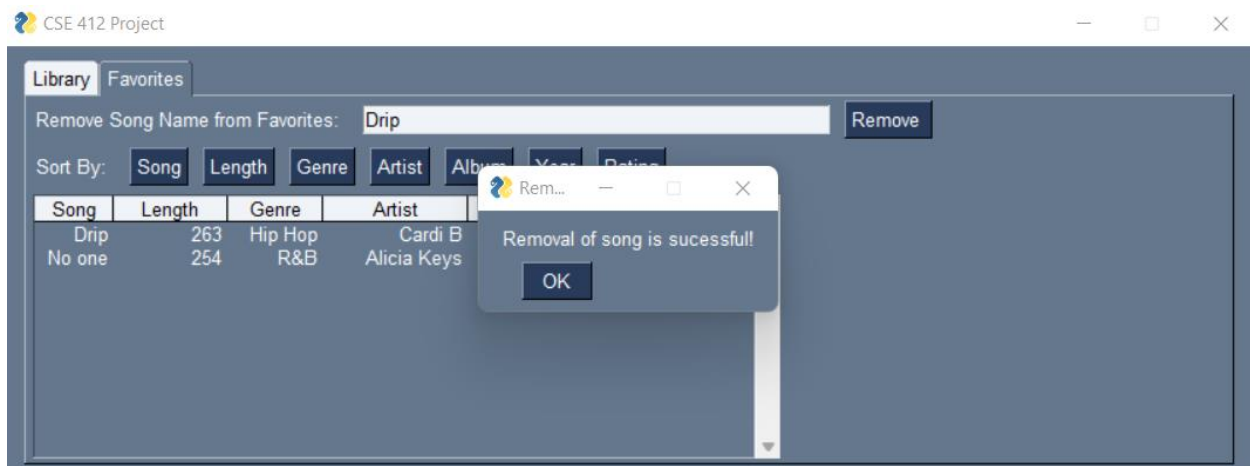
If song is not in favorites then the user will be presented with an error
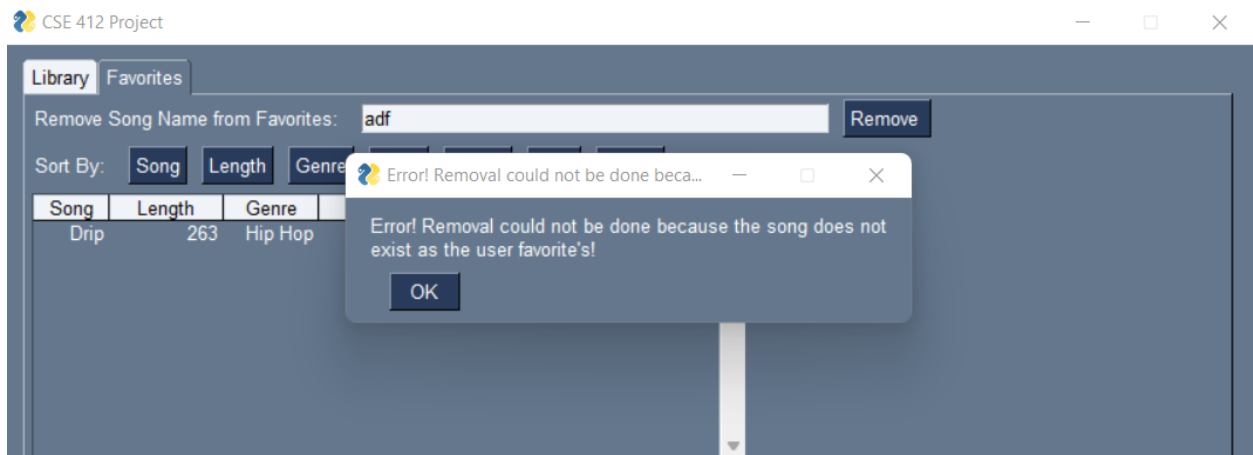
Now the favorites section shows
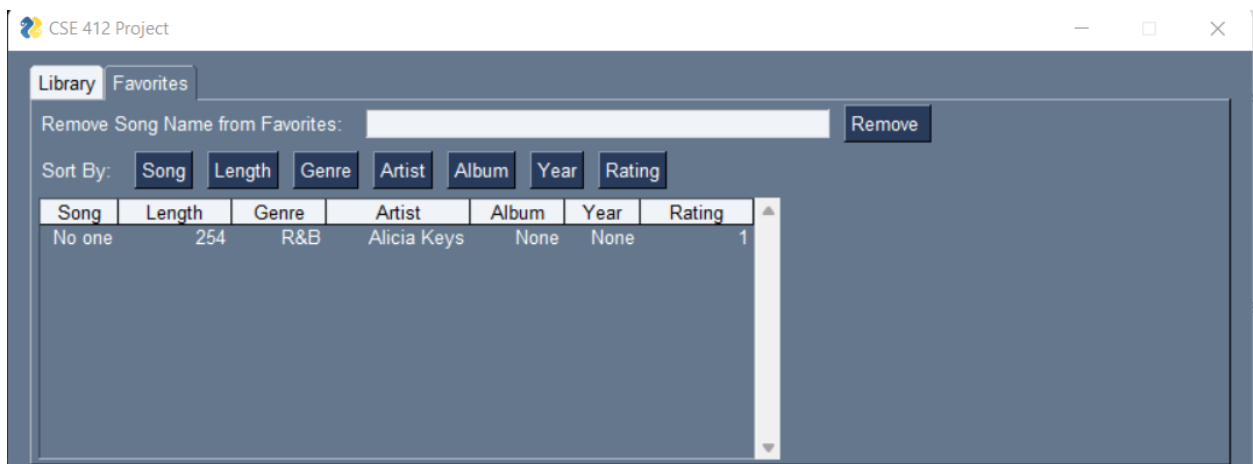
To rate songs in the library simply click the "Rate Song" button . A new screen will appear prompting the user for a song in the songs list and a value.

Library Favorites

Add S

Sort E

Rate Song

Which Song do you Want to Rate? No one

Rate 1-5 : 5

Rate Song

S... — ☐ ✕

Song Successfully Rated !

OK

Heart Attack	210	Ele		None	None
Hey Mama	192			None	None
I Hope	210			None	None

Now the new rating value can be used to sort songs base on like/dislike and will appear in the songs list as well as the favorites section.

Library Favorites

Remove Song Name from Favorites: [   ] Remove

Sort By: Song Length Genre Artist Album Year Rating

Song	Length	Genre	Artist	Album	Year	Rating
No one	254	R&B	Alicia Keys	None	None	5

*sort by rating in songs list

Library Favorites

Add Song Name to Favorites: [   ] Submit
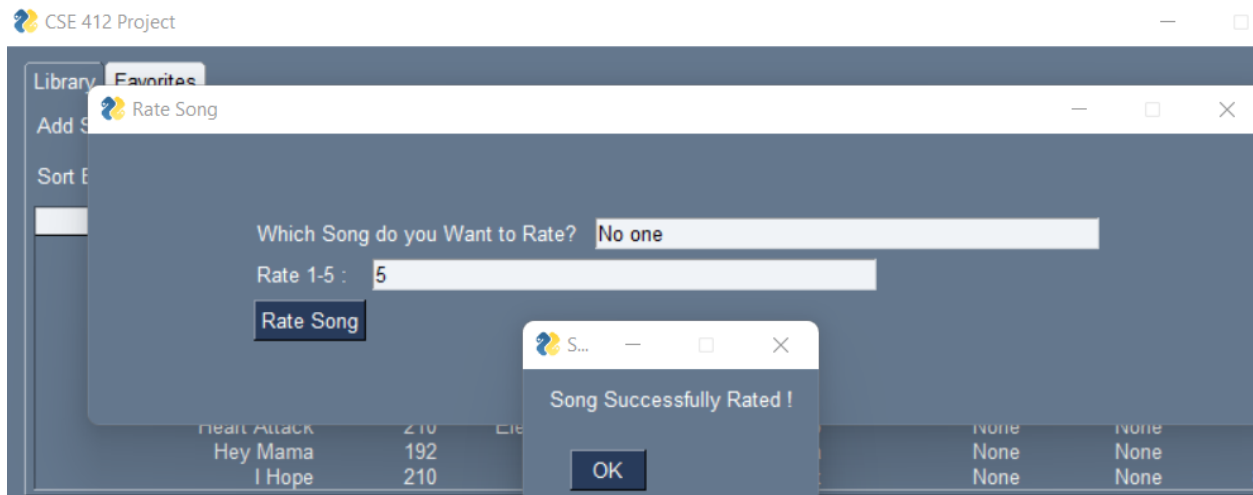
Sort By: Song Length Genre Artist Album Year Rating Rate Song

Song	Length	Genre	Artist	Album	Year	Rating
Starting Over	240	Country	Chris Stapleton	None	None	0
Levitating	203	Electric Pop	Dua Lipa	None	None	0
Rocket Man	281	Rock	Elton John	None	None	0
Locked out of heaven	233	Pop rock	Bruno Mars	None	None	0
Drip	263	Hip Hop	Cardi B	None	None	1
Jolene	162	Country	Dolly Parton	None	None	2
Dont wanna hear it	183	Hip Hop	Adam Calhoun	None	None	2
The Way	190	R&B	Arianna Grande	None	None	4
Callaita	251	Reggaeton	Bad Bunny	None	None	5
No one	254	R&B	Alicia Keys	None	None	5

*sort by Song

CSE 412 Project   — □ ✕

| Library | Favorites | | | | | | |

Add Song Name to Favorites: [   ] Submit

Sort By: | Song | Length | Genre | Artist | Album | Year | Rating | Rate Song |

Song	Length	Genre	Artist	Album	Year	Rating
Apparently	293	Hip Hop	J Cole	None	None	0
Baby	216	Pop	Justin Bieber	None	None	0
Callaita	251	Reggaeton	Bad Bunny	None	None	5
Dirt Road Anthem	330	Country	Jason Aldean	My kinda party	2011-04-04	0
Dont wanna hear it	183	Hip Hop	Adam Calhoun	None	None	2
Drip	263	Hip Hop	Cardi B	None	None	1
Gimmie More	251	Dance pop	Britney Spears	None	None	0
Heart Attack	210	Electric Pop	Demetria Lovato	None	None	0
Hey Mama	192	Trap	David Guetta	None	None	0
I Hope	210	Country	Gabby Barrett	None	None	2

*sort by Length

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| Library | Favorites | | | | | | |

Add Song Name to Favorites: [   ] Submit

Sort By: | Song | Length | Genre | Artist | Album | Year | Rating | Rate Song |

Song	Length	Genre	Artist	Album	Year	Rating
Jolene	162	Country	Dolly Parton	None	None	2
Way out	169	Hip Hop	Jack Harlow	None	None	0
Dont wanna hear it	183	Hip Hop	Adam Calhoun	None	None	2
Senorita	190	Latin Pop	Camila Cabello	None	None	0
The Way	190	R&B	Arianna Grande	None	None	4
Hey Mama	192	Trap	David Guetta	None	None	0
Lovely	200	Pop	Billie Eilish	None	None	0
Levitating	203	Electric Pop	Dua Lipa	None	None	0
I Hope	210	Country	Gabby Barrett	None	None	2
Heart Attack	210	Electric Pop	Demetria Lovato	None	None	0

*sort by Genre

CSE 412 Project   — □ ✕

| Library | Favorites | | | | | | |

Add Song Name to Favorites: [   ] Submit

Sort By: | Song | Length | Genre | Artist | Album | Year | Rating | Rate Song |

Song	Length	Genre	Artist	Album	Year	Rating
I Hope	210	Country	Gabby Barrett	None	None	2
Dirt Road Anthem	330	Country	Jason Aldean	My kinda party	2011-04-04	0
Starting Over	240	Country	Chris Stapleton	None	None	0
Jolene	162	Country	Dolly Parton	None	None	2
Yeah 3x	241	Dance pop	Chris Brown	None	None	0
On the Floor	284	Dance pop	Jennifer Lopez	None	None	0
Gimmie More	251	Dance pop	Britney Spears	None	None	0
Heart Attack	210	Electric Pop	Demetria Lovato	None	None	0
Levitating	203	Electric Pop	Dua Lipa	None	None	0
Night Changes	227	Folk Pop	Harry Styles	None	None	0

*sort by Artist

Song	Length	Genre	Artist	Album	Year	Rating
Dont wanna hear it	183	Hip Hop	Adam Calhoun	None	None	2
No one	254	R&B	Alicia Keys	None	None	5
The Way	190	R&B	Arianna Grande	None	None	4
Callaita	251	Reggaeton	Bad Bunny	None	None	5
Lovely	200	Pop	Billie Eilish	None	None	0
Gimmie More	251	Dance pop	Britney Spears	None	None	0
Locked out of heaven	233	Pop rock	Bruno Mars	None	None	0
Senorita	190	Latin Pop	Camila Cabello	None	None	0
Drip	263	Hip Hop	Cardi B	None	None	1
Yeah 3x	241	Dance pop	Chris Brown	None	None	0

*sort by Album

Song	Length	Genre	Artist	Album	Year	Rating
Dirt Road Anthem	330	Country	Jason Aldean	My kinda party	2011-04-04	0
Shape of You	233	Pop	Ed Sheeran	Shape of you	2007-01-06	0
Senorita	190	Latin Pop	Camila Cabello	None	None	0
Yeah 3x	241	Dance pop	Chris Brown	None	None	0
Night Changes	227	Folk Pop	Harry Styles	None	None	0
Hey Mama	192	Trap	David Guetta	None	None	0
Callaita	251	Reggaeton	Bad Bunny	None	None	5
Way out	169	Hip Hop	Jack Harlow	None	None	0
Gimmie More	251	Dance pop	Britney Spears	None	None	0
Apparently	293	Hip Hop	J Cole	None	None	0

*sort by year

Song	Length	Genre	Artist	Album	Year	Rating
Shape of You	233	Pop	Ed Sheeran	Shape of you	2007-01-06	0
Dirt Road Anthem	330	Country	Jason Aldean	My kinda party	2011-04-04	0
Heart Attack	210	Electric Pop	Demetria Lovato	None	None	0
Senorita	190	Latin Pop	Camila Cabello	None	None	0
Yeah 3x	241	Dance pop	Chris Brown	None	None	0
Night Changes	227	Folk Pop	Harry Styles	None	None	0
Hey Mama	192	Trap	David Guetta	None	None	0
Callaita	251	Reggaeton	Bad Bunny	None	None	5
Way out	169	Hip Hop	Jack Harlow	None	None	0
Gimmie More	251	Dance pop	Britney Spears	None	None	0

*sort by rating

Step 12:

     Once user is done with the music database simply click the "x" on the top right hand corner of the screen to exit the program.