

Online Music Management System — User Manual

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1. Introduction

Welcome to the **Music Management Application** — a user-friendly tool designed for music enthusiasts to efficiently manage songs, playlists, albums, and artists. Enjoy mood-based playlists, organize your favorites, and explore data visually with built-in sorting, filtering, and grouping features.

2. Step-by-Step Setup Process

Prerequisites:

- Python 3.x installed
- SQL Server Management Studio (SSMS)
- pyodbc module:

`pip install pyodbc`

Step 1: Create SQL Server Database

Open SSMS and run the following to create the database:

```
CREATE DATABASE musicsystemB43;
```

```
USE musicsystemB43;
```

-- Create tables (Users, Songs, Artists, Albums, etc.)

-- Ensure relationships using foreign keys

Create tables like Users, Songs, Artists, Albums, Moods, Playlists, Favorites, etc.

Step 2: Insert Sample Data

Populate each table with at least 20–30 rows for testing. Include:

- Songs with file paths and metadata
- Playlists tied to users
- Mood-based categories

Step 3: Write the Python File

- Use tkinter for GUI
- Use pyodbc to connect:

```
conn = pyodbc.connect('DRIVER={SQL  
Server};SERVER=YOUR_SERVER_NAME;DATABASE=musicsystemB43;Trusted_C  
onnection=yes;')
```

- Design GUI with login, song browser, playlist manager, etc.

Step 4: Run the App

In the terminal or VSCode:

```
python music_app.py
```

2. Home Dashboard Overview

After launching the application, the top navigation bar offers access to:

- **Home**
- **Search**
- **Playlists**
- **Favorites**
- **Sort & Filter**
- **Pattern Search**
- **Manage Users**

- **Manage Songs**
- **Manage Artists**
- **Manage Albums**
- **Manage Moods**
- **Data Explorer**

Each section allows actions such as viewing tables, joining tables, sorting, filtering, pattern searching, and grouping data.

3. Managing Songs

Go to **Manage Songs > View Table** to browse all songs.

Available Attributes:

- song_id
- song_name
- artist_id
- album_id
- release_year
- file_path

Features:

- Sort songs by name, artist, or album.
 - Apply filters to narrow down the list.
-

4. Managing Artists

Access **Manage Artists** to view and manage artist information.

Attributes Include:

- artist_id
- artist_name
- genre

You can also sort, filter, and aggregate artist data.

5. Managing Albums

In the **Manage Albums** section, you can:

- View album details.
 - Link albums to artists and songs.
 - Sort and filter album data for easier navigation.
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6. Creating and Managing Playlists

Steps:

1. Go to **Manage Playlists**.
2. Click **Create New Playlist**.
3. Enter a playlist name in the popup.
4. Click **OK** to save or **Cancel** to discard.

Managing Playlists:

- View existing playlists.
 - Delete playlists.
 - Click **View Songs** to see or add songs to a playlist.
-

7. Searching and Adding Songs

In the **Add Songs to Playlist** window:

- Use the **Search** bar to find songs by title or artist.
 - Click **+ Add** next to a song to add it to the playlist.
 - A success dialog confirms the addition.
-

8. Viewing and Filtering Data

Use the **View Table** feature in Songs, Artists, or Albums to browse all records.

Sort & Filter:

- Organize entries based on multiple conditions.
 - Apply sorting (ascending/descending) on columns.
-

9. Grouping & Aggregating Data

Go to **Group & Aggregate** to:

- Select a table (e.g., Artists).
 - Choose a grouping attribute (e.g., artist_name).
 - Apply an aggregation function (e.g., COUNT).
 - Use a **HAVING clause** to filter aggregated results.
-

10. Managing Songs by Mood

This feature allows users to explore songs based on moods.

How to Use:

1. Click a mood button from the top bar (e.g., **Happy**, **Chill**, **Workout**).
2. View songs associated with the selected mood.
3. Use:
 - **Favorite**: Mark a song as favorite.
 - **Play Now**: Instantly play the song.
4. Click **Back to All Songs** to return.

Available Moods:

- Chill
 - Energetic
 - Happy
 - Melancholic
 - Party
 - Peaceful
 - Romantic
 - Sad
 - Travel
 - Workout
-

11. Troubleshooting

Song not showing up?

- Ensure it's added to the **Songs** table with valid IDs.

Playlist not updating?

- Refresh the playlist view or re-add the song.

Artist mismatch?

- Confirm that `artist_id` in the **Songs** table matches the correct artist in the **Artists** table.
 - Verify that the **Albums** linked to the songs also reflect the correct artist details.
 - Edit entries under **Songs** or **Albums** as needed.
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Final Notes

- Use the **Pattern Search** feature to search data using advanced matching techniques.
- The **Sort & Filter** tab streamlines browsing and improves search accuracy.

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