# MUSIC LIBRARY MANAGEMENT

A MINI-PROJECT BY:


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*in partial fulfillment of the award of the degree*

*OF*

*BACHELOR OF ENGINEERING*

IN

COMPUTER SCIENCE AND ENGINEERING


RAJALAKSHMI ENGINEERING COLLEGE, CHENNAI

An Autonomous Institute

CHENNAI


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# BONAFIDE CERTIFICATE

Certified that this project “MUSIC LIBRARY MANAGEMENT” is the bonafide work of “NITHILAN M,PRANAV RAM S,PRASANNA KUMAR M” who carried out the project work under my supervision.

Submitted for the practical examination held on _____

SIGNATURE

SIGNATURE

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INTERNAL EXAMINER

EXTERNAL EXAMINER

# ABSTRACT

The Music Library Management System developed in Java with MySQL is an efficient and robust software solution for organizing, managing, and accessing music collections digitally.

This system offers an intuitive user interface and comprehensive functionalities to store, retrieve, and categorize music tracks seamlessly.

By integrating Java for the application logic and MySQL for the database, it ensures scalability, reliability, and performance.

The project simplifies the management of music libraries for individual users or organizations, enabling efficient search, playback, and updates to the database.

Its secure and user-friendly design provides a centralized platform to enhance the overall music management experience.

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# INTRODUCTION

## INTRODUCTION

The Music Library Management System is a step forward in integrating technology into everyday tasks, making it simpler to organize, explore, and enjoy music libraries effectively.

## 1.1 IMPLEMENTATION

The MUSIC LIBRARY MANAGEMENT project discussed here is implemented using concepts of JAVA SWING AND MYSQL

## 1.2 SCOPE OF THE PROJECT

The Music Library Management System has wide applicability, serving both individual and organizational needs.This project lays the groundwork for an advanced music management tool that can be extended to support future developments in multimedia organization.

## 1.3 WEBSITE FEATURES

- Dashboard showing possible actions.
- Guide to choosing Songs .
- Option to Save Songs on website.

# SYSTEM SPECIFICATIONS

## 2.1 HARDWARE SPECIFICATIONS:

| | | |
|---|---|---|
| PROCESSOR | : | Intel i5 |
| MEMORY SIZE | : | 4GB(Minimum) |
| HARD DISK | : | 500 GB of free space |

## 2.2 SOFTWARE SPECIFICATIONS:

| | | |
|---|---|---|
| PROGRAMMING LANGUAGE | : | Java, MySQL |
| FRONT-END | : | Java |
| BACK-END | : | MySQL |
| OPERATING SYSTEM | : | Windows 10 |

# SAMPLE CODE

```
import javax.swing.*;
import javax.swing.table.DefaultTableModel;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.sql.*;

public class MusicLibrary extends JFrame {
    private JTextField titleField, artistField, albumField, genreField;
    private JTable songTable;
    private DefaultTableModel tableModel;
    private Connection connection;

    public MusicLibrary() {
        connectToDatabase();
        setTitle("Music Library Management System");
        setSize(600, 400);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setLocationRelativeTo(null);
        JPanel inputPanel = new JPanel(new GridLayout(5, 2));
        inputPanel.add(new JLabel("Title:"));
        titleField = new JTextField();
        inputPanel.add(titleField);
        inputPanel.add(new JLabel("Artist:"));
        artistField = new JTextField();
        inputPanel.add(artistField);
        inputPanel.add(new JLabel("Album:"));
        albumField = new JTextField();
        inputPanel.add(albumField);
        inputPanel.add(new JLabel("Genre:"));
        genreField = new JTextField();
```

```
        inputPanel.add(genreField);
        JButton addButton = new JButton("Add Song");
        JButton deleteButton = new JButton("Delete Song");
        inputPanel.add(addButton);
        inputPanel.add(deleteButton);
        tableModel = new DefaultTableModel(new String[]{"ID", "Title", "Artist", "Album", "Genre"}, 0);
        songTable = new JTable(tableModel);
        loadSongs();
        add(new JScrollPane(songTable), BorderLayout.CENTER);
        add(inputPanel, BorderLayout.SOUTH);
        addButton.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                addSong();
            }
        });

        deleteButton.addActionListener(new ActionListener() {
            @Override
            public void actionPerformed(ActionEvent e) {
                deleteSong();
            }
        });
    }
    private void connectToDatabase() {
        try {
            connection = DriverManager.getConnection("jdbc:mysql://localhost:3306/musiclibrarydb",
"root", "2006");
            System.out.println("Database connected successfully.");
        } catch (SQLException e) {
            e.printStackTrace();
```

```
    }
  }
  private void loadSongs() {
    try {
      Statement statement = connection.createStatement();
      ResultSet rs = statement.executeQuery("SELECT * FROM Songs");

      tableModel.setRowCount(0); // Clear existing rows
      while (rs.next()) {
        int id = rs.getInt("id");
        String title = rs.getString("title");
        String artist = rs.getString("artist");
        String album = rs.getString("album");
        String genre = rs.getString("genre");
        tableModel.addRow(new Object[]{id, title, artist, album, genre});
      }
    } catch (SQLException e) {
      e.printStackTrace();
    }
  }
  private void addSong() {
    String title = titleField.getText();
    String artist = artistField.getText();
    String album = albumField.getText();
    String genre = genreField.getText();

    try {
      PreparedStatement ps = connection.prepareStatement("INSERT INTO Songs (title, artist,
album, genre) VALUES (?, ?, ?, ?)");
      ps.setString(1, title);
      ps.setString(2, artist);
```

```
            ps.setString(3, album);
            ps.setString(4, genre);
            ps.executeUpdate();

            loadSongs(); // Refresh table
            clearFields();
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
    private void deleteSong() {
        int selectedRow = songTable.getSelectedRow();
        if (selectedRow == -1) {
            JOptionPane.showMessageDialog(this, "Please select a song to delete.");
            return;
        }
        int songId = (int) tableModel.getValueAt(selectedRow, 0);

        try {
            PreparedStatement ps = connection.prepareStatement("DELETE FROM Songs WHERE id = ?");
            ps.setInt(1, songId);
            ps.executeUpdate();

            loadSongs(); // Refresh table
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
    private void clearFields() {
        titleField.setText("");
        artistField.setText("");
```

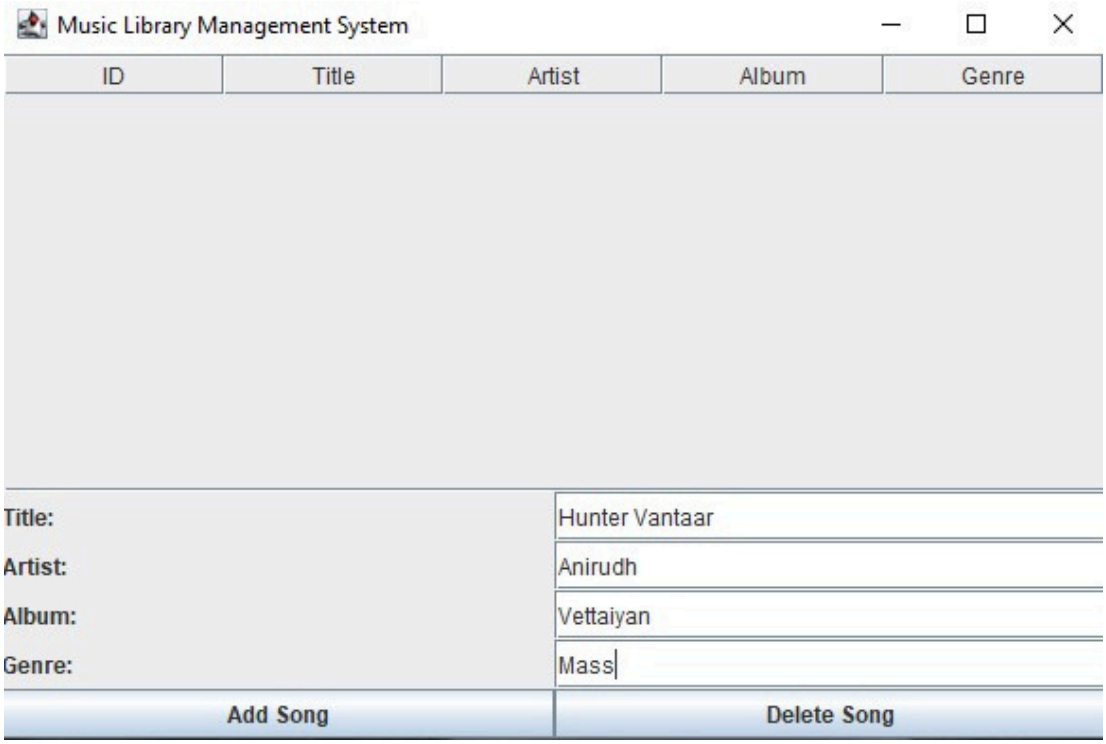
```
        albumField.setText("");
        genreField.setText("");
    }
    public static void main(String[] args) {
        SwingUtilities.invokeLater(() -> {
            new MusicLibrary().setVisible(true);
        });
    }
}
```

# DATABASE QUERY

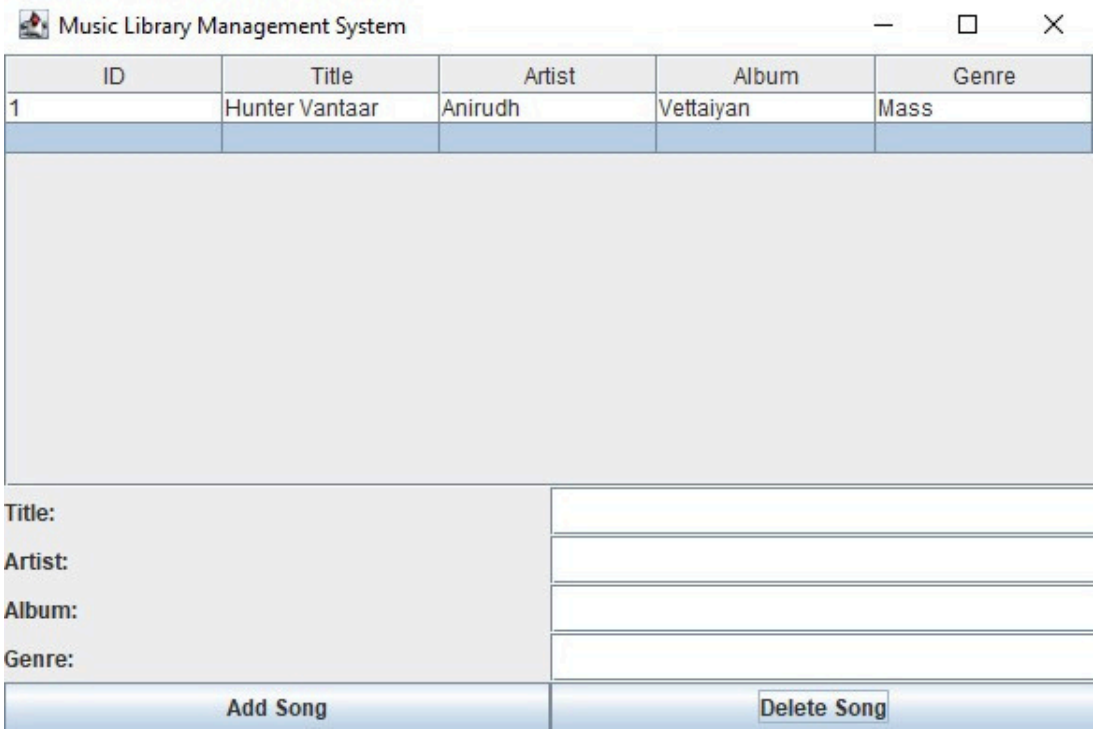
```
CREATE DATABASE musiclibrarydb;


USE musiclibrarydb;


CREATE TABLE Songs (
    id INT PRIMARY KEY AUTO_INCREMENT,
    title VARCHAR(255) NOT NULL,
    artist VARCHAR(255),
    album VARCHAR(255),
    genre VARCHAR(100)
);
```

# SNAPSHOTS

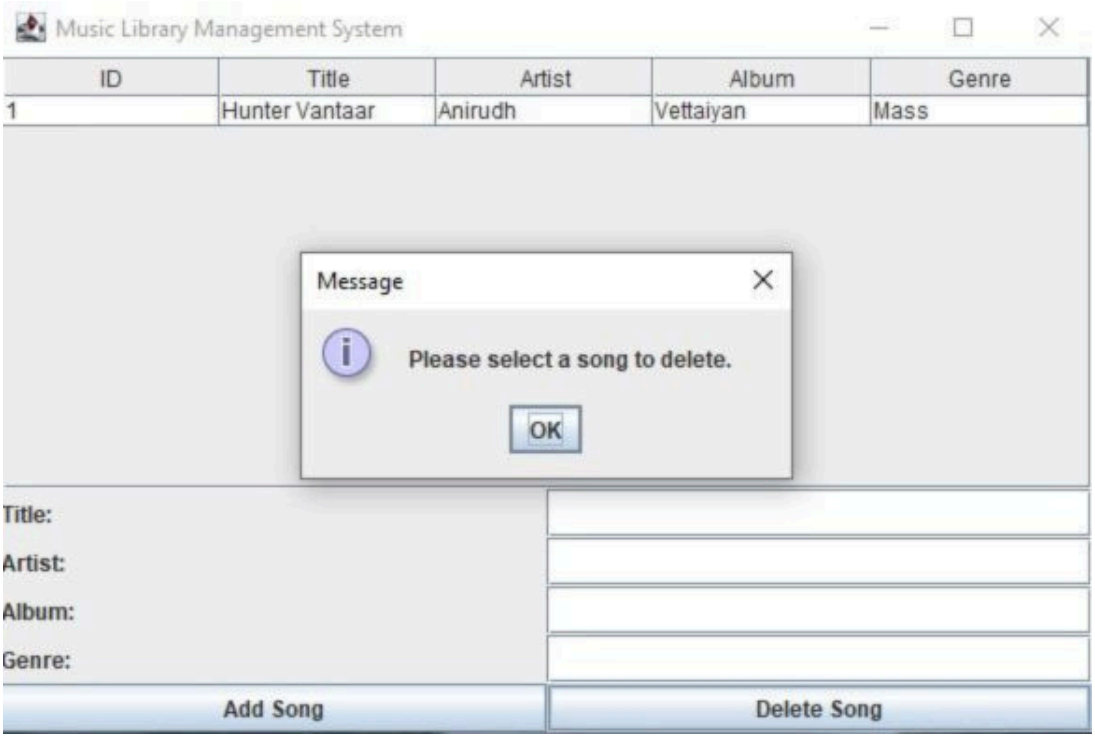
## 4.1 ADDITION OF SONGS

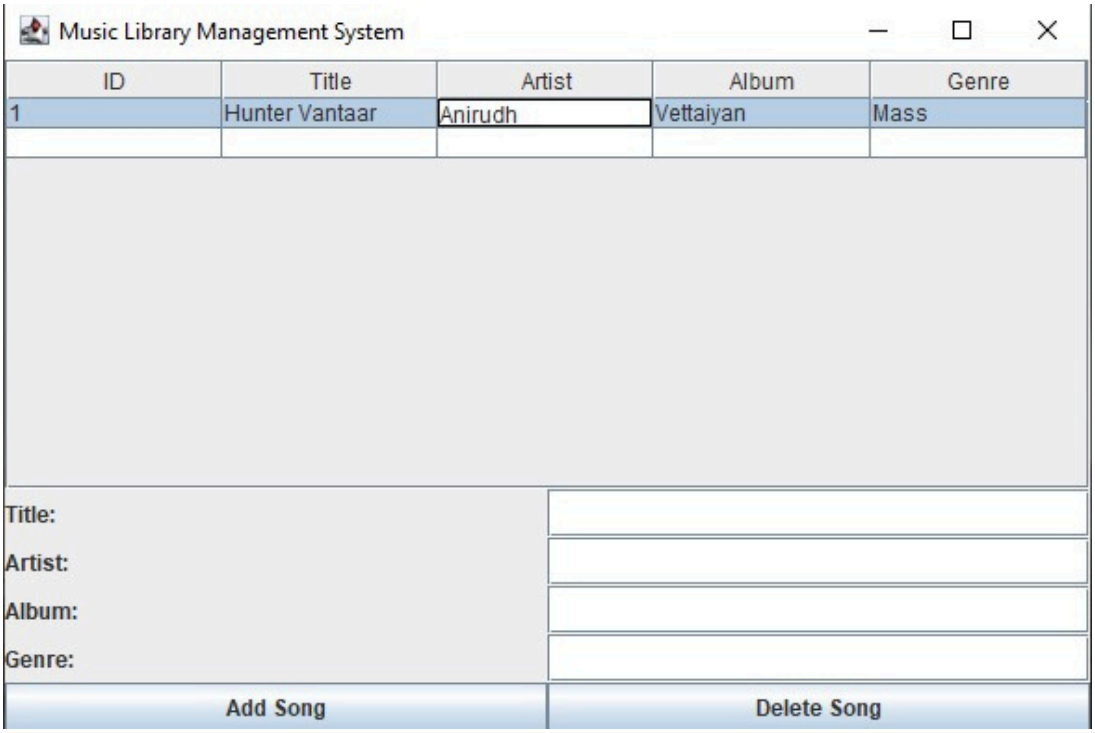



## 4.2 AFTER ADDITION

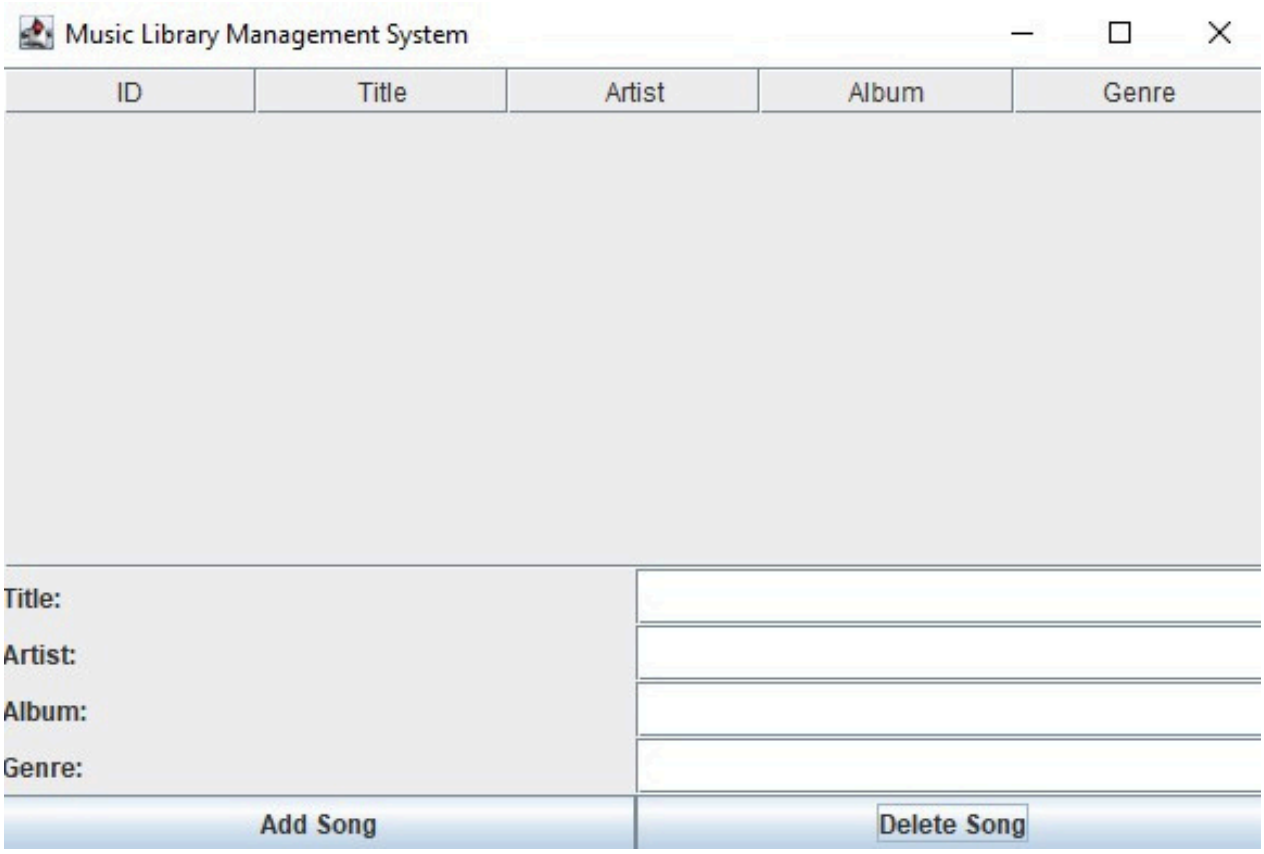


## 4.3 SELECTION OF SONG WHICH IS NEEDED TO BE DELETED

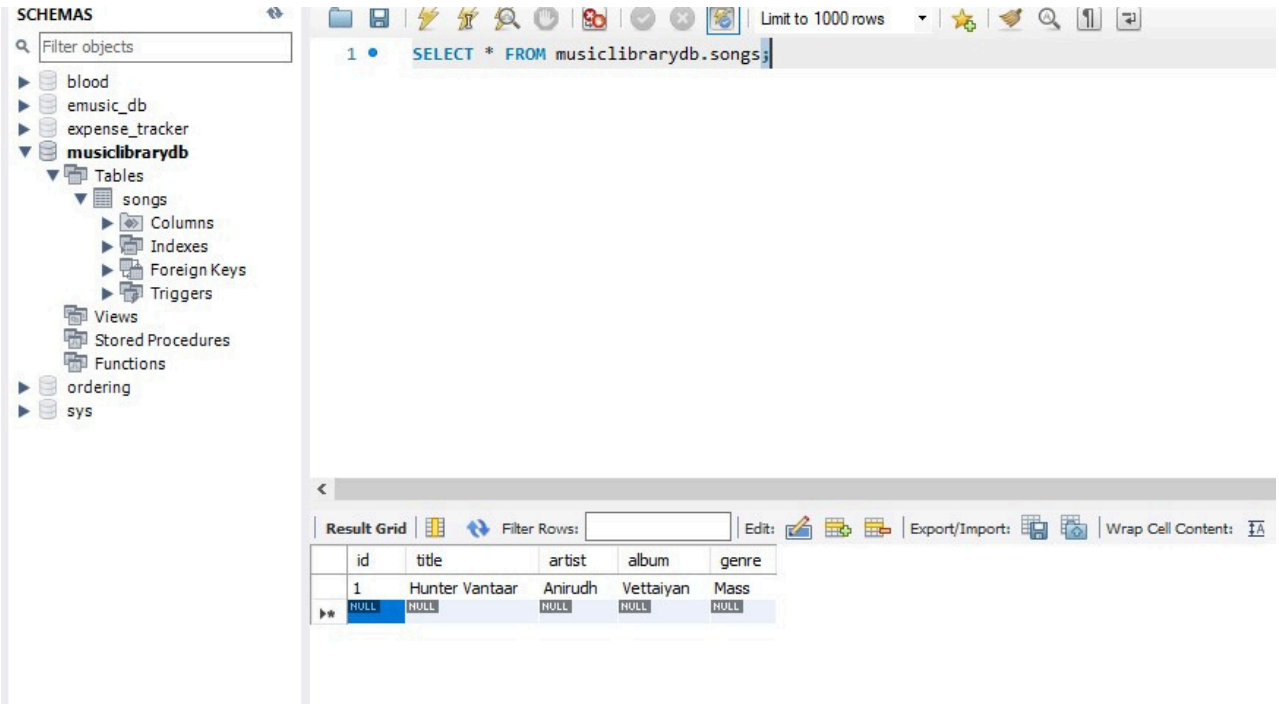


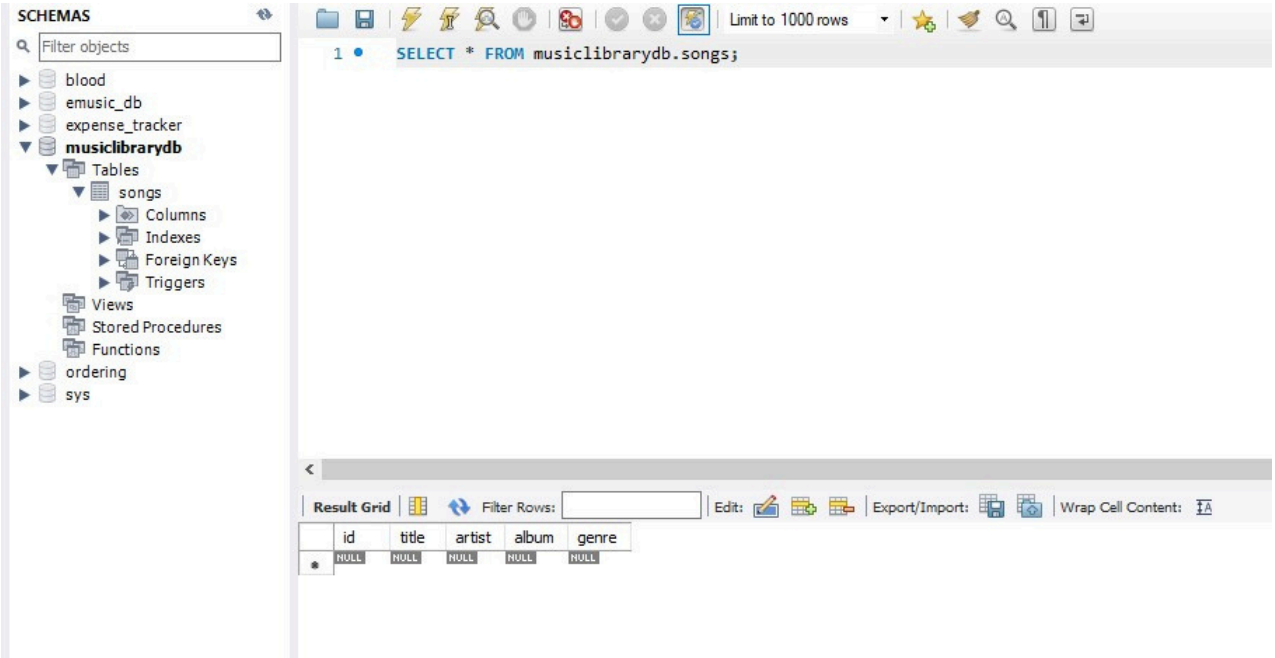
## 4.4 INTERFACE AFTER DELETION



## 4.5 A) INTERFACE IN MY SQL AFTER ADDITION




## 4.5 B) INTERFACE IN MY SQL AFTER DELETION



# CONCLUSION

The Music Library Management System is a comprehensive solution for organizing and managing digital music collections efficiently.

By leveraging Java's robust programming capabilities and MySQL's reliable database management, the system ensures a seamless user experience for personal and professional applications.

In conclusion, this project successfully demonstrates how technology can be utilized to modernize and streamline the management of music libraries, making it accessible and efficient for users across various domains.

# REFERENCES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2. https://www.w3schools.com/sql/

3. https://chatgpt.com/

4. SQL | Codecademy