FAST School of Computing

Object Oriented Programming (OOP)

MUSIC PLAYER APPLICATION

Project Final Report

Instructor: Talha Shahid

Course Code: CL-1005

Section: BS-AI/2A

Group Members:

Syed Muneeb Ur Rahman (23K-0038)

Syeda Sara Ali (23K-0070)

Adina Faraz (23K-0008)

1. Introduction:

- The main aim of this project is to develop a music player application using C++, providing users with a platform to manage, organize, and play .wav music files.
- Proposing a user-friendly and efficient application for music playback that provides all the controls required to manage music files with a user-friendly graphical user interface (GUI).

2. Technology Used:

- C++ was chosen as the primary programming language, as it is a powerful language known for its performance and versatility.
- Different libraries and frameworks are used to facilitate audio playback, user interface design, and file handling.
- WinForms, a GUI framework is used for building the application's user interface.

3. Key Features:

- **MUSIC LIBRARY MANAGEMENT:**
  User can add, remove, and organize their music collection within the application, supporting .wav audio file format.

- **PLAYBACK CONTROL:**
  Standard playback controls like play, pause, stop, next, and previous are provided.

- **PLAYLIST SUPPORT:**
  User can create, edit, and manage playlists according to their preferences, allowing them to create a personalized collection of their favorite songs.

- **SEARCH FUNCTIONALITY:**
  A search feature allows the user to instantly search for a specific song or album in the library.

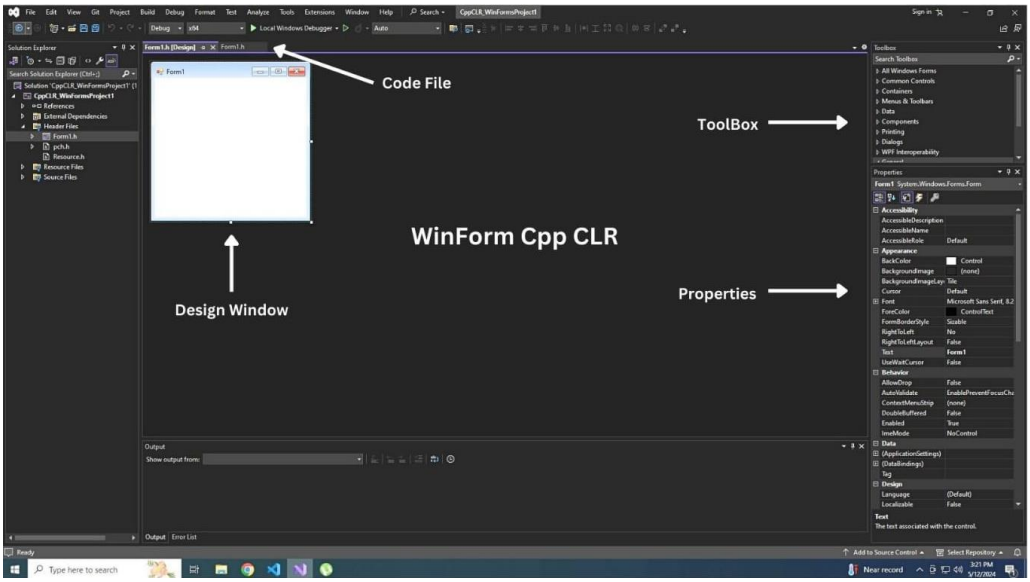
4. Design:

- The application adopts a modular design approach, as it separates the presentation layer (WinForms used) from the programming and the logic applied.
- The programming used, allows different parts of the application to work together smoothly and respond quickly and efficiently to the user's action, making it easy and enjoyable to use.

5. User Interface of the App:

- The user interface is designed using WinForms, offering a visually appealing experience for users.
- Intuitive Navigation Ensure that users can easily find and use the features.
- The application prioritizes intuitive navigation, ensuring users can easily find and use the features.

6. Overview of WinForms: Key Features and Advantages:



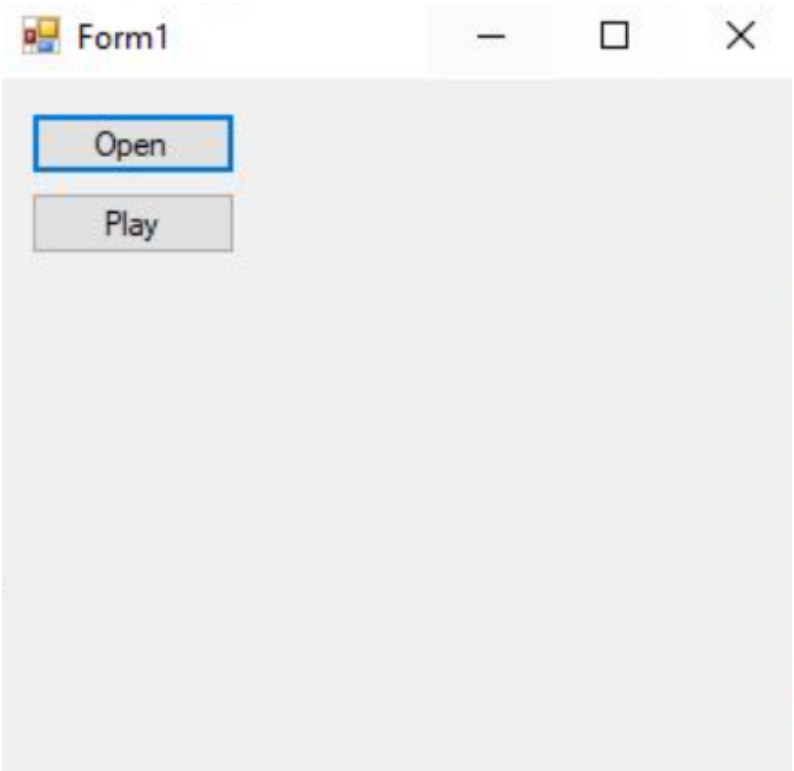
- ***GUI Design:*** WinForms lets you easily create app interfaces by dragging and dropping elements in tools like Visual Studio.

- ***Event-Driven Programming:*** WinForms handles user actions (like button clicks) and triggers specific app responses.

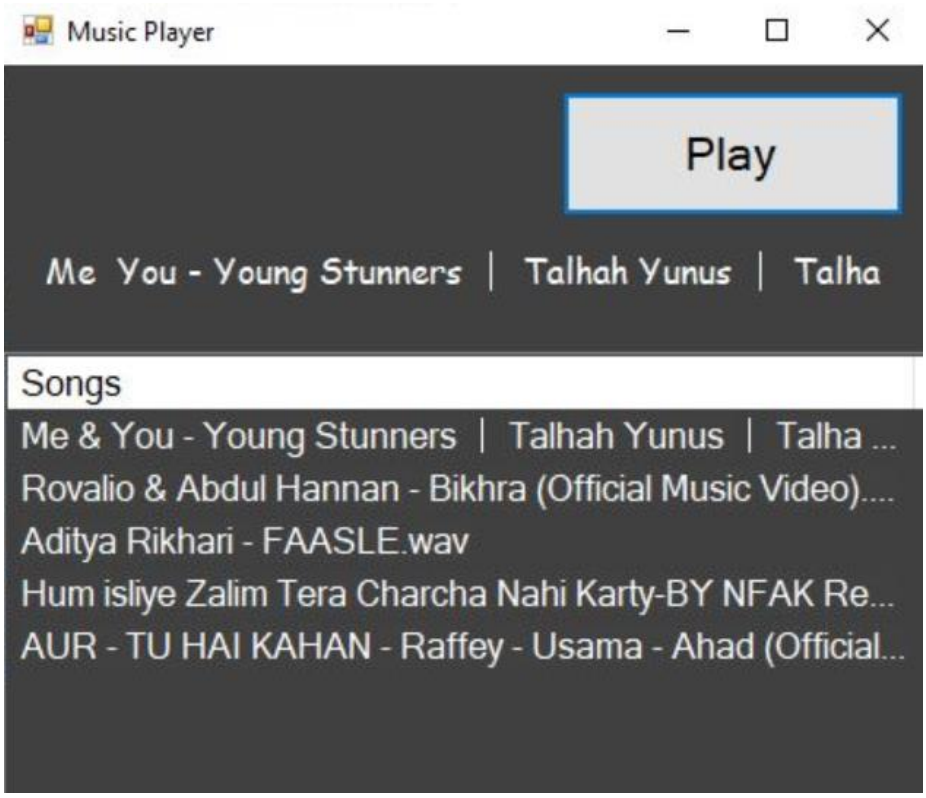
- ***Controls:*** WinForms provides ready-made building blocks (buttons, labels, etc.) that you can customize and arrange to create your app's layout.
- ***Data Binding:*** Connect UI elements directly to data, like info from a database, without writing extensive code.
- ***Localization and Accessibility:*** WinForms allows your app to work in different languages and be accessible to people with disabilities.
- ***Deployment:*** Easily install WinForms apps on Windows computers.
- ***Integration:*** WinForms seamlessly integrates with other .NET technologies for more advanced features.

7. Progress:

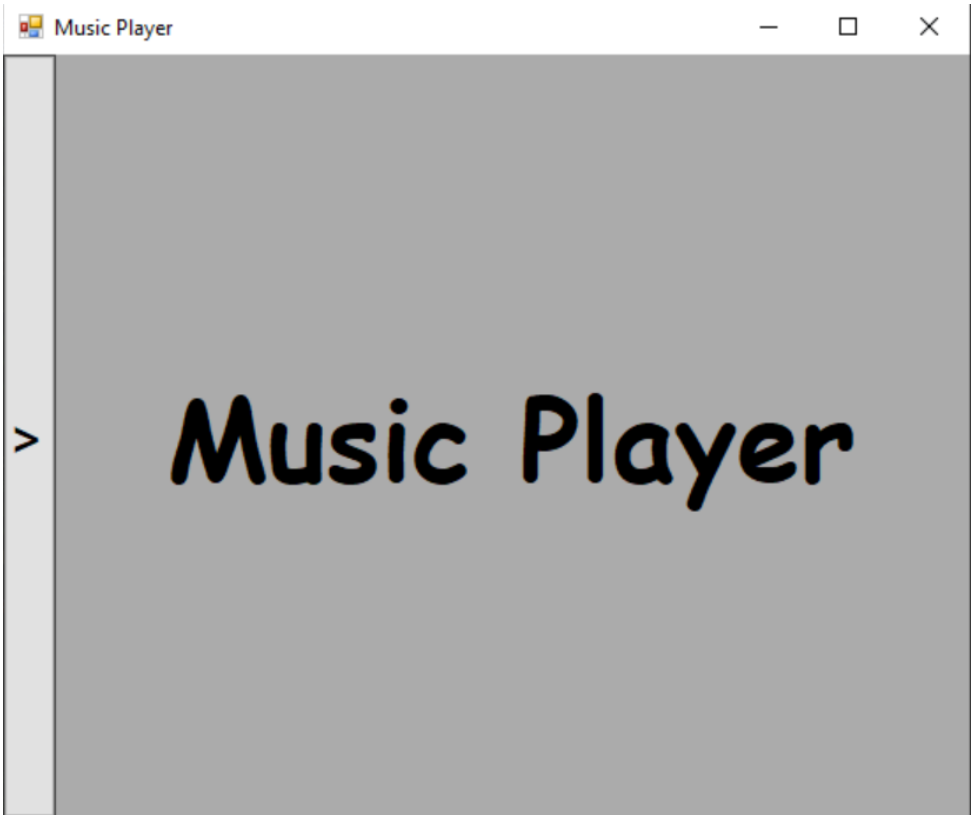
- **First Draft:**



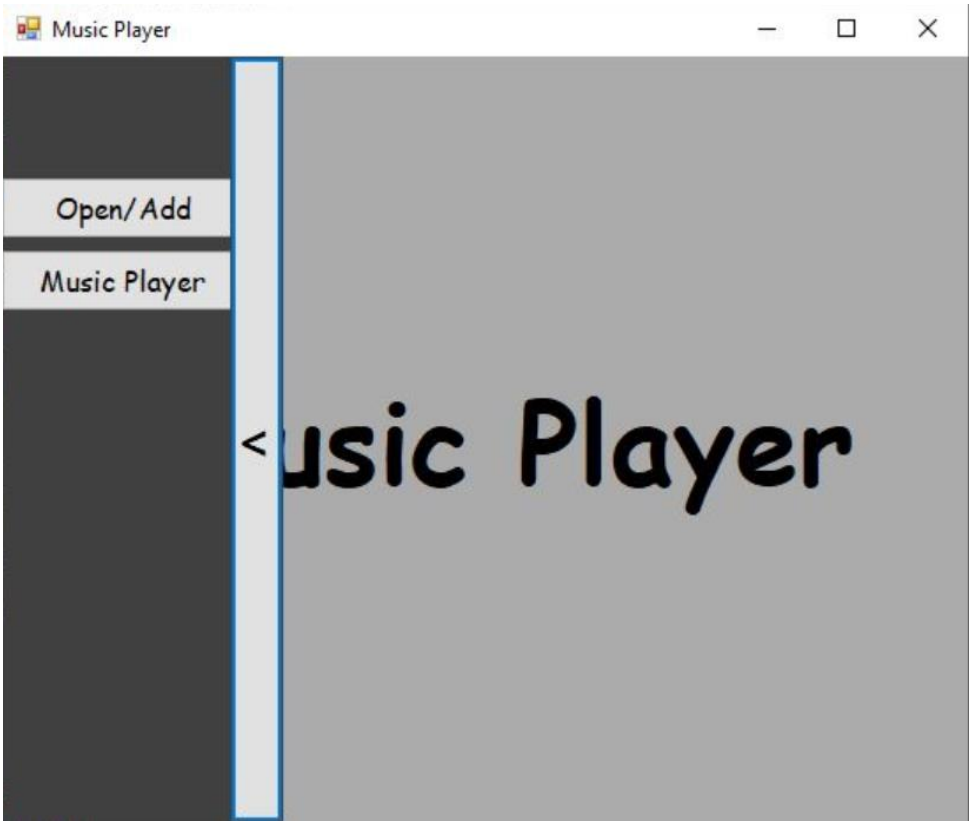
- **Second Draft:**



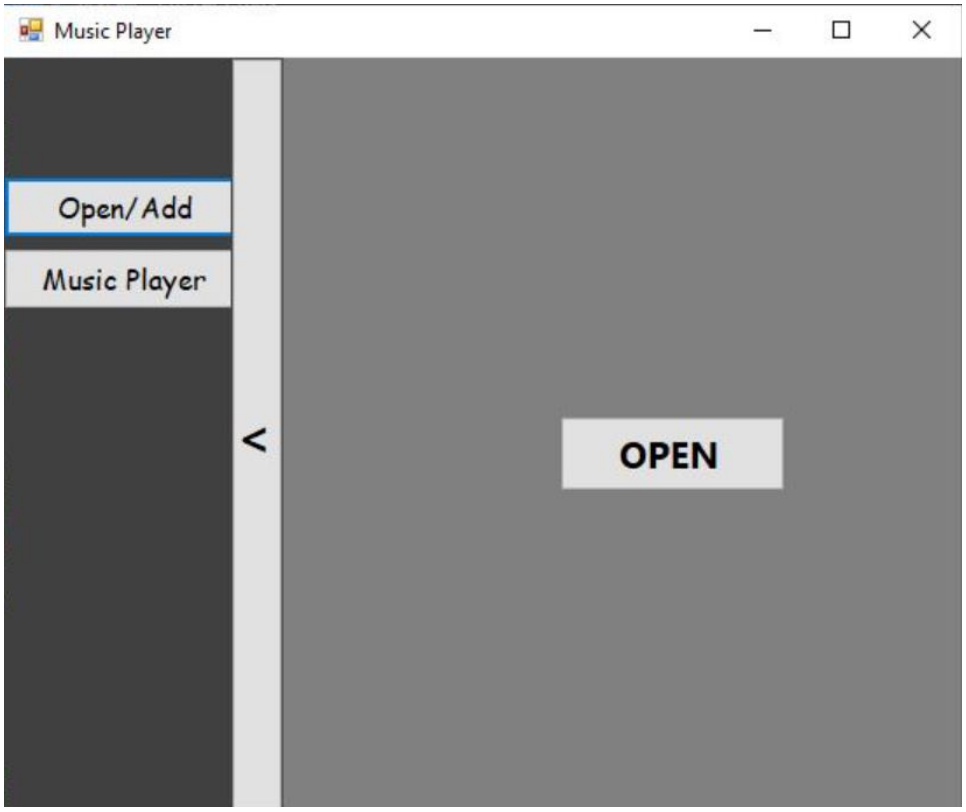
- **Final Draft:**



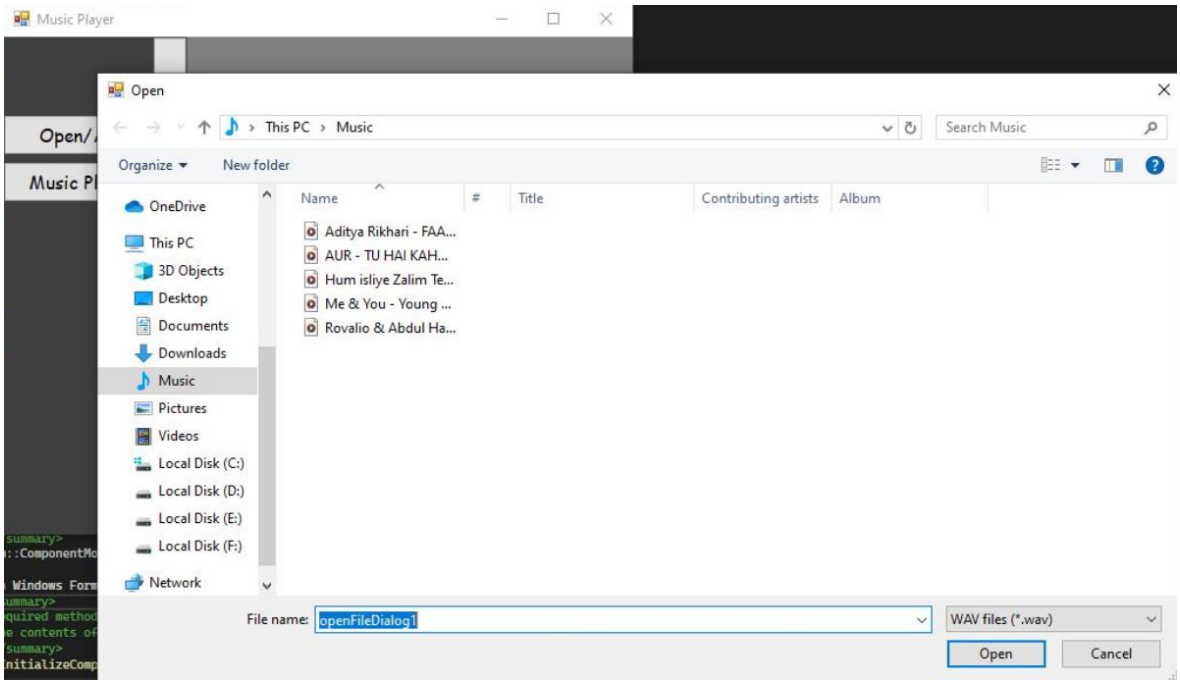
Expandable Animated Menue



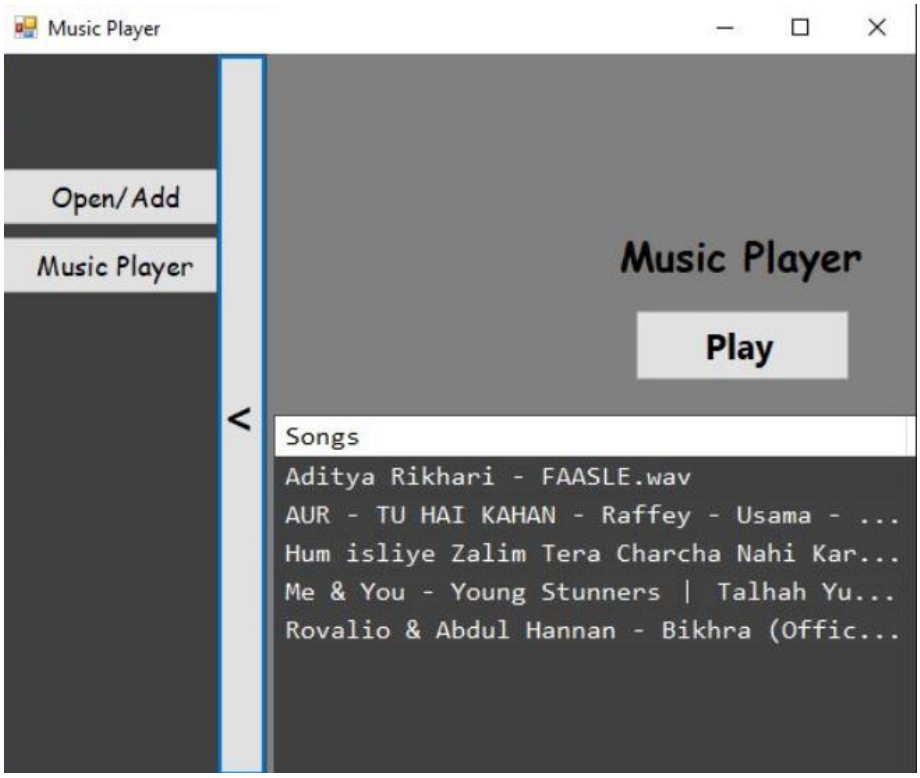
Open Form



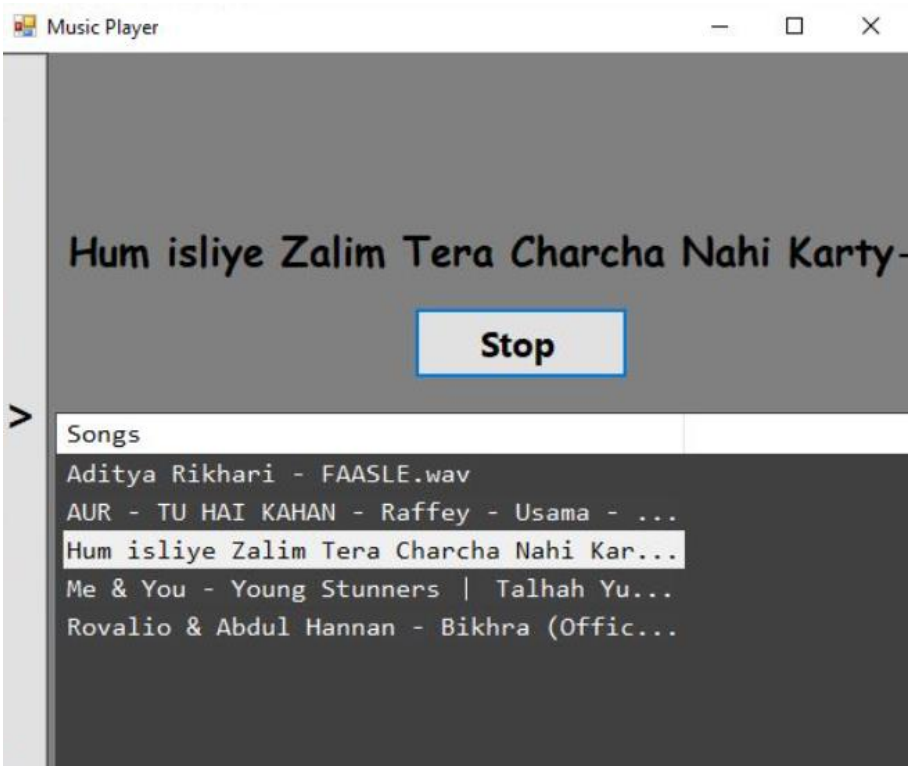
Open File Dialog Box:



Music Form


Music Player
Open/Add
Music Player
<
Music Player
Play
Songs
Aditya Rikhari - FAASLE.wav
AUR - TU HAI KAHAN - Raffey - Usama - ...
Hum isliye Zalim Tera Charcha Nahi Kar...
Me & You - Young Stunners | Talhah Yu...
Rovalio & Abdul Hannan - Bikhra (Offic...

Play/Stop



8. Dependencies:

- The Microsoft Visual Studio IDE provides the necessary tools and libraries for C++ programming.
- The Microsoft Foundation Class (MFC) library is used for creating Windows Forms applications in C++, providing classes and functions for handling user interface, controls, and events.
- The .NET Framework offers a vast library of pre-built functions and classes for C++ WinForms applications.
- The Windows Software Development Kit (SDK) includes essential headers, libraries, and tools for Windows application development.

9. Challenges Faced:

- Learning and understanding C++/CLI for developing a WinForms application.
- Since there is limited support for C++ in WinForms, we attempted to convert a C# WinForms codebase to C++.

- Encountered errors while trying to integrate the VLC media player into our application, possibly due to difficulties understanding the required dependencies.
- Challenges faced in releasing the application due to some issues with dependencies of Windows Media Player.

10. Future Enhancements:

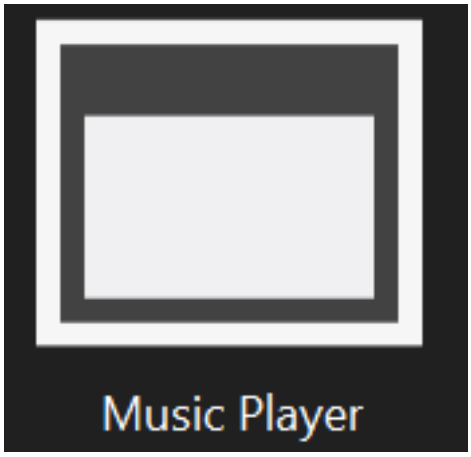
- Include support for other audio formats including MP3, FLAC, and more.
- Improve performance, ensuring a seamless user experience across different devices.
- Implement volume and equalizer control, providing customizability, accessibility, audio optimization, and immersive user experience.

11. Conclusion:

- The music player application developed using C++/CLI and WinForms has successfully achieved its objectives.
- Providing a feature-rich and user-friendly platform for managing and enjoying music collections.
- This project provides valuable insights into software development practices.
- Dedications toward continuous improvement in the future, ensuring the advancement of this application.

12. References:

- ***https://github.com/muneebsyed6698/OOPS-Project---Spring-2024/tree/main/Update%2002***


Music Player