



FPT MUSIC PLAYER PROJECT

PRN212 PROJECT REPORT

Team 3

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I. Record of Changes

Date	A* M, D	In charge	Change Description

*A - Added M - Modified D - Deleted

II. Project Introduction

1. Overview

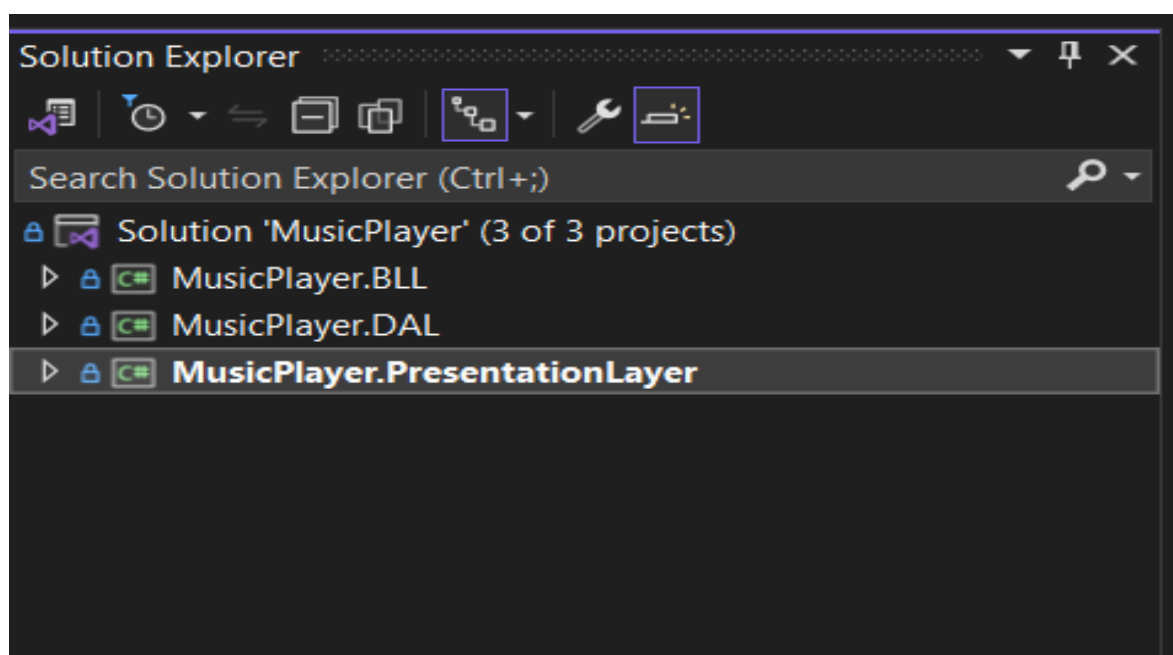
1.1 Project Information

- Project name: FPT Music Player
- Project code: FUM
- Group name: Group 3.
- Software type: WPF C#

1.2 Project Team

Student ID	Full Name	Role	Assign Work
SE170476	Lại Trần Nhật Anh	Leader	Handle Backend, build and maintain data processing mechanism and perform dynamic actions of the project
SE170497	Võ Lê Đức Anh	Member	Design UI screens
SE170489	Nguyễn Quang Sơn	Member	Design UI screens
SE170479	Phan Đức Hậu	Member	Write project reports and make presentation slides, design Figma

1.3 3-Layer Architecture



2. Product Background

The digital music landscape has evolved significantly over the past few decades, transitioning from traditional physical media to digital formats. Despite the abundance of music player applications, many users still seek a solution that combines performance, usability, and seamless integration with their digital ecosystems.

The concept of the FPT Music Player emerged from this demand. It aims to fill the gap left by existing music players by offering a robust, feature-rich application developed using Windows Presentation Foundation (WPF) and C#. This technology stack ensures a modern, responsive user interface and leverages the power of .NET for backend functionality.

Feedback from a diverse customer base revealed a demand for a music player that is not only aesthetically pleasing but also highly functional and customizable. By addressing these needs, the FPT Music Player aims to provide a superior music listening experience, distinguishing itself in a crowded market through its unique combination of design and functionality.

3. Existing Systems

To design a feature-rich and user-friendly FPT Music Player, it is essential to analyze existing systems that offer similar functionalities. This analysis helps in understanding the strengths and weaknesses of current solutions, allowing us to incorporate the best features and avoid common pitfalls.

4. Technology in use

- **Language installer:** C Sharp (C#)
- **Platform:** WPF (Windows Present Foundation)
- **Libraries and tools:**
 - o **Visual Studio:** Integrated development environment (IDE) used for application development.
 - o **GIT:** Distributed version management system used to manage source code projects.

5. Project goals

- **Create a modern and friendly user interface:** Use Windows Present Foundation (WPF) technology and C# to develop intuitive, easy-to-use and modern user interfaces, enhancing user experience.
- **Support offline music listening:** Allows users to download and listen to music without an internet connection, ensuring an uninterrupted music listening experience anytime, anywhere.
- **Ensure high and stable performance:** Develop applications with smooth performance, fast loading times and no lag, ensuring a seamless and stable user experience.

6. Development process

6.1. Planning and Requirement Gathering

- Conduct market research to identify user needs and preferences.
- Gather detailed requirements from stakeholders, including end-users, internal teams, and project sponsors.
- Define the scope and objectives of the FPT Music Player.
- Develop a project plan, including timelines, milestones, and resource allocation.

6.2. System Design

- Design the system architecture using Windows Presentation Foundation (WPF) and C#.
- Create wireframes and mockups for the user interface.
- Define the database schema and data storage solutions.
- Identify and design key features such as playlist management, equalizer settings, and library organization.

6.3. Development

- Set up the development environment with necessary tools and frameworks.
- Develop the front-end using WPF to ensure a modern and responsive UI.
- Implement the back-end functionalities using C# and .NET.
- Integrate essential features like personalized playlists, offline listening, and real-time lyrics display.
- Perform continuous integration and regular code reviews to ensure code quality.

6.4. Testing

- Develop a comprehensive testing plan covering all aspects of the application.
- Conduct unit testing to ensure individual components function correctly.
- Perform integration testing to verify that different modules work together seamlessly.
- Execute user acceptance testing (UAT) with a group of end-users to gather feedback and identify any issues.
- Address bugs and performance issues identified during testing.

6.5. Deployment

- Prepare the application for deployment, including packaging and documentation.
- Deploy the FPT Music Player to a staging environment for final testing.
- Perform a thorough review and final testing in the staging environment.
- Deploy the application to the production environment.

7. Results and reviews

7.1. Achieved Results

- **Completion of Core Features:**
 - The FPT Music Player application has successfully implemented core features such as music playback, customizable playlists, equalizer settings, and real-time lyrics display. Additional features like offline music playback and data synchronization have also been successfully deployed.
- **User-Friendly Interface:**
 - The application interface is designed to be modern and easy to use, providing an intuitive and convenient user experience.
- **Stable Operation:**
 - The application has been thoroughly tested and operates reliably, with smooth performance and no lag issues.

7.2. Evaluation

- **Completion Timeline:**
 - The FPT Music Player project was completed on schedule, with all core features successfully implemented and tested.
- **Work Quality:**
 - Team members worked efficiently, ensuring high-quality deliverables and meeting project goals. The collaboration and contributions of each member were crucial to the project's success.
- **Learning and Improvement:**
 - The project provided valuable experience for team members in developing WPF applications and enhancing teamwork skills. The lessons and skills gained from this project will be beneficial for future projects.

8. Main Features

- Unauthenticated user: Register
- Authenticated user: Login, Upload, Delete song, Add playlist, Add song to playlist, select song to play, ...

9. Lessons Learned

9.1. Importance of Understanding User Needs

- **Lesson:** During the development of the FPT Music Player, understanding user needs and preferences was crucial for designing relevant and engaging features. Conducting surveys and gathering feedback from users helped shape the core features of the application, such as personalization and music recommendations.

- **Experience:** Always listen to and analyze user feedback to ensure that the product meets their needs. This helps enhance user satisfaction and retention.

9.2. Significance of Thorough Testing

- **Lesson:** To ensure the application operates reliably and without significant issues, thorough testing is essential. The FPT Music Player underwent extensive testing to identify and resolve bugs before release.
- **Experience:** Invest time and resources in comprehensive testing and ensure that the application is tested across different devices and environments. This ensures smooth and reliable performance.

9.3. Importance of a User-Friendly Interface (UI)

- **Lesson:** The user interface (UI) plays a crucial role in attracting and retaining users. The FPT Music Player focuses on a modern and easy-to-use interface to provide the best user experience.
- **Experience:** Invest in UI design to ensure that the application is easy to use and intuitive. A friendly interface not only improves user experience but also increases the application's accessibility and usability.

9.4. Project Planning and Management

- **Lesson:** Effective project management and detailed planning are crucial to ensure that the project is completed on schedule and meets its objectives. The FPT Music Player was developed according to a clear plan and managed closely.
- **Experience:** Develop a detailed project plan and ensure that all team members understand their goals and responsibilities. Manage time and resources efficiently to ensure progress and quality.