**CCT College Dublin**

**Assessment Cover Page**

|  |  |
| --- | --- |
| **Module Title:** | Cross platform Development, Interactive Application Development |
| **Assessment Title:** | Music Player |
| **Lecturer Name:** | David González, Sam Weiss |
| **Student Full Name:** | Rhuan Mendanha Eli Raimundo (2023186) Henrique Queiros de Morais (2023288) |
| **Student Number:** | Rhuan Mendanha Eli Raimundo (2023186) Henrique Queiros de Morais (2023288) |
| **Assessment Due Date:** | 07/05/2025 |
| **Date of Submission:** |  |

**Declaration**

|  |
| --- |
| By submitting this assessment, I confirm that I have read the CCT policy on Academic Misconduct and understand the implications of submitting work that is not my own or does not appropriately reference material taken from a third party or other source. I declare it to be my own work and that all material from third parties has been appropriately referenced. I further confirm that this work has not previously been submitted for assessment by myself or someone else in CCT College Dublin or any other higher education institution. |

**Table of Contents**

[**Introduction – Criafy: 3**](#_Toc197195975)

[**Contributions & Technical Learnings: 3**](#_Toc197195976)

[**Team Support: 3**](#_Toc197195977)

[**Challenges: 3**](#_Toc197195978)

[**Reflection & Personal Thinking: 3**](#_Toc197195979)

# Introduction – Criafy:

Personally, and technically, working on MyMusicApp has been one of the most rewarding exercises. I was part of a MyMusicApp development team, which is multi-disciplinary. As a member of the team, I tried to adapt to the challenges that impacted me professionally as a developer, and also as a collaborator.

# Contributions & Technical Learnings:

My Electron application expertise was built around its integration as a shell of a desktop application. This experience taught me a lot about building the main process (main.js), communication bridges in preorder (preload.js) and renderer security surfacing. Realizing the scope of this project from its architecture was challenging, especially with my understanding of the main and renderer process. I was completely ignorant of ipc and, with the help of documentation and self-guided experimentation, I learned that enabling file loading, playing, and other controls required seamless enablement of inter-process communication. Synchronizing audio playback with UI elements like the progress indicator and play/pause button required precise control of real-time audio state for each user action. Implementation of player. js was vital to crafting the application’s playback logic, which I had the opportunity to partake in. Intermediate performance optimization along with modular design was something I learned while striving to maintain responsiveness throughout single sessions of prolonged play.

# Team Support:

Inter-team collaboration is not something that I take for granted and was a highlight of this course. At first, we focused on completing tasks individually, but as time went on, we began to help overlap into different areas to help each other out. To give an example, when I was also dealing with backend processes like integration, I was also helping with UI debugging and cleaning code. Standups allowed us to discuss together the state of progress on trackers and any blockers or next documented steps. With such communication, we were able to organize quite well and ensure that there was forward momentum throughout the project.

Best practices of version control were employed using Git, and a clean main branch was always preserved alongside using feature branches for workflow. This streamlined the review process for the code, which is done for everyone, as well as reduced merge conflicts enabling us to work much smoother.

# Challenges:

Issues with platform compatibility worried me the most. Electron conceals most of the system-specific details, yet problems still appeared—like the differing ways file paths are handled on Windows and macOS. Struggle with these differences took extra logic and testing to resolve.

Spectron also did not provide much instruction on E2E testing in an Electron environment, which frustrated me to no end. I managed to make Spectron work after interfacing with it enough to execute basic actions, but the process did exhaust my patience.

# Reflection & Personal Thinking:

Full stack encapsulated everything I had to do for this project and was a welcome surprise. System architecture, UI design, automated testing, and almost everything else in the application was something I engaged with by the myself. The project improved my understanding of how important clean and maintainable code is, as well as debugging deeper asynchronous systems. I am pleased with the amount of progress made. This project was a demonstration of skill, starting from a nonfunctional blank slate and turning it into a desktop music player, all experiencing a practical learning opportunity. There is more confidence and preparedness for my next software role, feeling able to competently join any technical team and make a difference.