

## Collaboration Report for Music Library Manager Project - CSc 335

### Team Members:

- Muhammad Asifur Rahman
- Dante Bernal

### Project Overview:

Our project involves developing a music library management system using Java. The system includes a pseudo-database for albums (MusicStore), a user library (LibraryModel) with support for songs, albums, playlists, and favorites, as well as a text-based user interface (MusicLibraryView). We collaborated on designing, implementing, testing, and documenting the project while using GitHub for version control and Agile practices for iterative development.

**1. Challenges Faced in Collaboration:** Coordinating ideas and clarifying design decisions was challenging at first. We addressed this by keeping in touch (both by email and text messages) and using GitHub issues to track tasks and questions regarding updates. While integrating our code, we encountered merge conflicts, especially in files we worked on simultaneously. We resolved these by frequently pulling changes, communicating our planned changes in advance, and using Git's merge tools to reconcile differences. Initially, our coding styles differed. We fixed this by agreeing on a set of coding conventions and reviewing each other's commits for consistency.

**2. Future Improvements in Collaborative Projects:** In future projects, we plan to break down tasks more explicitly and assign clear responsibilities at the outset. This would reduce overlapping work and merge conflicts. We'd hold brief daily or bi-daily stand-ups to quickly discuss progress, roadblocks, and next steps. We aim to document design decisions more thoroughly, using UML diagrams and inline comments, to avoid misunderstandings and streamline the development process. I believe that both my partner and I deserve the same grade because we equally contributed to every part of the project, from design and implementation to testing and documentation. Our commit history on GitHub reflects a balanced workload, and we collaborated on solving challenges together. We both actively participated in discussions, code reviews, and integration efforts.

**4. Work Allocation Breakdown:** I focused on implementing the core domain classes in the `model` package (Song, Album, Playlist) and contributed heavily to the LibraryModel. Also participated in testing and writing unit tests for these classes. Led the development of the MusicStore (in the `store` package) and the user interface in the `view` package (MusicLibraryView). Also helped integrate the UI with the backend and resolved merge conflicts during integration. We both collaborated on the design of the main application structure in the `app` package and on ensuring overall project consistency.

**5. Agile Principles and Practices Utilized:** We committed and pushed our changes frequently to GitHub, ensuring that our integration was smooth and that our codebase was always in a working state. At various stages of the project, we worked together on particularly challenging sections (for example, designing the MusicStore's file parsing logic), which improved code quality and ensured mutual understanding. We held regular meetings to review our progress, discuss issues, and adjust our approach. This iterative process helped us quickly identify and fix bugs, as well as adapt our design based on new insights.