The Console–Based Concert Ticket System is a application designed to manage concert ticket sales and event details through a text–based console interface. The primary focus of this project is to implement and demonstrate the principles of Object–Oriented Programming (OOP). The system will include functionalities such as user selection, event browsing, seat selection, and ticket purchasing, all encapsulated within well–defined classes and objects. The emphasis on OOP ensures a modular, maintainable, and extensible codebase, which is crucial for future enhancements and scalability.

Team Member Details

1. Name: William Liu (kl3694)
   Role: Project Manager, Lead Developer
   Responsibilities: Overseeing the project, designing the system architecture, and implementing core functionalities.

2. Name: Robin Wang (cw3544)
   Role: Developer, UI/UX Designer
   Responsibilities: Developing the user interface elements, enhancing user experience, and ensuring usability.

Description of the Project
The Console–Based Concert Ticket System is an OOP–centric application aimed at managing various aspects of concert ticketing through a console interface. The system will support operations such as user management, event listing, seat selection, and ticket booking. Each aspect of the system will be represented as a distinct class, utilizing OOP concepts like encapsulation, inheritance, and polymorphism. The project aims to provide a comprehensive understanding of OOP by applying these principles in a real–world application context.

Proposed Features
1.   User Login:Management of user information, including login functionality.
2.   Event Management: Handling details about concerts, such as date, venue, and available seats, with the ability to update event details.
3.   Ticketing System: Managing ticket creation, seat selection, and tracking, including unique ticket identifiers and handling ticket modifications.
4.   Seat Selection: Managing seating arrangements, availability, and the selection process as part of the ticketing system.
5.   Payment and Transaction Handling: Simulating the ticket purchasing process and handling transactions.

6. Admin Functionality: Providing additional functionalities for event organizers to manage event details and monitor sales.
7. Command–Line Interface: Handling user input and output, providing a seamless interaction experience through the console.

Technical Approach

The development of the Console–Based Concert Ticket System will revolve around applying Object–Oriented Programming concepts. The system architecture will include well–defined classes with specific responsibilities, ensuring a clear separation of concerns. Key OOP principles such as encapsulation will be used to protect data within classes, while inheritance will allow for the extension of base classes to create specialized functionalities. Polymorphism will enable flexible method implementations.

The project will use Java, leveraging its strong support for OOP features. GitHub will be employed for version control and collaboration, ensuring a systematic and trackable development process. The system will undergo rigorous testing to validate the correctness of each class and method, focusing on edge cases and user scenarios.

Clarifications and Adjustments

Seat Selection Feature: The seat selection feature will be part of the Ticketing System module. The management module will handle changes to ticket information.
Command–Line Interface: The Command–Line Interface will handle user input and output, focusing on interaction through the console/terminal.
Scope: The application will be console–based, not GUI–based.