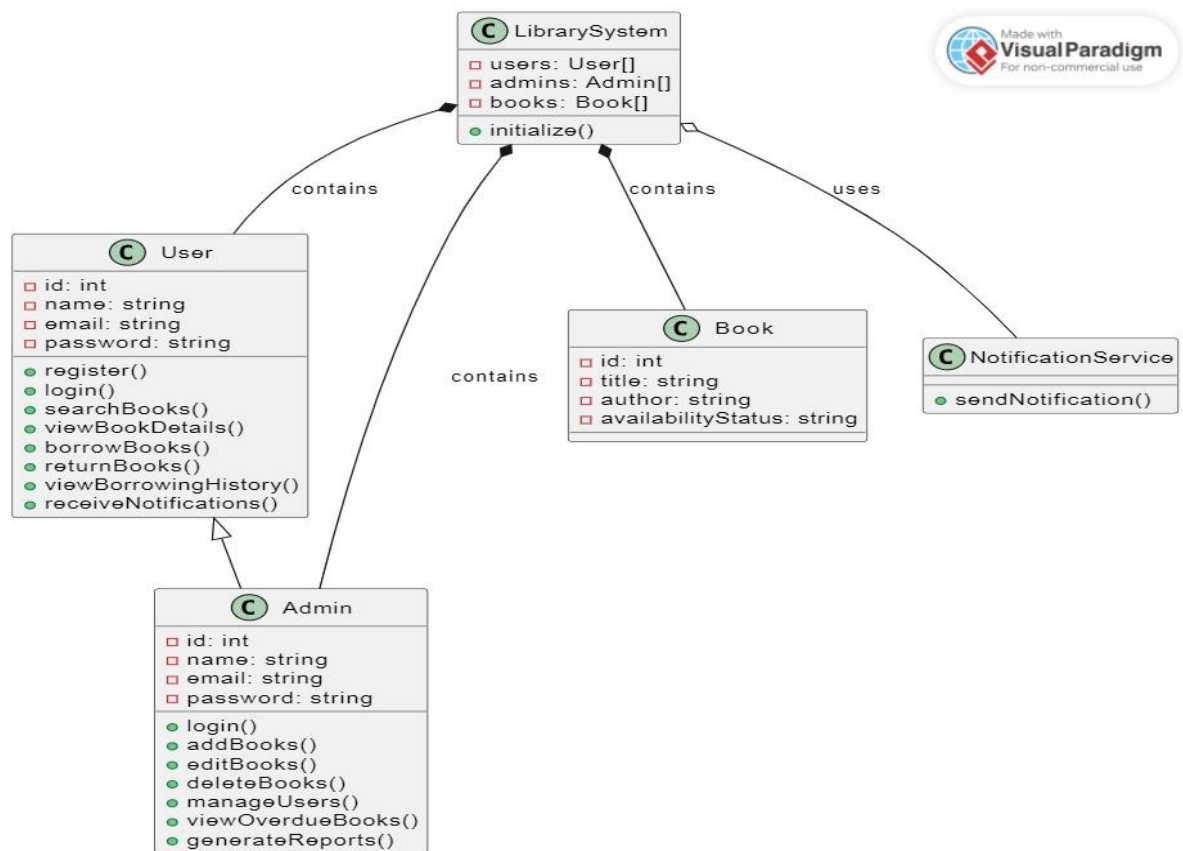


# Project Name: Library Management System (LMS)

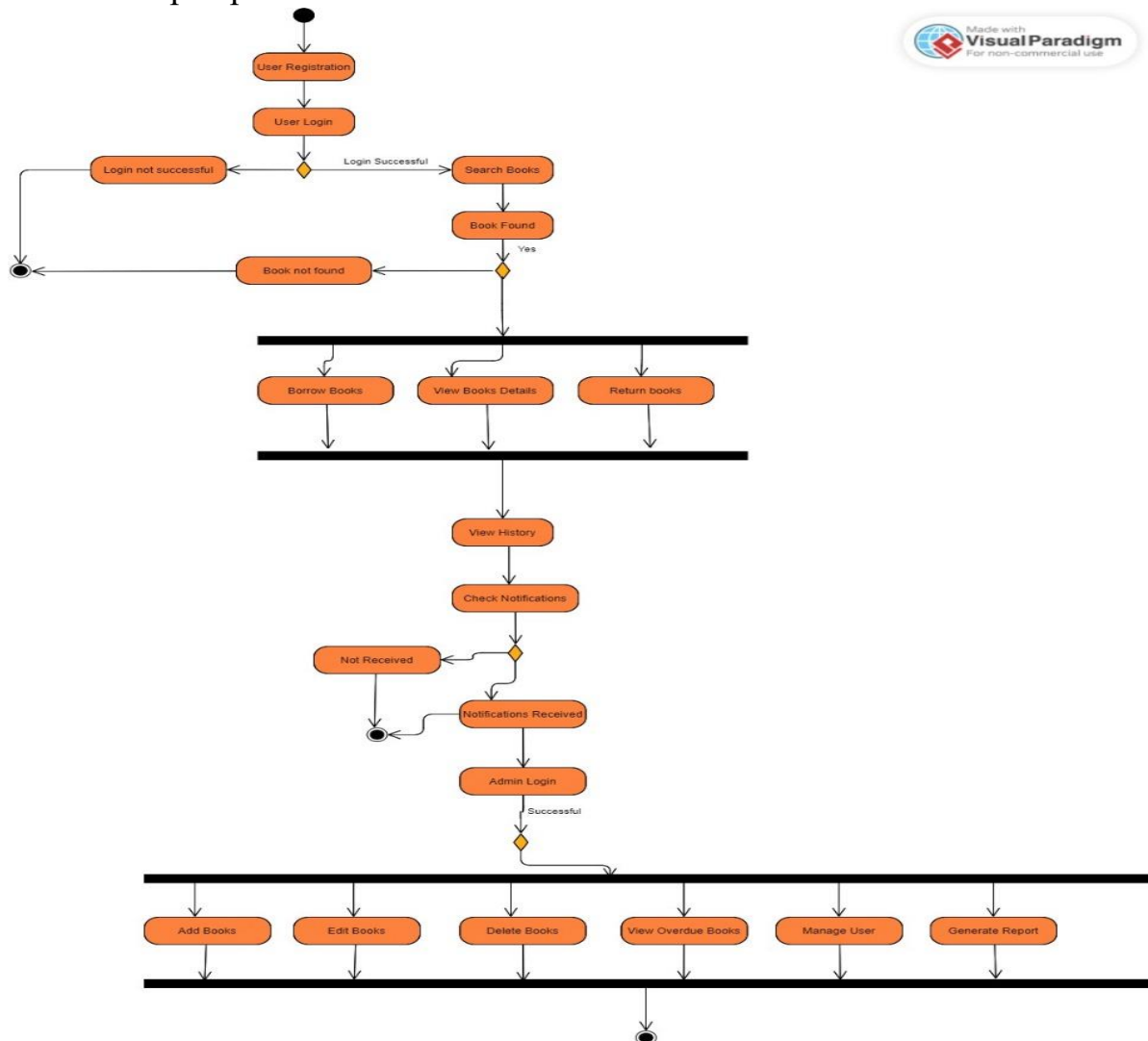
## ➤ Class Diagram:

1. Defines classes like User, Admin, Book, Library System, and Notification Service with their attributes and methods.
2. Illustrates relationships such as inheritance (User to Admin) and composition (Library System containing Users, Admins, Books, and Notification Service).
3. Represents key functionalities of the system through class interactions and associations.
4. Ensures clear delineation of responsibilities and interactions between different components.
5. Serves as a blueprint for implementing the system's logic and data structure.



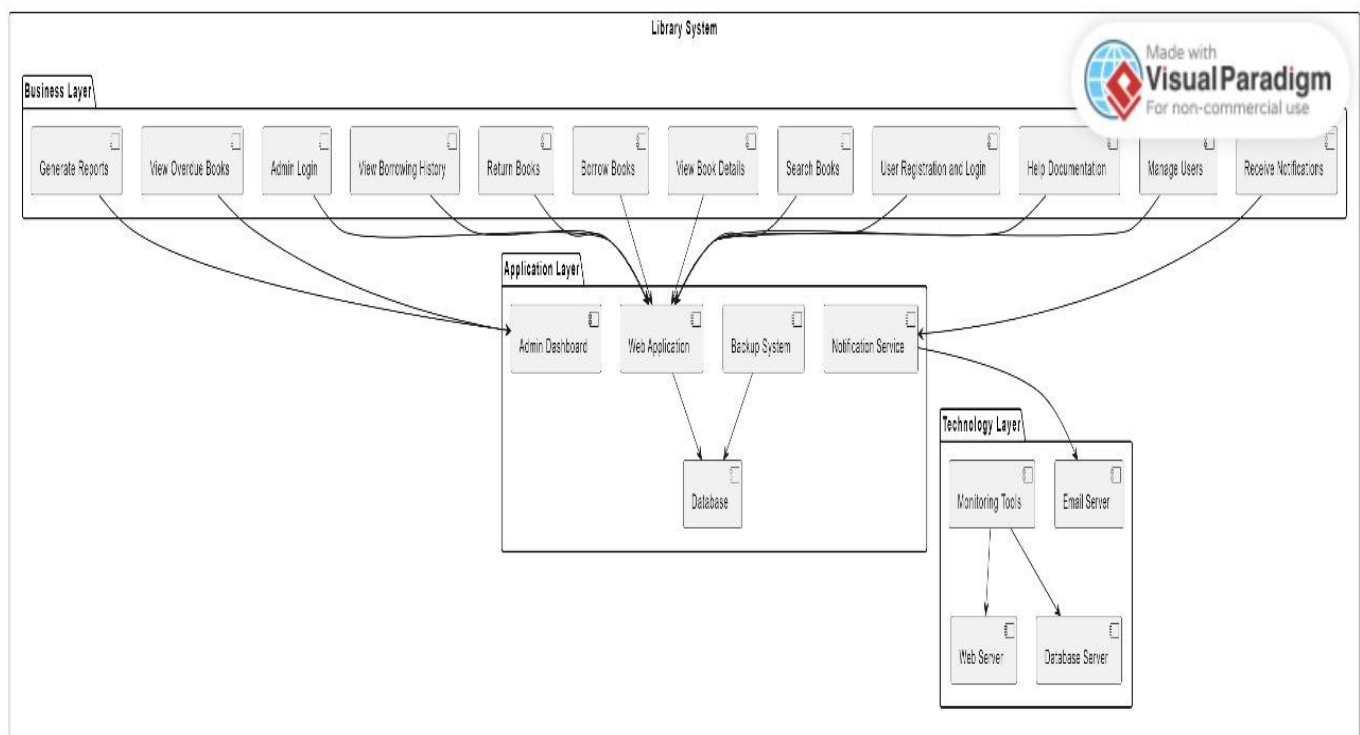
## ➤ Activity Diagram:

1. Maps out user and system activities such as registration, book search, borrowing, and admin operations.
2. Incorporates decision points to handle conditions like book availability or overdue notifications.
3. Offers a visual representation of the flow of actions and decisions within the system.
4. Helps in identifying potential bottlenecks or inefficiencies in the workflow.
5. Facilitates understanding of the system's behavior and logic from a user interaction perspective.



## ➤ Architectural Diagram:

1. Illustrates the system's overall structure with distinct layers for presentation, business logic, and data.
2. Shows interactions between components such as user interface, application logic, and data storage.
3. Highlights interfaces with external systems or services, like databases and email servers.
4. Ensures separation of concerns and modular design for easier maintenance and scalability.
5. Provides a high-level overview of system components and their relationships.



## ➤ Sequence Diagram:

1. Visualizes the chronological sequence of messages exchanged between objects during system interactions.
2. Captures user actions such as login, book borrowing, and admin tasks like adding or editing books.
3. Represents system responses to user inputs, including error handling and notifications.
4. Helps in understanding the flow of control and data during use case executions.
5. Facilitates communication among stakeholders by depicting detailed interactions at a glance.

