

School Library System Project

Software Design Specification

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Group #16 Team Members

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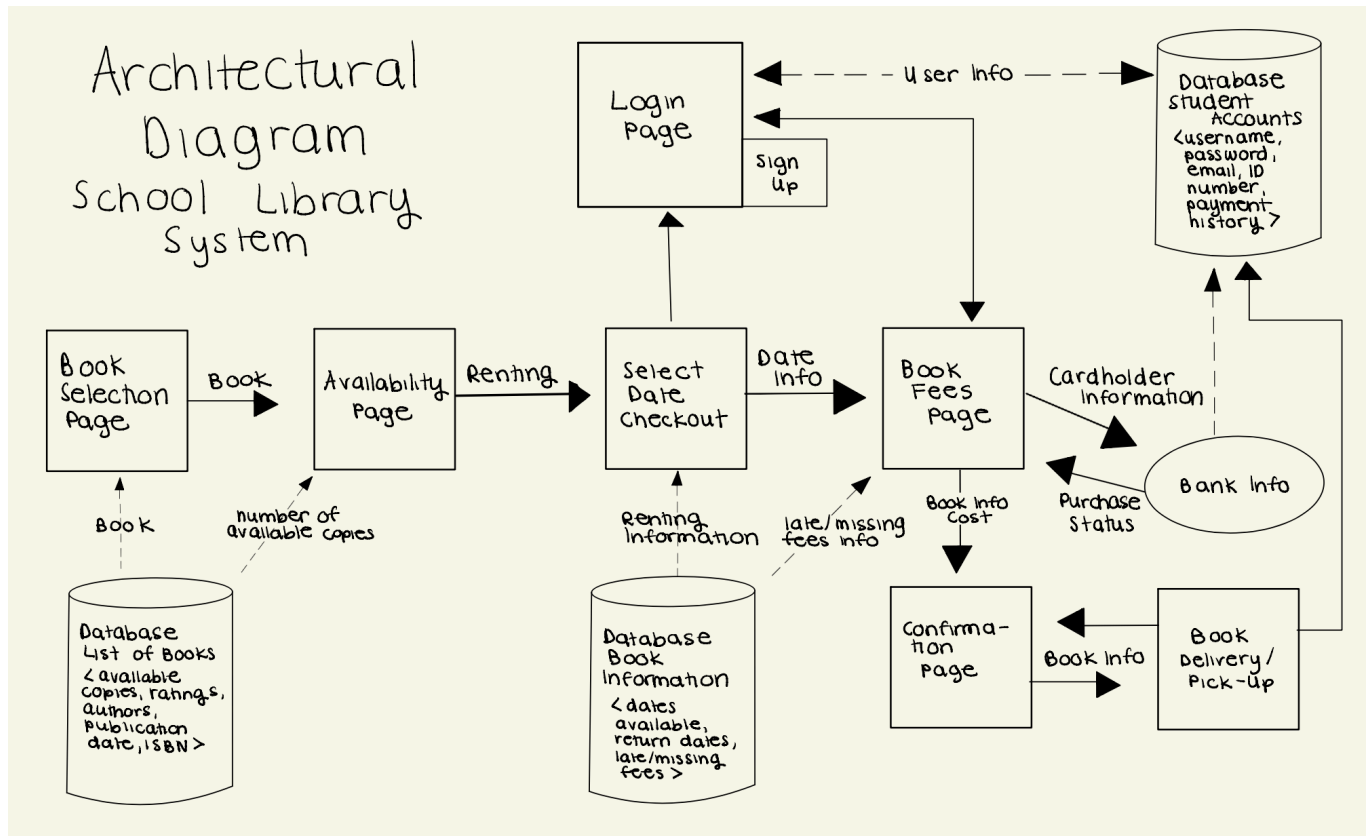
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1. System Description

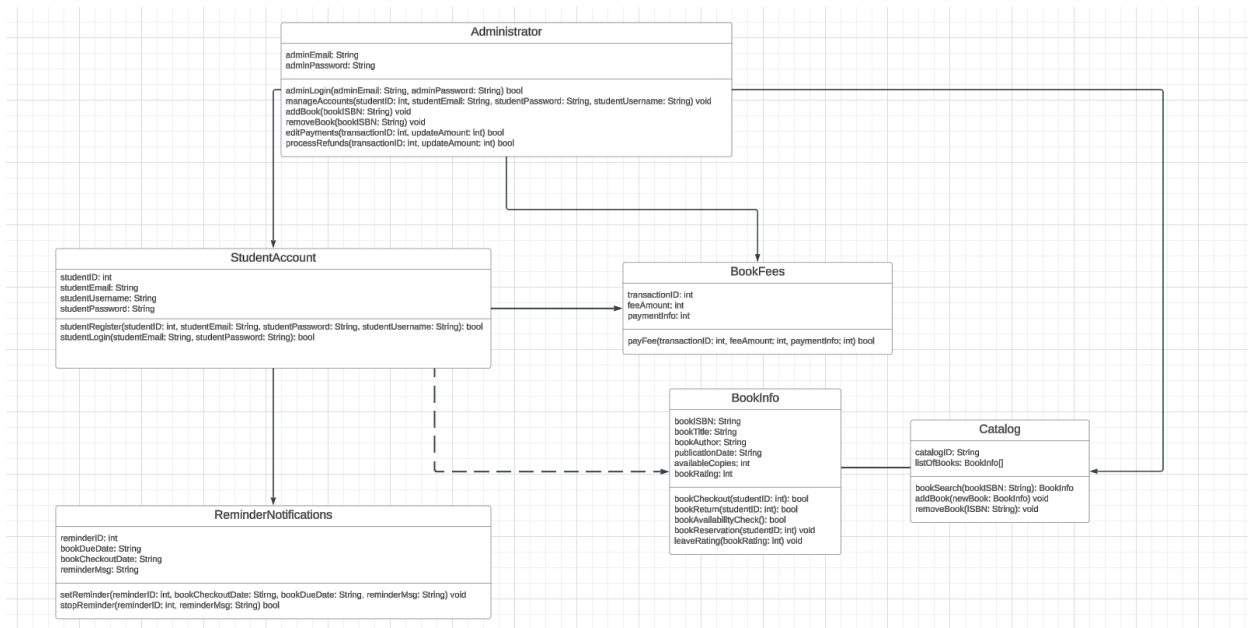
This software system is a mobile app designed for school libraries in which it efficiently integrates the library's catalog data and utilizes student ID/student email addresses for account creation. The mobile app is designed to encourage students to utilize their school library more frequently by simplifying access to services such as checking out books and checking book availability. Upon checking out a book, the app will also display information such as the initial borrowing date and the due date while additionally providing students with the functionality to request for extensions, set reminders, leave book ratings, and pay fees all within the app. An administrator mode will also be available that would allow the administrator to fix any mistakes students might make pertaining to the aforementioned services.

2. Software Architecture Overview

2.1 Architectural Diagram



2.2 UML Class Diagram



2.3 Description of Classes

2.3.1 User Class

The user class is utilized by students to create an account and check-out/return books through an app.

2.3.1.1 Attributes

- Student ID/student email address and password
- Borrowed book list
- Book ratings and reviews
- Reminder settings
- Fee payment history

2.3.1.2 Operations

- Login and account creation using Student ID/Student email address
- Browse library catalog
- Check book availability
- Borrow books
- Request extensions on borrowed books
- Set reminders for due dates
- Leave book ratings and reviews
- Pay fees
- View borrowing history

2.3.2 Administrator Class

The administrator class is used by the admin to control and access the app. The admin may make changes to book availability, fees, and, overall, how the app operates.

2.3.2.1 Attributes

- Admin account name and password
- Access control

2.3.2.2 Operations

- Override errors made by users (e.g., incorrect return dates)
- Manage library catalog data
- Add, remove, or update books in the catalog
- Manage student accounts
- Security Management
- Financial management
- Student/Collaboration communication

3. Development Plan and Timeline

Each group member worked together to first brainstorm ideas and establish a software system to work on. Once the idea of a school library system was established, the classes and their attributes and operations were discussed and created as a team. Next, tasks were split up among group members. Once each group member finished their part of the project, they pushed a commit of the pdf file of the project to the group repository github.