
Library Management System - Project Part 1: Vision/Plan

EECS447: Database Systems

Team Name: ASYNClib
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Professor: Hossein Saiedian
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Revisions

Version: 1.3

Version	Date	Author	Description
1.1	08/27/25	Nick, Ashton, Cole, Sean, Yadhunath	Made the initial draft, assigned roles, created the document template
1.2	09/03/25	Nick, Ashton, Cole, Sean, Yadhunath	Worked on the Vision Statement, Scope Statement and team organization and profile.
1.3	09/14/25	Nick, Ashton, Cole, Sean, Yadhunath	Made final changes to the document.

Vision Statement:

Libraries stand as epicenters of knowledge, holding vast collections of data within limited physical space. Managing this wealth of information effectively can be a daunting challenge. Database systems offer a powerful solution by transforming complex data management into something simple and efficient — just a few keystrokes away.

At ASYNCLib (named after the initials of our team members), our vision is to make library data an accessible resource rather than a burden. We aim to design a clear and comprehensive database that organizes essential information about books and resources, while offering features that make access simple, intuitive, and enjoyable for every user.

We want to create an experience where clients can quickly find what they need, explore collections with ease, and interact with the system without technical barriers. At the same time, we are committed to maintaining strong safeguards, including secure and anonymous views, to ensure user privacy. Ultimately, our goal is to reimagine library data management — turning it into a tool that empowers, supports learning, and makes the library experience smoother for everyone.

Scope Statement:

Our scope of the project would extend, and is not only limited to the following:

- *A resource management system*
  - Books will include attributes such as title, author, ISBN, publication year, genre, and availability.
  - Magazines will include attributes such as title, issue number, publication date, and availability.
- *A client and membership management system*
  - Clients will have attributes such as unique ID, name, contact information, membership type, and any borrowing restriction
  - Multiple membership categories will exist such as regular, student and senior
- A system for tracking borrowed, returned and reserved media
  - A system for users to reserve media currently on loan
  - All media will be tracked with timestamps and client details
  - Enforce constraints on borrowed items depending on membership type
  - Enforce constraints on late return fees depending on membership type
- A user interface

- Will allow Library Staff to check out items, process returns, add new items, and manage client accounts.
- Will allow for generation of fine calculations, media availability status, and client profiles.

Team Organization and Profiles:

❖ Ashton

- ***ROLE***: Deployment Lead
  - Responsible for ensuring all project documents and files are uploaded and up to date on GitHub
  - Collaborate with team members on creating and uploading the database and filling in the data included in it
  - Ensure that files are configured correctly for proper connectivity
- ***CONTACT***: a492s477@ku.edu
- ***EXPERIENCE***: 2 years Python, 1 year C++

❖ Nick

- ***ROLE***: Team Lead
  - Responsible for overall project coordination, ensuring team members are working on tasks cooperatively.
  - Ensure that delegated tasks are completed in a timely manner to adhere to deadlines
  - Would be the main point of contact for team
- ***CONTACT***: Nick.Paslay@ku.edu
- ***EXPERIENCE***: 2 years python, 1 year C/C++, compilation, embedded devices

❖ Sean Crosby

- ***ROLE***: Quality Engineer
  - Would be responsible for ensuring that the database is tested and free of bugs
  - Responsible for developing tests case for the database to ensure performance
  - Main point of contact for any team members needing help with code
- ***CONTACT:*** s804c771@ku.edu
- ***EXPERIENCE:*** 1 year MySQL, 2 years JS and node.JS, 4 years Python

❖ Cole Cooper

- ***ROLE:*** Database Administrator
  - Responsible for any maintenance, such as implemented additional data, and optimization for the database
  - Collaborate along team members for managing database backups and implemented the needed access controls
  - Would be the main point of contact for monitoring database infrastructure and managing backups

- ➢ ***CONTACT:*** c459c999@ku.edu
- ➢ ***EXPERIENCE:*** 3 years Python, 1 year C++

❖ Yadhunath Tharakeswaran

- ➢ ***ROLE***: Lead Data Engineer
  - Would be responsible for constructing the database and be providing insights and making the database more scalable for the provided use case.
  - Will be collaborating alongside other team members on updates, issues, and performance of the database.
  - Would also be the main point of contact before making any major changes to the database structure and architecture.

- ➢ ***CONTACT:*** yadhu2003@ku.edu (Availability: Tu-Th → 9am-12pm, W → 12-1 pm)

- ➢ ***EXPERIENCE:*** Python (4yrs), MySQL & PostgresSQL (2yrs), MongoDB (1yr), React & Node.js (2yrs), Django (1yr).

Upcoming improvements:

In the upcoming versions, we will expand our focus to include the identification of key database stakeholders such as end-users, administrators, and other relevant parties. A major part of this phase will involve specifying the essential functions the database must support, including user administration, data entry, retrieval, updates, deletions, and report generation.

We will also define the core data entities, their attributes, relationship sets, acceptable data types, and constraints to ensure accuracy and consistency. Beyond functional needs, we will address non-functional requirements, emphasizing scalability and performance optimization. These enhancements will be implemented on the MySQL database server, which has been selected as the hardware platform for our project.