

Project Title: Modern day Library management system

Course Code: CS699B

Student Name: Ganesh Kumar Kandula

Institution Name: Rivier University

Submitted To

Professor: Vladimir Riabov

Department of Computer science

Rivier University

1.Functional Requirements

1. purpose/description

1.A. Abilities

- Enhance Library materials: The system should have the ability to improve the selection of books. This includes the capability to add new materials based on student requests.
- Modernize Library Systems: The system should be capable of simplifying access to materials by updating the library's catalog and management system.
- Improve User Experience: The system should enhance the library atmosphere to make it more hospitable and user-friendly.This could involve features such as user friendly interfaces for accessing materials.
- Target Secondary Schools: The system should primarily focus on the unique requirements and preferences of secondary school students, recognizing their distinct needs compared to larger institutions.
- Practicality: The system should concentrate on changes that can be implemented within the constraints of the schools current resources and budget.

2. Appearance

- The system's user interface should be user-friendly, so that the student is able to use the system well and without much help.
- The system should provide a place for both students and librarians to send requests for new books.
- The system should be visually appealing and attractive so as to improve the atmosphere in the library.

3. Use case

Use Case1- Library Materials Enhancement

Primary Actor(s): Librarians, Students

Stakeholders and Interest: School administration, students, teachers, librarians

Trigger: Request from students or librarians to log in.

Pre-conditions: Library materials inventory available

Post-conditions: Enhanced library materials available

Main Success Scenario:

Librarians or designated personnel procure the requested materials.

The newly acquired materials are cataloged and added to the library inventory.

Extensions:

If a request is denied, provide a reason and feedback mechanism for the requestor.

Priority: High

Special Requirements: Integration with the library catalog system

Open Questions: How frequently should material requests be reviewed?

4 Field Level Specifications.

4.A. Form Elements

Field Label: Username

UI Control: Textbox

Mandatory: Yes

Editable: Yes

Data Type: Alphanumeric

Data Example: student001

Label Name: What will collect data on the screen

Field Label: Password

UI Control: Textbox

Mandatory: Yes

Editable: Yes

Data Type: Alphanumeric

Data Example: student987

Label Name: What will collect data on the screen

4.B. Form Business rules and dependencies.

Field Label: Username

Validation/Business Rules: Username shall be the student email/name.

Error Messages: For incorrect username, display "Please provide a valid username."

Data Dependencies: None

Label Name: What will collect data on the screen

4.C. Buttons, Links.

Button, Link Label: Submit

OnClick Event: Verify if the username and password are correct. If yes, log the user into the system.

Visible: Yes, always.

Enabled vs. Disabled: Enabled always. If the submit button is clicked when the fields are empty, a message is displayed: "Please fill out this field."

Navigate To: User dashboard.

Validation: Verify if the username is valid, and username and password match with the registry data.

Button Label Name: What operation will be performed when the button is clicked.

5. Non-functional requirements

- Performance:
Response Time: The system should respond to users searching for books or accessing catalog within a reasonable time frame.
- Scalability:
The system should be scalable to accommodate a growing number of users, books, and materials without a significant decrease in performance.

- Security:
Data Security: User data, including personal information and reading history, must be securely stored and protected against unauthorized access or breaches.
- Reliability:
Availability: The system should be available to users during library operating hours with minimal downtime for maintenance or updates.
- Usability:
User-Friendly Interface: The user interface should be intuitive and easy to navigate, ensuring that students, librarians, and other users can interact with the system without extensive training.
- Compatibility:
Browser Compatibility: The system should be compatible with common web browsers to ensure accessibility from various devices and platforms.
- Integration:
Integration with Existing Systems: The system should seamlessly integrate with the school's existing IT infrastructure, including network systems and databases.
- Scalability Testing:
Scalability Testing: The system's scalability should be tested to determine how it performs as the user base and data volume grow.
- Usability Testing:
Usability Testing: Usability testing with actual users should be conducted to gather feedback and make improvements to the user interface and user experience.