**Product Requirements Document:**

RFID-Based Library Management System

Bulldogs Book Express

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1.0 Objectives

|  |  |
| --- | --- |
| Vision | An embedded RFID-Based Library Book Check-In/Out Kiosk for the National University Fairview Learning Resource Center. |
| Goals | Make the borrowing process for NU Fairview students faster and easier. |
| Initiatives | Improve self-check-in/out process  Automate book checkout processing  Enhance inventory management  Enhance user experience |
| Persona(s) | Students and Librarians from NU Fairview |

Table 1 Objectives

2.0 Release

Table 2 Test and Release Plan

|  |  |
| --- | --- |
| Release | Bulldogs Book Express 1.0 |
| Date | 11/06/2022 |
| Initiative | Launch the kiosk and web portal for public trials before a full launch |
| Initiatives | Prototype Version  Contracts and Legal  Connected App Finalization  Alpha Testing  Beta Testing  Launch  Delta Testing |
| Features | Students:   * Library Catalog * Borrow and Return Books with ID or Credentials * View Account Status and Due Dates * Provide Feedback about Library Services * Receive Library Notifications/Updates   Library Staff:   * Add, Remove, or Update Books in Catalog * Process the Kiosk via RFID Tag Scanning with Automatic Updates * Generate Reports |
| Dependencies | Subscriptions  Stakeholders |

3.0 Features

Table 3 List of Features: Library Catalog

|  |  |
| --- | --- |
| Feature | Student: Library Catalog |
| Description | Browse books on a catalog with search options. |
| Purpose | Allow students to browse the library catalog to find available books. |
| User Problem | Difficulty in finding and accessing books in the library. |
| User Value | Efficient access to the library's catalog and resources. |
| Assumptions | Assumes a well-maintained and organized library catalog. Assumes an online catalog interface. |
| Not Doing | Not providing advanced search options. |
| Acceptance Criteria | 1. Users can browse the library catalog, search for books, and access relevant information, and the system displays results accurately. |

Table 4 List of Features: Borrow and Return Books

|  |  |
| --- | --- |
| Feature | Student: Borrow and Return Books |
| Description | Enables students to borrow and return books from the library using a kiosk. |
| Purpose | Facilitate the efficient management of library resources, enhance the student experience, and ensure that books are available when needed. |
| User Problem | Students face challenges in borrowing and returning books, such as long wait times, manual paperwork, and difficulty tracking due dates. |
| User Value | Easy tracking of borrowed items and due dates. |
| Assumptions | The educational institution has a library system in place; Students have unique identification (e.g., student IDs) for book transactions. |
| Not Doing | Does not include online book reservations or requests. |
| Acceptance Criteria | 1. Students can borrow and return a book by scanning their student ID and the book's tag. |

Table 5 List of Features: Account Status and Due Dates

|  |  |
| --- | --- |
| Feature | Student: Account Status and Due Dates |
| Description | Allows library users to view their account status and due dates for borrowed materials. It provides transparency and easy access to important information related to their library accounts. |
| Purpose | Notify users with information about their library accounts, helping them keep track of borrowed items and due dates. |
| User Problem | Library users often struggle to keep track of their borrowed materials and due dates, leading to late returns and fines. |
| User Value | Convenient access to account status and due date information. |
| Assumptions | Users have valid library accounts.  Users can access the library's online platform. |
| Not Doing | This feature does not include the ability to pay fines online.  It does not provide functionality for renewing borrowed items. |
| Acceptance Criteria | 1. Users can log in to their library accounts securely. 2. The system displays a summary of the user's account status, including borrowed items and due dates. 3. Due dates are presented in a clear and user-friendly format. |

Table 6 List of Features: Provide Feedback about Library Services

|  |  |
| --- | --- |
| Feature | Student: Provide Feedback about Library Services |
| Description | Enables library users to provide feedback on library services, including suggestions, comments, and concerns. |
| Purpose | Collect valuable feedback from users to enhance library services and address their needs effectively. |
| User Problem | Users may have feedback or suggestions for library services, but they lack a convenient way to share them. |
| User Value | Users have a platform to express their opinions and suggestions. |
| Assumptions | Users are willing to provide feedback. |
| Not Doing | This feature does not include direct responses or support for resolving specific user issues. |
| Acceptance Criteria | 1. The form should allow users to enter text-based feedback, suggestions, or comments. 2. Users can submit feedback anonymously or provide their contact information, depending on their preference. |

Table 7 List of Features: Receive Library Notifications/Updates

|  |  |
| --- | --- |
| Feature | Student: Receive Library Notifications/Updates |
| Description | Allows library users to receive notifications and updates from the library, including announcements, event reminders, and important information about library services. |
| Purpose | Keep library users informed about relevant library activities, events, and updates. |
| User Problem | Users may miss out on important library events, announcements, or updates because they are not aware of them. |
| User Value | Users stay informed about library services and events. |
| Assumptions | Users have opted in to receive notifications. |
| Not Doing | This feature does not include unsolicited or excessive notifications. |
| Acceptance Criteria | 1. Users can opt in to receive library notifications through their account settings. 2. The library can send notifications via platform service. 3. Notifications should be clear, concise, and relevant to library services and events. |

Table 8 List of Features: Add, Remove, or Update Books in Catalog

|  |  |
| --- | --- |
| Feature | Librarian: Add, Remove, or Update Books in Catalog |
| Description | Allows librarians to manage the library catalog by adding new books, removing outdated ones, and updating existing book information. |
| Purpose | Give librarians the tools to maintain an organized and current library catalog. |
| User Problem | Librarians need a streamlined process for catalog management, including adding new acquisitions, removing damaged or outdated books, and updating book details. |
| User Value | Efficient catalog management, reducing manual data entry. |
| Assumptions | Librarians have the necessary permissions and access to the library catalog system. |
| Not Doing | This feature does not include purchasing or acquiring new books. |
| Acceptance Criteria | 1. Librarians can access a user-friendly interface to add new books to the catalog. 2. The system should validate book information for accuracy and completeness during the addition process. 3. Librarians can easily remove books from the catalog, specifying reasons for removal (e.g., damaged, outdated). 4. Any updates to the catalog should be reflected in real-time for library patrons. 5. There should be a version history or revision tracking for catalog updates. |

Table 9 List of Features: Process Check-outs via RFID Tag Scanning with Automatic Updates

|  |  |
| --- | --- |
| Feature | Librarian: Process the Kiosk via RFID Tag Scanning with Automatic Updates |
| Description | Enables librarians to streamline the book check-out process by using RFID tag scanning technology. |
| Purpose | Expedite and simplify the book check-out process, reducing waiting times for library patrons. |
| User Problem | Librarians provide additional assistance for manual processes. |
| User Value | Faster and more efficient book check-out process. |
| Assumptions | Librarians have access to RFID scanners and the library's catalog system. |
| Not Doing | It does not cover manual check-out methods. |
| Acceptance Criteria | The system should update the library catalog in real-time to reflect checked-out books. |

Table 10 List of Features: Generate Reports

|  |  |
| --- | --- |
| Feature | Librarian: Manage User Accounts, including Profile Updates |
| Description | Enables librarians to generate various reports related to library activities, such as circulation statistics, inventory summaries, and user demographics. It provides valuable insights for library management. |
| Purpose | Assist librarians in making data-driven decisions, tracking library performance, and complying with reporting requirements. |
| User Problem | Librarians need access to organized data and reports to monitor and improve library operations. |
| User Value | Efficient tracking of library performance. |
| Assumptions | The library maintains data on library activities. |
| Not Doing | It does not handle advanced data analysis. |
| Acceptance Criteria | 1. Librarians can access a reporting dashboard or interface. 2. The system provides a range of pre-defined report templates. 3. Librarians can customize report parameters, including date ranges and data filters. 4. Reports should be generated promptly and accurately. 5. Reports can be exported in common formats (e.g., PDF, CSV). |

4.0 User Flow and Design

Figure 1 User Flow Diagram

