

Bookworms Library Kiosk

Team 2

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Background



Self Service Checkout

Company name: LendIT Services

Services offered for,

- Libraries
- Bookstores

Existing resources:

- Self-service checkouts

Agenda

- Problem Statement
- System Request
- Business Value
- Business Requirements
- Special Issue and Constraints
- Context Diagram
- Structure Chart
- User Interface Demo
- Future Work

Problem Statement

- To offer almost full circulation functionality of a Library in less budget. (Latest CA library renovation & modernization budget : \$438 million)
- Enable contactless borrowing and easy access to materials beyond central locations.
- Address the “new normal” of post pandemic conditions.
- Provide 24/7 access to patrons.
- Ensure strategic placement of the kiosk to address diverse sections of a community.

System Request

Project Sponsor: Vice President, Marketing Department, LendIT Services

Business Need: In an era of drive-throughs, ATMs and cloud services, providing 24/7 access keeps libraries relevant and top of mind in the community without securing new funds for library buildings. Through smart kiosks, libraries can address the following needs:

- Versatility
- Outreach
- Community partnerships

Business Value:

Intangible:

- Partnering with public libraries will provide access to books and Wi-Fi to sub-urban communities increasing outreach.
- Increasing outreach of the library services through kiosks would attract more readers thereby increasing library subscribers.

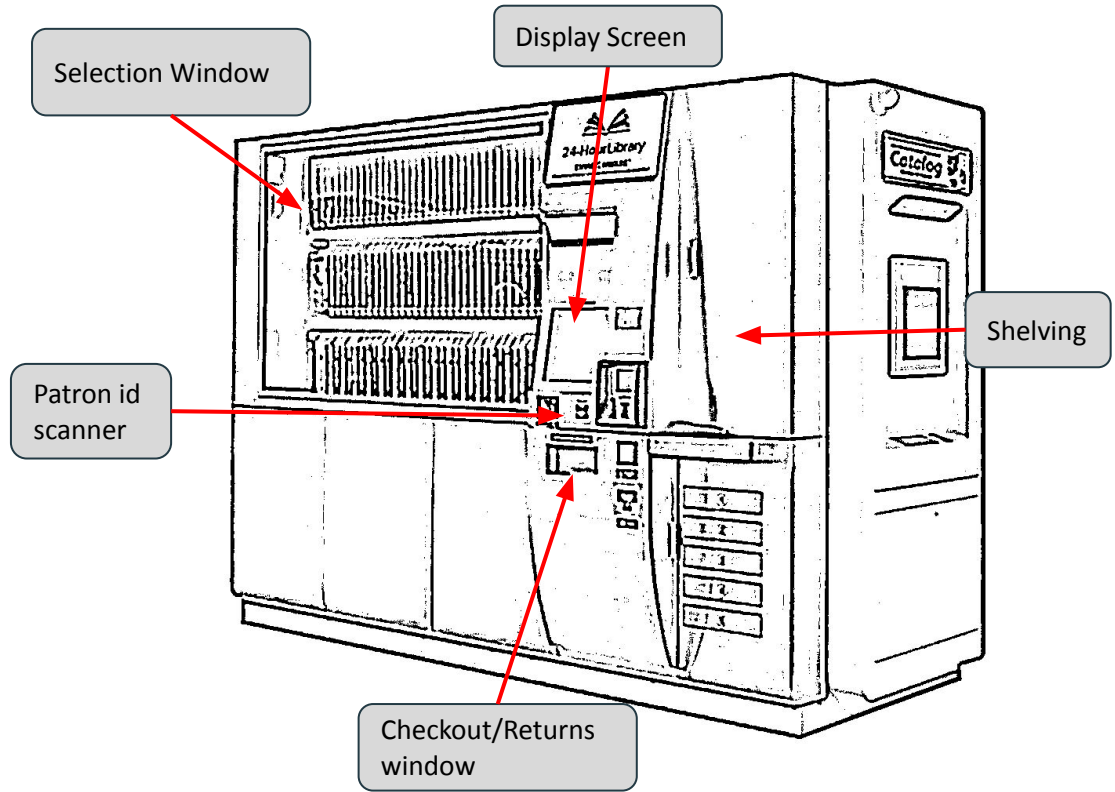
Business Value:

Tangible:

- The library kiosk system can also be implemented in public as well as private libraries allowing us to cater to a larger market. (Estimated total number of libraries in the US is 116,867)
- Partnering with retail outlets e.g., malls, coffee shops will be a revenue generation stream. Projected increase in revenue through yearly subscription service.
- This product will allow us to connect with libraries around the country and sell our existing library services products including library management software and self-service checkout.

Business Requirements:

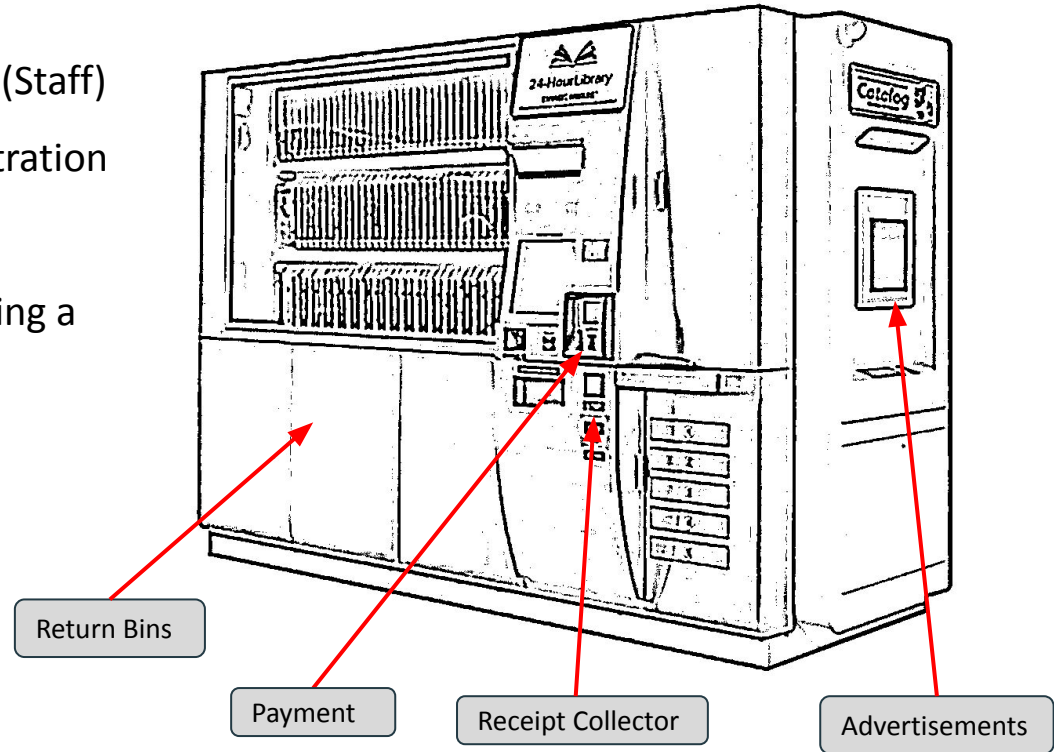
1. Login In (Patrons and Staff)
2. Checkout new items or On Hold Items (Patrons)
3. Item Returns (Patrons)
4. Shelving items and Withdraw items (Staff)



Smart Library Kiosk

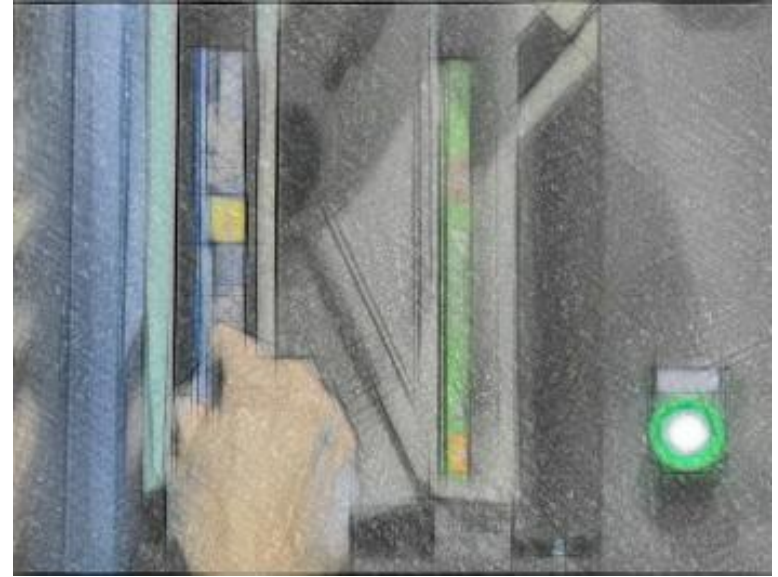
Business Requirements contd...:

5. Empty return bins and Remove cash (Staff)
6. Program Promotion and Event Registration (Patron)
7. Fine Payment/ purchase of books using a credit card, debit or cash.
8. Expired Holds Management (Staff)
9. Automated Alerts



Smart Library Kiosk

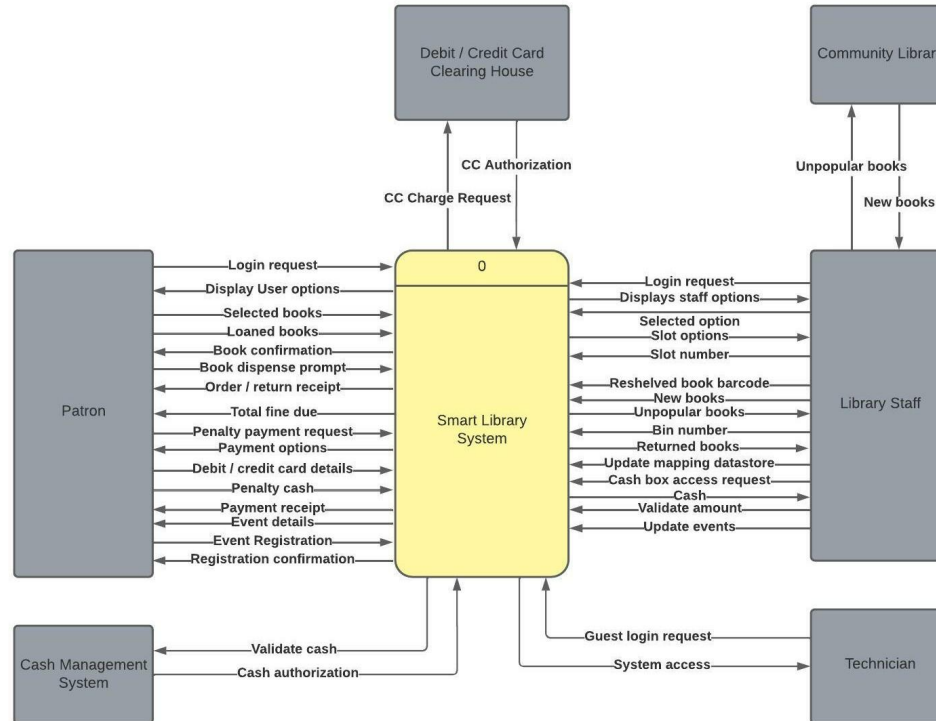
Internal Shelving and Return Bin Structure



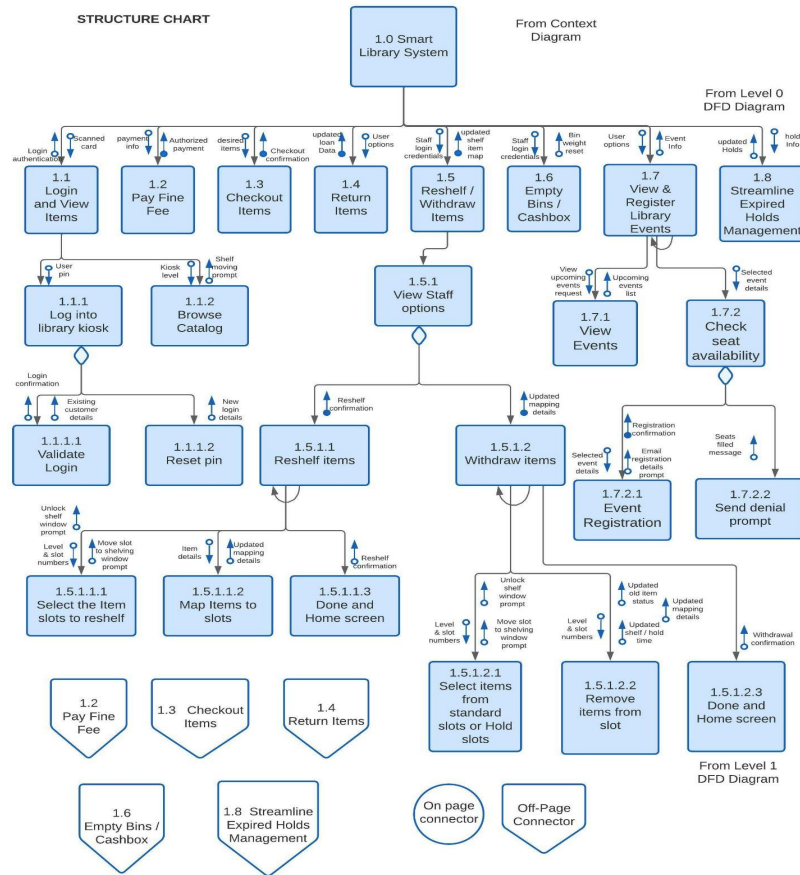
Special Issues and Constraints:

- Cash management System is designed to receive exact amount of cash for fine payment.
- There can be mechanical malfunctions in the machine which may require quick repair or replacement of a part
- 24/7 library kiosks can be a target for theft and vandalism. This can be mitigated by choosing the right location and having security cameras on the machine.

Context Diagram

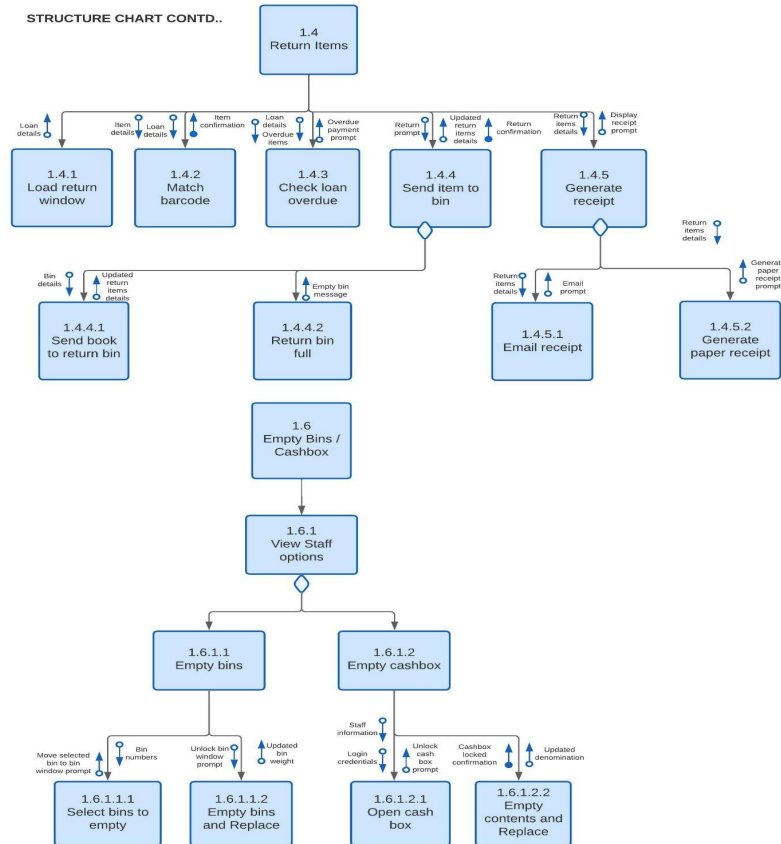


Structure Chart



- Every user starts with Logging in (I/P- Scanned card,O/P- Login authentication)
- Patrons accounts are checked for overdue payments(I/P- Payment Info,O/P -Authorized Payment)
 - Yes- Payment
 - No- Home
- Check out items (I/P-slot numbers, O/P- Checkout Info)
- Return Items(I/P-Item barcode,O/P-Return confirmation)

STRUCTURE CHART CONTD..



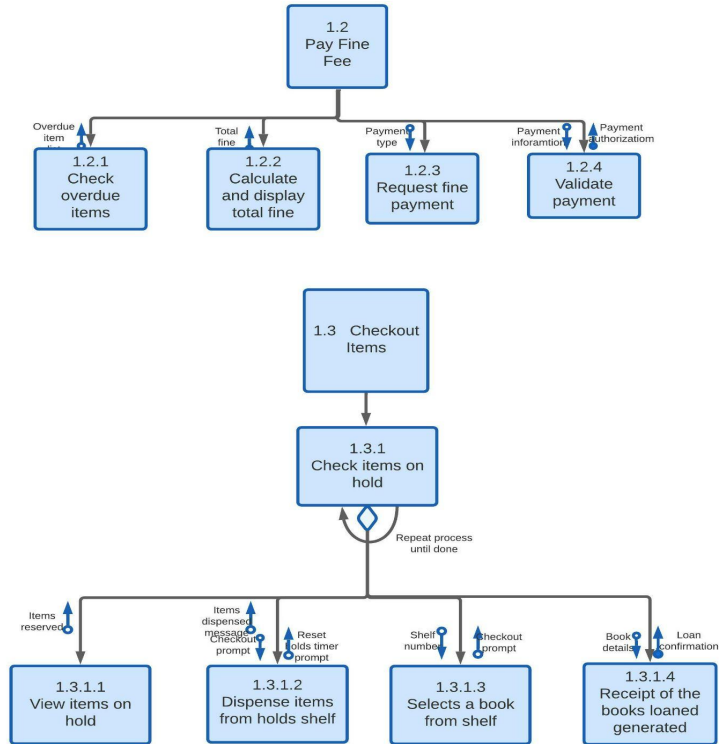
5. Reshelf/withdraw items(I/P- Staff options,O/P- updated Shelf Item Map Data)

6. Empty return bins/cash(I/P-Staff Options,O/P- Bin weight reset)

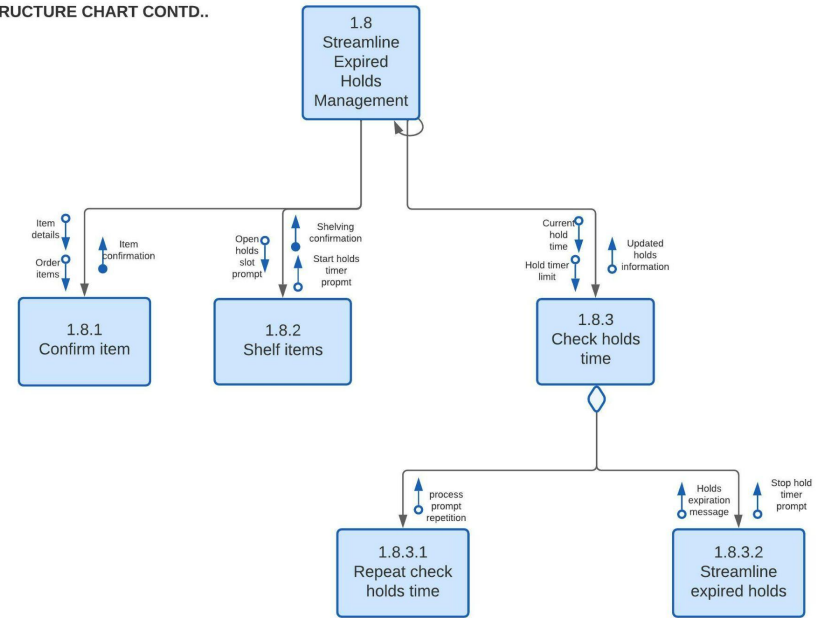
7. View/Register Library events(I/P-Choice of Patron options,O/P- Event Info,registration confirmation)

8. Streamline Expired Holds(I/P-Hold Info,O/P- Updated Holds Data)

STRUCTURE CHART CONTD..



STRUCTURE CHART CONTD..



User Interface Demo

Future Scope

- 1. eBook and Audiobook Integration** – patrons can check out electronic materials, expanding the available collection to over 1,000,000 items.
- 2. ADA Accessibility** – a separate wheelchair-height display makes operation easy and safe. Voice prompts further enhance the accessibility of the system.
- 3. Targeted Advertisements** – a ML model that would make target advertisements for customers based on their interest genre in books.