Software Requirements Specification

Requirements

Stacks is a web-based software application designed to help users discover, browse, and access non-book resources (“Library of Things”) available at nearby public libraries in Southern California. The system aggregates publicly available information about tools, equipment, technology, and other lendable items and presents them through a modern, visual discovery interface. Stacks does not perform checkout operations; instead, it redirects users to the official library systems to complete reservations.

The system consists of four primary components:

1. a user-facing web interface,
2. a discovery and search layer,
3. a structured data store containing normalized “Thing” records, and
4. external library catalog links.

High-level component diagram:

- User → Web Interface
- Web Interface → Discovery/Search Component
- Discovery/Search Component → Internal Data Store
- Web Interface → External Library Catalog Systems (via links)

Functional Requirements

User Access and Navigation

The system provides users with access to the Stacks platform through a web-based interface and allows navigation across core features.

The system shall allow users to access the application through a standard web browser.
The system shall display a home page that introduces the purpose of the application.
The system shall provide navigation controls to access browsing, search, saved items, and stacks.

Browsing Library Items (“Things”)

The system allows users to visually browse available non-book items from libraries.

The system shall display a list of available Things as visual cards.
Each Thing card shall display the item name, category, associated library, and availability status.
The system shall allow users to filter Things by category.
The system shall allow users to browse Things based on geographic proximity to the user.

Searching for Things

The system supports keyword-based search across all stored Things.

The system shall allow users to search for Things using a text query.
The system shall return search results that match the query across item names and descriptions.
The system shall display search results using the same visual format as browsing results.

Thing Detail View

The system provides detailed information for individual Things.

The system shall display a detail page for each Thing.
The Thing detail page shall display a description, category, library location, and borrowing rules.
The system shall display current availability information for the Thing when available.

External Reservation Linking

The system redirects users to official library systems to complete reservations.

The system shall provide a link from each Thing detail page to the corresponding library catalog page.
The system shall not perform checkout or reservation transactions internally.

User Accounts and Saved Content

The system allows users to save and organize items for future reference.

The system shall allow users to create a user profile.
The system shall allow users to save Things to a personal list.
The system shall allow users to view and remove saved Things.

Stacks (Curated Collections)

The system supports user-created collections of Things called “Stacks.”

The system shall allow users to create a Stack consisting of multiple Things.
The system shall allow users to name a Stack and provide a description.
The system shall display all Things associated with a Stack.
The system shall allow users to view previously created Stacks.

Performance Requirements

Performance requirements define how well the system operates under expected usage conditions.

Page Load Time

The system shall load any primary application page within 5 seconds under normal network conditions.

Search Response Time

The system shall return the first set of search results within 5 seconds of a user submitting a search query.

Concurrent Usage

The system shall support multiple concurrent users without data corruption or application failure.

Environment Requirements

Development Environment Requirements

- A modern code editor or integrated development environment
- Access to a version control system
- Internet access for testing external library links

Execution Environment Requirements

Hardware Requirements:

- Any device capable of running a modern web browser

Software Requirements:

- A web browser (Chrome or Safari)
- Internet connectivity

The system does not require specialized hardware or proprietary software for execution.