

Library Information System Assignment

Water

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Requirements Review

Please complete the following tables indicating which of the mandatory requirements you have completed. In cases where there is an issue or you interpreted the requirement in a specific way, please use the comment field to clarify the issue / your interpretation. In the status column indicate whether each requirement was: COMPLETED (you did it), NOT STARTED (you didn't do it), PARTIAL (you did part of it).

Member Requirements Progress

Req. #	Title	Comment	Status
M0	Member Login	Members can login using the top right dropdown menus of the header.	COMPLETED
M1	View List of Loans	Members can use the dashboard (see header for button) to see their current list of loans.	COMPLETED
M2	Renew Loans	Members can renew their loans from the dashboard.	COMPLETED
M3	Reserve Available Artifacts	Members can reserve artifacts from the search, view artifact, and historical loans page. The system will check if the artifact is available before reserving. A status message will tell the user if the artifact is reserved successfully.	COMPLETED
M4	Reserve On Loan Artifacts	If members could not reserve a desired artifact successfully in M3, they are added to a reservation queue for said artifact.	COMPLETED
M5	View Loan History	Members can view their loan history from their dashboard, or in the historical loans page (accessible from header dropdown menu or dashboard).	COMPLETED
M6	Search for Artifacts	Members can search for artifacts using the search bar in the header, they will see search recommendations as they type. Members can view search results in a search page and navigate to view individual artifacts from there.	COMPLETED
M7	Update Profile	Members can view and update their profile from the header dropdown menu.	COMPLETED

Librarian Requirements Progress

Req. #	Title	Comment	Status
L0	Librarian Login	<p>Librarians can login the same way as members, using the header drop down menu. The difference is dropdown of librarians have an extra link to “Admin Site”.</p> <p>Librarians and members are differentiated as account types “librarian” and “member”.</p>	COMPLETED
L1	Add / Remove Artifacts	<p>Librarians can add or remove artifacts using the admin/artifact/view page, accessible from the header.</p> <p>To remove, click the trash can on the admin/artifact/view page.</p> <p>To add, we implemented admin/artifact/create, which gets artifact information using Google’s Book API.</p>	COMPLETED
L2	Search for Members	Librarians can search for and view all members using the members page, accessible from the header.	COMPLETED
L3	View Members Current Loans	Librarians can view member current loans from the “View Loans” button on the admin/members/view page. This points to a search query that shows all loans a specific member has, sorted by status, then by issued date. Their current loans are the first four results, as members can only have four active loans at a time.	COMPLETED
L4	View Members Past Loans	Librarians can view member current loans from the “View Loans” button on the admin/members/view page. This points to a search query that shows all loans a specific member has, sorted by status, then by issued date. Their past loans are after the current loans.	COMPLETED
L5	Renew Loans	Librarians can renew existing loans from the admin/loans/view page, or update existing loans using the admin/loans/edit page.	COMPLETED
L6	Reserve Artifacts	Librarians can reserve artifacts using the admin/reserves/view page, or create new reservations using the admin/reserves/create page.	COMPLETED
L7	Record Loaned Artifacts	Librarians can record loaned artifacts using the admin/loans/create page, which on type searches the database for existing artifacts and members, then auto fills the necessary information to record a loan.	COMPLETED
L8	Record Returned Artifacts	Librarians can record returned artifacts using the admin/loans/view page.	COMPLETED
L9	Search for Artifacts	Librarians can search for and view all artifacts using the admin/artifacts/view page and can filter results by artifact type.	COMPLETED
L10	Edit Member Profiles	<p>Librarians can edit members profiles from the admin/member/view page.</p> <p>Librarians edit individual member profiles by navigating to admin/member/edit?id= page, where id stands for member id.</p>	COMPLETED

General Requirements Progress

Req. #	Title	Comment	Status
G0	Search for Artifacts	All users (members, public and admin) may search for artifacts using the search bar on the header and the search page. All users can view search results and individual artifact pages.	COMPLETED
G1	Join Library	Users may join the library by registering for an account using the header dropdown menu. To join, users need to input full names, email addresses, and password. Passwords are hashed in the database.	COMPLETED

Additional Requirements

Describe any additional requirements you have completed above and beyond the spec of the project. Use as much space as you require to do this.

Fake accounts for testing purposes

- Librarian account with sample data: "hong.sng@ucdconnect.ie", "root"
- Librarian account: "a@a.com", "1234"
- Member account: "u@u.com", "1234"

The **homepage** shows latest and popular artifacts to entice non-members to browse them and join the library.

The **librarian's dashboard** reports statistics on total fines and the number of artifacts, total, loaned, returned, and lost, over a period of day, month, and year.

Instant search (recommendations shown on type) and autofill relevant information is available for

- Members/non-members searching for artifacts
- Librarians recording existing artifacts as loaned/lost/reserved. The system will search for and recommend existing artifacts and members on type, and autofill into relevant form fields when selected.
- Librarians adding new artifacts. The system will search for and recommend artifacts using Google's Book API and autofill into relevant form fields when selected.

Artifact images are queried from Google's Book API and show up when

- Member browses or views individual artifacts, search results, featured artifacts on homepage, and their current and historical loans.
- Librarian views, or edits individual artifacts, loans, losts, and reservations.

The queried images' URL is stored in the database. If the system is not connected to the internet or if no image exists in the API, users will see a placeholder artifact image.

Custom Notifications to notify is action is carried out successfully

- A modal toast shows up for 10seconds when a member attempts to reserve/renew/remove an artifact.
- A status message shows up when a librarian attempts to create/edit/delete artifacts/reservations/losts/loans/members.

Member's last active status – the system keeps track of a member's last active time for librarians and said member.

Librarians have higher authority for certain tasks

Librarians can renew artifacts whenever; members can only renew artifacts 24hrs before the deadline.

Librarians can access both librarian site (admin dashboard and tasks like renewing and adding artifacts) and member site (member dashboard and browsing the system as a member). This is accessed from the header dropdown menu.

Summarise these requirements using the requirements table below.

Req. #	Title	Comment	Status
A0	Homepage	Shows latest and popular artifacts to entice users into joining the library.	COMPLETED
A1	Librarian dashboard	Shows the total number of artifacts, lost, loaned, reserved, returned over a period of day, week, month.	COMPLETED
A2	Instant Search	Recommends existing artifacts in the system as users search the system. Recommends existing artifacts and members as librarians create and update artifacts, loans, losts, reservations. Recommends non-existing artifacts using Google's Book API as librarians add artifacts to the system.	COMPLETED
A3	Artifact Images	Queries and shows artifact images from Google's Book API as users browse and searches the system and as librarians create/edit artifacts, loans, losts, reservations.	COMPLETED
A4	Custom Notifications	Notifies users and librarians if their action is carried out successfully.	COMPLETED
A5	Member's last active status	Records when the user was last active, visible to user and librarians.	COMPLETED
A6	Librarians' authority	Librarians can renew reservations and loans whenever they want; users can only do so 24hrs before the deadline. Librarians can access both librarian and member sites.	COMPLETED

Reflections

Please summarise your experiences on the project: what did you learn; what challenges did you have to overcome; what would you have done differently if you could have started over.

DO NOT WRITE MORE THAN ONE PAGE

Braddy

I learned how to use custom JPA queries, using RedirectAttributes to add data to the model when redirecting URLs, using conditionals and objects in Thymeleaf, using Bcrypt to hash passwords, mapping entities together and entity id types.

The challenges I overcame were passing data between the models, writing custom JPA queries, passing data from artifact card HTML to modal, passing data from modal to the controller.

If I started over, I would research more into what Spring features are provided that may improve the speed and process of development.

Emily

Responsibilities & What I learned	Challenges	Things that can be done differently
Initial drafting and final cleaning up of wireframes, features, user stories, and reports.	Having to balance time between ongoing assignments, projects, and internships.	Blocking out specific times for specific stuff and stop when the time slot ends instead of overdoing it.
Frontend and the mapping of frontend to controller.	Not knowing efficient ways to map frontend to controllers, e.g. having unnecessary fields until Bryan points it out.	Reading more on Spring and its examples before starting.
Manual testing of features.	Docker bugging out a lot and having to rely on others to fix Docker issues.	Unsure if reinstalling Windows (or dual booting Linux) will help as I'm already using Windows Education.
Unification of UI.	Unifying styles across templates can get confusing and time consuming since code is being duplicated everywhere instead of being reused.	Look into React/REST APIs and their integration into Spring Boot for faster frontend development.

Bryan

What did you learn?

- How to design a Spring Boot application top to bottom: While other teammates were busy finishing up other assignments, I was left to my own devices, and had to design and plan the application from scratch. Initial design was definitely flawed, constant changes were made to the design during the development process. If I were to start again, this changed design would be my go-to.
- Using Google's Book API: When a librarian creates a new artifact, its queries Google's API for existing books. This makes it easy for librarians to add new artifact. Why start from scratch when there are already so many sources online.

What challenges did you have to overcome?

- Learning how to do Query Creations in the Repository classes.
- Implementing authentication last minute before deadline day (when the deadline was on the 8th of March). Had to research it from scratch because this was actually assigned to another person.
- How to make our setup run on docker-compose.

What would you have done differently if you could have started over?

- Don't even bother with CREATE TABLE schemas (via schema.sql), write the Java classes and map the entities at the outset.
- More frequent stand-ups (daily ones instead of weekly). I overestimated teammates' abilities to implement some features autonomously, doing daily stand-ups would allow me to track their progress more accurately (i.e. if they seem to be stuck on the same feature for quite some time).