COSC2634 Project Proposal

Mentor: Trần Minh Tuấn

Booktopia

Group: Section SG02_Team 07_Tuan

Member	
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1. Executive Summary

The Booktopia project aims to meet the increasing demands of users in the digital era for easy access to a wide range of books and educational materials. By creating a user-friendly website, our initiative aims to address the issues of restricted physical library access and the hassle of managing physical books. The anticipated outcome is an accessible, all-inclusive digital library that encourages inclusion and knowledge sharing while facilitating a culture of study and research by allowing users to search, buy, and read a broad variety of items online.

2. Problem Statement

Overcoming challenges in online libraries involves tackling issues like accessibility, user experience, and security. Problems include inadequate support for assistive technologies, confusing interfaces, and potential data security risks. Content curation and limited multi-language support also pose hurdles. Ensuring mobile responsiveness is crucial for reaching users on different devices. A holistic approach is needed, incorporating technological advancements and a commitment to accessibility and security standards, to create a more inclusive and user-friendly online library experience.

3. Goal and Objectives

3.1. Goals

The goal of this project is to create a Booktopia that is accessible to as many people as possible with different backgrounds, limitations, and disabilities. The website should cater to a wide range of audiences across different devices and demographics and should uphold good security standards.

3.2. Objectives

- Develop multi-language support for the website and provide an intuitive user-friendly interface to switch languages. The option to switch languages should be clearly visible and intuitive to find (one way to achieve this is to display the current language's flag, clicking on the flag should redirect users to a page with a list of languages)
- Develop screen readers compatibility via providing alt text for different website assets such as images, video and audio. This feature could be further enhanced to include a screen reader directly in the website rather than relying on a browser-based screen reader
- All features and functionality of a website should be accessible via keyboard alone. A user should be able to navigate around the website using a keyboard and without the mouse.
- The website should have high color contrast between text and background to assist those with visual impairments.
- For multimedia and audio assets, there should be captions and transcripts.
- Readers should be able to enlarge font sizes without losing content or functionality. Particular emphasis should be placed on online ebooks which often are hard to read.
- Ensure that the website is accessible across different browsers and devices (in particular assistive devices for the disabled)

4. Deliverables and Target Customer

4.1. Deliverables

1. User Authentication System: Create accounts and tailor library experiences using a secure login and registration system.
2. Search and Discovery Functionality: Create a powerful search engine that lets users locate books by title, author, category, keyword, and filter and sort.
3. Inventory Management System: Make adding, updating, and removing books simple using a library inventory system.
4. E-book Integration: Allow library patrons to borrow and read digital e-books seamlessly.
5. Disability Accessibility: Include screen reader compatibility and picture alt text on the website.
6. Multi-language Support: Make the website accessible to multilingual users.
7. Book Reviews and Ratings: Increase community participation by allowing user reviews and ratings.
8. Mobile Responsiveness: Make the website work on PCs, tablets, and phones.

4.2. Target Customers
1. Bookies: People who love to read and discover new books.
2. Students seeking academic resources, textbooks, and research materials.
3. Authors: Writers seeking readership and promotion.
4. Book clubs: Readers who want to find, debate, and share their favorite books.
5. Educational institutions: Schools and colleges seeking a student and faculty digital library.
6. Diverse Language Speakers: Readers who prefer non-default language content.
7. Disabled Users: Those who need accessible features for online library use.
8. E-book fans: Users who prefer digital books for mobile reading.
9. Community people interested in library programs, book signings, and literature.
10. Researchers: People seeking educational and research materials.

5. Technical Plan

5.1. Methodology/Approach

The development of the online library web system will follow an iterative Agile methodology, incorporating Node.js, EJS, MongoDB, Bootstrap, HTML, and CSS. Communication will occur through Discord and Teams, with Messenger and Discord for meeting planning. GitHub will handle collaboration and versioning, Jira for project management, and Excel Online for team administration, ensuring a streamlined and efficient development process.

5.2. Application Features

Customer Features: Account managing, Progression Tracking, Membership Management, Search Bar, Review and comment, Wishlist Management, Dark/Light Mode, Category Management, Reading History, Responsive Design, Bookmarking, Adjustable Font size front, Highlighting.
Admin Features: Modify Book Info, View Customer Accounts, Manage Book Categories, User Management, Content Moderation, Analytics Dashboard, Customization, Notification Management, Data Export, Role-Based Access, Control Integration with External Systems.

5.3. Tool and Resources

Tool Management Plan:

Purpose	Communication	Code Management	Project Management	Database	Storage
Tool	Discord, Messenger, Team.	Github.	Jira, Excel Online.	MongoDB	Google Drive, Discord.

Resource Management Plan:
- Leverage coding forums for troubleshooting.
- Utilize student samples for project insights.
- Incorporate tutorials, lecture slides, and online AI resources.
- Document and attribute external resources.

5.4. Challenges:

- Recommendation Algorithm:
  - Creating a robust algorithm for personalized choices requires in-depth user behavior understanding. The team will refine it through research and testing, leveraging user feedback.
- Accessibility:
  - Ensuring high accessibility for users with disabilities is complex. Engaging users for testing and feedback, along with regular accessibility audits, will be integral to development.

5.5. Evaluation

The Booktopia aims to revolutionize user experience and create a diverse knowledge community. Success is measured by user satisfaction, usability, and engagement. Iterative improvements prioritize high satisfaction, while strategic collaborations and creative approaches transform online learning into a dynamic information hub. Marketing and partnerships drive adoption and success.

5.6. Project Timeline:

Week	Task
Week 3	Confirm scope, finalize MongoDB, and set up initial user authentication.
Weeks 4	Implement recommendation algorithm, user data system, and enhance authentication. Begin accessibility features.
Weeks 5-7	Implement UI components, improve the search bar, integrate accessibility features, and continue the responsive design.
Weeks 8-9	Test recommendation algorithm and accessibility features, address bugs, and optimize performance.
Week 10	Update documentation with new features, and create guides for recommendation algorithm and accessibility.
Week 11-12	Thorough system review, address last-minute issues, rehearse for Jan 12 presentation.

6. Management Plan

6.1. Project Schedule

ACTIVITY	TASK	ASSIGNED TO	START DATE	DURATION
Project planning	Personal introduction and role distribution	Everyone	Nov 6	3 days
Project planning	Sprint planning	Everyone	Nov 8	6 days
Proposal report	Executive summary and conclusion	Kim Minsung	Nov 13	3 days
Proposal report	Problem statement	Van Duc Tri	Nov 13	3 days
Proposal report	Goal and objectives	Nguyen Tien Dung	Nov 13	3 days
Proposal report	Deliverables and Target customer	Van Duc Tri	Nov 13	3 days
Proposal report	Technical plan	Nguyen Pham Tien Hai	Nov 13	3 days
Proposal report	Management plan	Cho Jimin	Nov 13	3 days
Proposal report	Limitations	Cho Jaesuk	Nov 13	3 days
Proposal report	Significance	Le Dang Quang	Nov 13	3 days
Proposal report	Feedback-driven enhancement	Everyone	Nov 15	4 days
Proposal report	Final review and modification	Everyone	Nov 19	2 days
Proposal report	Report submission	Cho Jimin	Nov 20	1 day
System design	UI scatch design	Everyone	Nov 20	2 days
System design	Scatch design for each web section	Cho Jimin, Cho Jaesuk, Kim Minsung, Nguyen Pham Tien Ha	Nov 21	3 days
System design	Design review and Finalization	Everyone	Nov 23	3 days
System architecture planning	System architecture design	Everyone	Nov 23	1 day
System architecture planning	Database structure planning	Van Duc Tri, Le Dang Quang, Nguyen Pham Tien Hai	Nov 23	3 days
System architecture planning	Backend structure review and Finalization	Everyone	Nov 26	1 day
Frontend development	Build frontend foundation	Cho Jimin, Cho Jaesuk, Kim Minsung	Nov 27	1 day
Frontend development	User interaction development	Cho Jimin, Cho Jaesuk, Kim Minsung	Nov 28	6 days
Frontend development	Log in feature implementation	Cho Jimin	Nov 28	6 days
Frontend development	Registration feature implementation	Cho Jaesuk	Nov 28	6 days
Frontend development	Search feature implementation	Kim Minsung	Nov 28	6 days
Backend development	User data management	Van Duc Tri, Le Dang Quang, Nguyen Pham Tien Hai	Nov 27	2 days
Backend development	Book data management	Van Duc Tri, Le Dang Quang, Nguyen Pham Tien Hai	Nov 28	2 days
Backend development	Shopping cart data management	Le Dang Quang	Nov 29	5 days
Backend development	Order processing data management	Nguyen Pham Tien Hai	Nov 29	5 days
Backend development	Integration of search engine	Van Duc Tri	Nov 29	5 days
Frontend development	UI / UX feedback incorporation	Cho Jimin, Cho Jaesuk, Kim Minsung	Dec 4	1 day
Frontend development	Midterm review	Cho Jimin, Cho Jaesuk, Kim Minsung	Dec 5	2 days
Frontend development	Feedback-driven enhancement	Cho Jimin, Cho Jaesuk, Kim Minsung	Dec 6	5 days
Backend development	Database feedback incorporation	Van Duc Tri, Le Dang Quang, Nguyen Pham Tien Hai	Dec 4	1 day
Backend development	Midterm review	Van Duc Tri, Le Dang Quang, Nguyen Pham Tien Hai	Dec 5	2 days
Backend development	Feedback-driven enhancement	Van Duc Tri, Le Dang Quang, Nguyen Pham Tien Hai	Dec 6	5 days
Frontend development	Frontend unit Testing	Nguyen Pham Tien Hai	Dec 11	1 day
Frontend development	Frontend Integration	Cho Jimin, Cho Jaesuk, Kim Minsung	Dec 11	6 days
Backend development	Backend unit testing	Nguyen Pham Tien Hai	Dec 12	2 days
Backend development	Backend Integration	Van Duc Tri, Le Dang Quang, Nguyen Pham Tien Hai	Dec 13	5 days
Frontend development	Final frontend review & refinement	Everyone	Dec 18	1 day
Frontend development	Final testing & debugging of integrated fronter	Cho Jimin, Cho Jaesuk, Kim Minsung, Nguyen Pham Tien Ha	Dec 18	6 days
Backend development	Final backend review & refinement	Everyone	Dec 19	1 day
Backend development	Final testing & debugging of integrated backen	Van Duc Tri, Le Dang Quang, Nguyen Pham Tien Hai	Dec 19	5 days
Integration of system	System integration	Everyone	Dec 25	3 days
Integration of system	Integration testing and reporting	Nguyen Pham Tien Hai	Dec 27	3 days
Integration of system	Integrated system debugging	Everyone	Dec 29	11 days
Integration of system	Final testing & Quality Assurance	Everyone	Jan 7	4 days
Presentation preparation	Presentation preparation	Everyone	Jan 9	4 days
Final report	Writing report	Everyone	Jan 11	7 days
Final report	Report submission	Jimin Cho	Jan 17	1 day

6.2. Project Team

Name	Skill	Task
Cho Jaesuk	HTML, CSS, Javascript	Frontend developer
Cho Jimin	Project management, HTML, CSS	Project manager, Scrum master
Kim Minsung	HTML, CSS, Javascript, Java	Frontend developer
Le Dang Quang	Java, Javascript, EJS, MongoDB	Backend developer
Nguyen Pham Tien Hai	Java, Javascript, HTML, CSS, MongoDB, react JS	Tester, Backend developer
Nguyen Tien Dung	Project management	Product owner, Frontend developer
Van Duc Tri	HTML, CSS, Javascript, Java, MongoDB	Backend developer

7. Limitations

Considering the need to build a website in a short time and the various potential issues that could arise during the project, the biggest constraint of this project is time. Therefore, our group has assessed the importance of various features and will focus on developing them in order of priority. Furthermore, in terms of technical limitations, our group acknowledges the technical challenges involved in implementing features like recommending the top 10 books to users, which require techniques such as search log collection and analysis. Thus, while it might be difficult to develop this feature in the current project due to its technical complexity, it is planned for development in the future to enhance our website.

8. Significance

Current popular libraries include Onpenlibrary.org and search.worldcat.org. Their online library offerings are mostly minimal. Our organization benefits clients by building online library web apps. Our library's UI will be user-friendly as most libraries have a formal design. Our online libraries are easy to use and efficient for accessing different categories. The search bar lets users browse the library and retrieve information quickly. Maintaining online libraries will be cheaper than conventional libraries. Online libraries don't need staff, buildings, or other resources. Thus, these factors make our online libraries exceptional in development.

9. Conclusion

In conclusion, the "Booktopia" project handles many volumes easily and efficiently on a user-friendly platform. The tool streamlines adding, modifying, and organizing library books for administrators and readers. It provides administrators with a powerful tool for managing book content, ensuring rapid access and searchability. Bookmark and wishlist tools let users tailor their reading experience by marking and organizing books that interest them. The project's ultimate objective is to create a modern, user-centric digital library that fosters learning, collaboration, and information sharing.

10. Appendix

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	Week 9							Week 10							Week 11							Week 12						
December 25, 2023								January 1, 2024							January 8, 2024							January 15, 2024						
25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S