

Project Report

SOIS 490 - Senior Capstone

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I. Business Case

This project aims to develop a comprehensive physical to digital library conversion system to address the inefficiencies in managing physical records within libraries. The system will provide a user-friendly interface for both library customers and administrators/librarians, assisting in the transition from traditional, paper-based record keeping, to a more streamlined and accessible digital format.

XYZ is a public library that has been serving the community since 2023. The library’s main activities and services include book lending from an extensive collection of books, digital resources catering to its tech savvy patrons, community engagement through children's programs, book clubs, reading workshops and community spaces that provide educational support. Revenues primarily come from sources of funding, membership fees, and grants. Despite its rich collection of physical resources, the library currently faces challenges in terms of organizing and accessing information efficiently.

II. Scope of Work

Project Objective

The primary objective of the Library Digitization Project is to create a comprehensive physical to digital library conversion system that streamlines record keeping processes, enhances accessibility for library patrons, and provides efficient management tools for library administrators. The system aims to transition the library from manual paper based record keeping to a digital platform, improving overall efficiency. This project is to be completed by December 15, 2023 and not to exceed the cost of \$20,000.

System Requirements

The Library Digitization Project will require:

- Database and Tables
- Login/Logout Functionality
- User Interface for **Library Customers** that will allow them to:
 - View collection of books
 - View if a book is currently available or checked out
 - View what books they currently have checked out
 - Check out a book
- User Interface for **Librarian Administrators** that will allow them to:
 - add/delete users
 - add/edit/delete a book
 - Edit “checked out” status of a book
 - View a list of what books are currently checked out

Technical Requirements

Requirements to develop the system using PHP, HTML, CSS, JavaScript and MySQL include:

- Computers
- Internet access
- Server access with necessary hard drive space
- Software to include:
 - Visual Studio
 - cPanel
 - MySQL
 - phpMyAdmin
 - FileZilla
 - Google Docs
 - Microsoft Excel
 - Microsoft Teams

- Microsoft Project

System Testing

- Conduct thorough testing at various stages, including unit testing, integration testing, and user acceptance testing.
- Address any identified issues promptly to ensure the system meets performance and functionality requirements

Limits and Exclusions

- The project scope excludes the physical relocation or disposal of existing library materials.
- The system does not cover external integrations with third party library management systems.

Assumptions and Constraints

- It is assumed that library staff will receive adequate training to use the new digitalisation system effectively.
- The project is constrained by the available budget and resources allocated for development and implementation.
- Necessary technology will be accessible and in working order throughout the project (Server, Internet, company website).

Project Management-Related Deliverables

- Business Case and Scope Statement.
- Develop a detailed Work Breakdown Structure (WBS) outlining project tasks and subtasks.
- Create a Gantt Chart, PDM Diagram, and milestones to track project progress.
- Compile a WBS Dictionary to provide detailed descriptions of each task.
- Address financial aspects, including budget allocation and resource planning.
- Identify and manage potential risks associated with the project.

Product-Related Deliverables

- Develop a system prototype for testing and feedback.
 - Database and Tables
 - Login/Logout Functionality
 - User Interface for Library Customers
 - User Interface for Library Administrators
- Create comprehensive system documentation for both end users and technical staff.
 - Users: Brief documentation of instructions and everything possible users of the system would need to know.

- Technical: Basic maintenance guidelines including a list of technical requirements for the system (code), description of table relationships(ERD & table schemas), and website structure map.

III. Work Breakdown Structure (WBS)

Outline number	Name	Assigned to:	Duration	Risk	Start	Finish	Effort
1	Initiating	Everyone	7.5 days	Low	8/23/2023	9/1/2023	72 hours
1.1	Develop Project Charter	Everyone	3.5 days	Low	8/23/2023	8/28/2023	32 hours
1.1.1	Identify Goals and Objectives	Everyone	1 day	Low	8/23/2023	8/23/2023	8 hours
1.1.2	Develop Strategies and Plans	Everyone	1 day	Low	8/24/2023	8/24/2023	8 hours
1.1.3	Research Previous Experience	Everyone	1 day	Low	8/25/2023	8/25/2023	8 hours
1.1.4	Develop Project Charter	Everyone	0.5 days	Low	8/28/2023	8/28/2023	8 hours
1.2	Develop Preliminary Project Scope Statement	Everyone	4 days	Low	8/28/2023	9/1/2023	40 hours
1.2.1	Conduct Planning Workshop	Everyone	1 day	Low	8/28/2023	8/29/2023	8 hours
1.2.2	Document Project Costs and Benefits	Michael Binelli	0.5 days	Medium	8/29/2023	8/29/2023	8 hours
1.2.3	Develop High Level Work Breakdown Structure	Michael Binelli	1 day	Low	8/30/2023	8/30/2023	8 hours
1.2.4	Conduct Peer Review	Everyone	1 day	Low	8/31/2023	8/31/2023	8 hours
1.2.5	Prepare Preliminary Project Scope Statement	Michael Binelli	0.5 days	Low	9/1/2023	9/1/2023	8 hours
2	Planning	Everyone	27 days	Low	9/1/2023	10/10/2023	248 hours

2.1	Set Up Project Environment	Everyone	4 days	Low	9/1/2023	9/7/2023	3	32 hours
2.1.1	Prepare Facilities	Everyone	1 day	Medium	9/1/2023	9/4/2023		8 hours
2.1.2	Set Up Project Standards and Procedures	Everyone	1 day	Low	9/4/2023	9/5/2023		8 hours
2.1.3	Set Up Project Management Tools	Everyone	1 day	Low	9/5/2023	9/6/2023		8 hours
2.1.4	Set Up Project Book	Everyone	1 day	Low	9/6/2023	9/7/2023		8 hours
2.2	Define Scope	Michael Binelli	4 days	Low	9/7/2023	9/13/2023	23	32 hours
2.2.1	Document Scope Management Plan	Michael Binelli	1 day	Low	9/7/2023	9/8/2023		8 hours
2.2.2	Specify Deliverables and Acceptance Criteria	Michael Binelli	1 day	Low	9/8/2023	9/11/2023	3	8 hours
2.2.3	Define Scope	Michael Binelli	1 day	Low	9/11/2023	9/12/2023	3	8 hours
2.2.4	Document Assumptions	Michael Binelli	1 day	Low	9/12/2023	9/13/2023	3	8 hours
2.3	Develop Project Schedule		5 days	Low	9/13/2023	9/20/2023	23	40 hours
2.3.1	Build Work Breakdown Structure	Michael Binelli	1 day	Low	9/13/2023	9/14/2023	3	8 hours
2.3.2	Develop Resource Plans	Michael Binelli	1 day	Low	9/14/2023	9/15/2023	3	8 hours
2.3.3	Prepare Project Estimates	Michael Binelli	1 day	Low	9/15/2023	9/18/2023	3	8 hours
2.3.4	Define Dependencies and Develop Project Schedule	Everyone	1 day	Low	9/18/2023	9/19/2023	3	8 hours
2.3.5	Document Assumptions	Michael Binelli	1 day	Low	9/19/2023	9/20/2023	3	8 hours
2.4	Develop Risk Plans	Michael Binelli	3 days	Low	9/20/2023	9/25/2023	23	32 hours
2.4.1	Document Risk Management Plan	Michael Binelli	0.5 days	Low	9/20/2023	9/20/2023	3	8 hours

2.4.2	Identify Risks	Michael Binelli	1 day	Medium	9/21/202 3	9/21/202 3	8 hours
2.4.3	Analyze Risks	Everyone	1 day	Low	9/22/202 3	9/22/202 3	8 hours
2.4.4	Document Risk Management Plans	Michael Binelli	0.5 days	Low	9/25/202 3	9/25/202 3	8 hours
2.5	Plan for Quality	Everyone	0.5 days	Low	9/25/202 3	9/25/20 23	8 hours
2.5.1	Document Quality Management Plan	Michael Binelli	0.5 days	Low	9/25/202 3	9/25/202 3	8 hours
2.6	Organize Project Resources	Michael Binelli	2 days	Low	9/26/202 3	9/27/20 23	16 hours
2.6.1	Develop Organization Structure	Michael Binelli	1 day	Low	9/26/202 3	9/26/202 3	8 hours
2.6.2	Develop Staffing Plan	Michael Binelli	1 day	Medium	9/27/202 3	9/27/202 3	8 hours
2.7	Develop Procurement Plans	Everyone	4.5 days	Low	9/28/202 3	10/4/20 23	40 hours
2.7.1	Determine Procurement Requirements	Everyone	1 day	Low	9/28/202 3	9/28/202 3	8 hours
2.7.2	Define Subcontractor Scope	Damyan Michel	1 day	Low	9/29/202 3	9/29/202 3	8 hours
2.7.3	Identify Potential Subcontractors	Everyone	1 day	Medium	10/2/202 3	10/2/202 3	8 hours
2.7.4	Identify Subcontract Type	Damyan Michel	1 day	Medium	10/3/202 3	10/3/202 3	8 hours
2.7.5	Document Subcontractor Management Plan	Michael Binelli	0.5 days	Low	10/4/202 3	10/4/202 3	8 hours
2.8	Develop Financial Plan	Michael Binelli	2 days	Medium	10/4/202 3	10/6/20 23	16 hours
2.8.1	Prepare Financial Plan	Michael Binelli	1 day	Medium	10/4/202 3	10/5/202 3	8 hours
2.8.2	Document Assumptions	Michael Binelli	1 day	Low	10/5/202 3	10/6/202 3	8 hours

2.9	Develop Project Support Plans	Everyone	1.5 days	Medium	10/6/2023	10/9/2023	24 hours
2.9.1	Document Communications Management Plan	Everyone	0.5 days	Low	10/6/2023	10/6/2023	8 hours
2.9.2	Document Configuration Management Plan	Seth Kaderabek	0.5 days	Medium	10/9/2023	10/9/2023	8 hours
2.9.3	Document Data Management Plan	Damyan Michel	0.5 days	Medium	10/9/2023	10/9/2023	8 hours
2.1	Develop Project Management Plan	Michael Binelli	0.5 days	Low	10/10/2023	10/10/2023	8 hours
2.10.1	Document Project Management Plan	Michael Binelli	0.5 days	Low	10/10/2023	10/10/2023	8 hours
3	Executing	Everyone	18 days	Medium	10/10/2023	11/3/2023	144 hours
3.1	Acquire Project Team	Everyone	3 days	Low	10/10/2023	10/13/2023	24 hours
3.1.1	Obtain Resources	Everyone	1 day	Low	10/10/2023	10/11/2023	8 hours
3.1.2	Conduct Team Orientation	Everyone	1 day	Low	10/11/2023	10/12/2023	8 hours
3.1.3	Assign Responsibilities	Michael Binelli	1 day	Low	10/12/2023	10/13/2023	8 hours
3.2	Direct and Manage Project Execution	Everyone	5 days	High	10/13/2023	10/20/2023	40 hours
3.2.1	Manage Data Items	Damyan Michel	1 day	High	10/13/2023	10/16/2023	8 hours
3.2.2	Manage Configuration Items	Seth Kaderabek	1 day	High	10/16/2023	10/17/2023	8 hours
3.2.3	Manage Process Data	Seth Kaderabek	1 day	High	10/17/2023	10/18/2023	8 hours
3.2.4	Provide General Office Support	Everyone	1 day	Low	10/18/2023	10/19/2023	8 hours

3.2.5	Administer Project Security Processes	Michael Binelli	1 day	High	10/19/2023	10/20/2023	8 hours
3.3	Manage Team Performance	Everyone	2 days	Low	10/20/2023	10/24/2023	16 hours
3.3.1	Provide Team Training	Everyone	1 day	Low	10/20/2023	10/23/2023	8 hours
3.3.2	Recognize Success	Everyone	1 day	Low	10/23/2023	10/24/2023	8 hours
3.4	Assure Quality	Everyone	4 days	Low	10/24/2023	10/30/2023	32 hours
3.4.1	Participate in Walk-throughs and Reviews	Everyone	1 day	Low	10/24/2023	10/25/2023	8 hours
3.4.2	Conduct Inspections and Audits	Everyone	1 day	Medium	10/25/2023	10/26/2023	8 hours
3.4.3	Conduct Project Reviews	Everyone	1 day	Low	10/26/2023	10/27/2023	8 hours
3.4.4	Facilitate Continuous Improvement	Everyone	1 day	Low	10/27/2023	10/30/2023	8 hours
3.5	Manage Project Communication	Everyone	1 day	Low	10/30/2023	10/31/2023	8 hours
3.5.1	Review Progress	Michael Binelli	1 day	Low	10/30/2023	10/31/2023	8 hours
3.6	Contracting with Subcontractors	Everyone	3 days	Medium	10/31/2023	11/3/2023	24 hours
3.6.1	Issue Requisition Documents	Seth Kaderabek	1 day	Medium	10/31/2023	11/1/2023	8 hours
3.6.2	Evaluate Responses	Damyan Michel	1 day	Low	11/1/2023	11/2/2023	8 hours
3.6.3	Negotiate Subcontractor Contract	Michael Binelli	1 day	Low	11/2/2023	11/3/2023	8 hours
4	Monitoring and Controlling	Everyone	25.5 days	Low	11/3/2023	12/8/2023	216 hours
4.1	Monitor and Control Project Work	Everyone	3 days	Low	11/3/2023	11/8/2023	24 hours

4.1.1	Authorize Work	Everyone	1 day	Low	11/3/202 3	11/6/202 3	8 hours
4.1.2	Manage Action Items	Everyone	1 day	Low	11/6/202 3	11/7/202 3	8 hours
4.1.3	Manage Project Records	Michael Binelli	1 day	Medium	11/7/202 3	11/8/202 3	8 hours
4.2	Integrated Change Control	Everyone	4 days	Low	11/8/202 3	11/14/2 023	32 hours
4.2.1	Manage Scope	Michael Binelli	1 day	Low	11/8/202 3	11/9/202 3	8 hours
4.2.2	Manage Requirements	Everyone	1 day	Low	11/9/202 3	11/10/20 23	8 hours
4.2.3	Control Decisions	Everyone	1 day	Low	11/10/20 23	11/13/20 23	8 hours
4.2.4	Control Changes	Everyone	1 day	Low	11/13/20 23	11/14/20 23	8 hours
4.3	Scope Verification	Michael Binelli	0.5 days	Low	11/14/20 23	11/14/2 023	8 hours
4.3.1	Manage Project Acceptance	Michael Binelli	0.5 days	Low	11/14/20 23	11/14/20 23	8 hours
4.4	Schedule Control	Everyone	3 days	Low	11/15/20 23	11/17/2 023	24 hours
4.4.1	Track Status	Everyone	1 day	Low	11/15/20 23	11/15/20 23	8 hours
4.4.2	Maintain Project Schedule	Everyone	1 day	Low	11/16/20 23	11/16/20 23	8 hours
4.4.3	Maintain Work Plans	Everyone	1 day	Low	11/17/20 23	11/17/20 23	8 hours
4.5	Manage Finances	Michael Binelli	3 days	Medium	11/20/20 23	11/22/2 023	24 hours
4.5.1	Monitor Cost/Schedule Variance	Michael Binelli	1 day	Low	11/20/20 23	11/20/20 23	8 hours
4.5.2	Control Costs	Michael Binelli	1 day	Medium	11/21/20 23	11/21/20 23	8 hours

4.5.3	Maintain Financial Plan	Michael Binelli	1 day	Medium	11/22/2023	11/22/2023	8 hours
4.6	Perform Quality Control	Everyone	3 days	Low	11/23/2023	11/27/2023	24 hours
4.6.1	Control Quality	Damyan Michel	1 day	Medium	11/23/2023	11/23/2023	8 hours
4.6.2	Participate in Testing	Everyone	1 day	Low	11/24/2023	11/24/2023	8 hours
4.6.3	Measure Quality Levels	Damyan Michel	1 day	Low	11/27/2023	11/27/2023	8 hours
4.7	Manage Project Team	Everyone	4 days	Low	11/28/2023	12/1/2023	32 hours
4.7.1	Manage Communications	Everyone	1 day	Low	11/28/2023	11/28/2023	8 hours
4.7.2	Meet With Team	Everyone	1 day	Low	11/29/2023	11/29/2023	8 hours
4.7.3	Monitor Team Morale	Everyone	1 day	Low	11/30/2023	11/30/2023	8 hours
4.7.4	Conduct Team Performance Reviews	Everyone	1 day	Low	12/1/2023	12/1/2023	8 hours
4.8	Produce Performance Reports	Everyone	1 day	Low	12/4/2023	12/4/2023	16 hours
4.8.1	Report Weekly Status	Everyone	0.5 days	Low	12/4/2023	12/4/2023	8 hours
4.8.2	Report Monthly Status	Everyone	0.5 days	Low	12/4/2023	12/4/2023	8 hours
4.9	Manage Stakeholders	Michael Binelli	2 days	Low	12/5/2023	12/6/2023	16 hours
4.9.1	Monitor Satisfaction	Michael Binelli	1 day	Low	12/5/2023	12/5/2023	8 hours
4.9.2	Resolve Issues	Michael Binelli	1 day	Medium	12/6/2023	12/6/2023	8 hours
4.1	Risk Monitoring and Control	Michael Binelli	1 day	Low	12/7/2023	12/7/2023	8 hours

4.10.1	Manage Risks	Michael Binelli	1 day	Low	12/7/202	12/7/202	3	3	8 hours
4.11	Contract Administration	Everyone	1 day	Low	12/8/202	12/8/20	3	23	8 hours
4.11.1	Manage Subcontractor Contract	Everyone	1 day	Low	12/8/202	12/8/202	3	3	8 hours
5	Closing	Everyone	6 days	Low	12/11/20	12/18/2	23	023	48 hours
5.1	Close Project	Everyone	5 days	Low	12/11/20	12/15/2	23	023	40 hours
5.1.1	Assess Satisfaction	Everyone	1 day	Low	12/11/20	12/11/20	23	23	8 hours
5.1.2	Summarize Project Results and Lessons Learned	Everyone	1 day	Low	12/12/20	12/12/20	23	23	8 hours
5.1.3	Review and Recognize Team Performance	Everyone	1 day	Low	12/13/20	12/13/20	23	23	8 hours
5.1.4	Close Out the Project Records	Everyone	1 day	Low	12/14/20	12/14/20	23	23	8 hours
5.1.5	Review and Reconcile Financial Performance	Everyone	1 day	Low	12/15/20	12/15/20	23	23	8 hours
5.2	Contract Closure	Everyone	1 day	Low	12/18/20	12/18/2	23	023	8 hours
5.2.1	Close Contract	Everyone	1 day	Low	12/18/20	12/18/20	23	23	8 hours

IV. WBS Dictionary

WBS Dictionary Entry: 9/16/23
WBS Item Number: 1.1
WBS Item Name: Kick Off Meeting
Description: Damyan, Michael, and Seth initiated communications via Teams. Started planning the best ways to work together virtually that align with our schedules for a seamless workflow. Discussions about what the most realistic project option will be along with

developing a plan on how to execute the project began. Seth put together the first team status report for all to review and submit.

WBS Dictionary Entry: 9/18/23

WBS Item Number: 1.2

WBS Item Name: Project Selection

Description: Michael, Seth, and Damyan narrowed down the project idea to two different possibilities. They weighed the pros and cons of both ideas before deciding to go with the digital library project.

WBS Dictionary Entry: 9/24/23

WBS Item Number: 1._

WBS Item Name: Weekly Meeting

Description: Seth, Damyan, and Michael met together and brainstormed all the features they wanted to include into the digital library

WBS Dictionary Entry: 10/1/23

WBS Item Number: 1.9

WBS Item Name: Status Report #2

Description: Damyan, Michael and Seth discussed everything they did from the last report to now, and Seth put it all together in the second status report.

WBS Dictionary Entry: 10/8/23

WBS Item Number: 2._

WBS Item Name: Weekly Meeting

Description: Michael, Seth, and Damyan met up and began assigning roles to each member, setting up what each member would be responsible for

WBS Dictionary Entry: 10/15/23

WBS Item Number: 2.9

WBS Item Name: Team Status Report #3

Description: Seth, Damyan, and Michael discussed a potential framework for the project, including data entries in the SQL, and how the site features would be organized

WBS Dictionary Entry: 10/18/23

WBS Item Number: 3._

WBS Item Name: SQL Table development + Project Report

Description: Damyan, Michael, and Seth began development of the project.

WBS Dictionary Entry: 10/22/23

WBS Item Number: 3._

WBS Item Name: Weekly Meeting

Description: Michael, Seth, and Damyan met and talked about what was working and not working with the project. They thought of new ideas that could be added to the project, and got rid of a few ideas that would've been out of the necessary scope.

WBS Dictionary Entry: 10/29/23

WBS Item Number: 3.9

WBS Item Name: Team Status Report #4

Description: Seth, Damyan, and Michael met up and gave updates of the work being done to put into the report. Seth wrote up the report

WBS Dictionary Entry: 11/5/23

WBS Item Number: 4._

WBS Item Name: Weekly Meeting

Description: Damyan, Michael, and Seth added new minor roles to each member pertaining to objectives that were not assigned at the original assigning.

WBS Dictionary Entry: 11/9/23

WBS Item Number: 4._

WBS Item Name: Team meeting

Description: Damyan, Michael, and Seth discussed what each had previously worked on and

went over everything together. Damyan worked on getting default users and their metadata uploaded to SQL. Group collaboratively set up Microsoft Visual Studio and GitHub.

WBS Dictionary Entry: 11/12/23

WBS Item Number: 4.9

WBS Item Name: Team Status Report #5

Description: Michael, Seth, and Damyan offered new updates pertaining to SQL and GitHub to the report. Seth wrote up the report for the team.

WBS Dictionary Entry: 11/19/23

WBS Item Number: 5._

WBS Item Name: Weekly Meeting

Description: Seth, Damyan, and Michael discussed about any final details that still needed to be added to the project, while making sure the SQL was linked properly with the site

WBS Dictionary Entry: 11/27/23

WBS Item Number: 5.9

WBS Item Name: Team Status Report #6

Description: Damyan, Michael, and Seth met up for another status report adding in updates that they felt confident in being done and ready. Seth wrote the report

WBS Dictionary Entry: 12/3/23

WBS Item Number: 6._

WBS Item Name: Weekly Meeting

Description: Michael, Seth, and Damyan began putting the final touches on the site. Seth made sure all the php and coding was in place. Michael dealt with html to help the site look better and more pleasing to the eye. Damyan QA tested the main features of the website to make sure nothing was broken

WBS Dictionary Entry: 12/10/23

WBS Item Number: 6.9

WBS Item Name: Team Status Report #7

Description: Seth, Damyan, and Michael met and discussed the final updates for the site and SQL database. While working on those final updates though, they forgot to write up and submit the final report.

V. Timeline with Milestones

Phase	Description of Work	Start and End Dates
Phase I	<p>Planning - In this phase goals were defined. Along with goals, site structure, timeline, budget, and resource allocation were established.</p> <p>Key Milestones:</p> <ol style="list-style-type: none"> 1. Kick-off meeting 9/16 2. Project Selection 9/18 3. Schedule weekly team meetings 9/24 4. Develop proposal 9/31 5. Finalize project proposal 10/3 6. Define timeline & work plan 10/10 7. Define project budget 10/12 	9/16-10/25
Phase II	<p>Implementation - In this phase, designs were developed, as well as site architecture and databases.</p> <p>Key Milestones:</p> <ol style="list-style-type: none"> 1. Web Server access for group 10/26 2. Develop SQL tables 10/26 3. Beginning of PHP coding 11/1 4. Design and develop UI 11/20 5. Design and develop admin interface 11/20 	10/26-11/30
Phase III	<p>Completion - In this phase QA testing, bug fixing, and documentation were dealt</p>	12/1-12/17

	<p>with.</p> <p>Key Milestones:</p> <ol style="list-style-type: none"> 1. Begin testing the site for any errors 12/5 2. Bug fixing errors that were found 12/7 3. Documentation written up for project 12/12 4. Final testing for site to confirm no bugs 12/15 5. Submit final project 12/17 6. Submit team member feedback 12/17 	
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VI. Risks

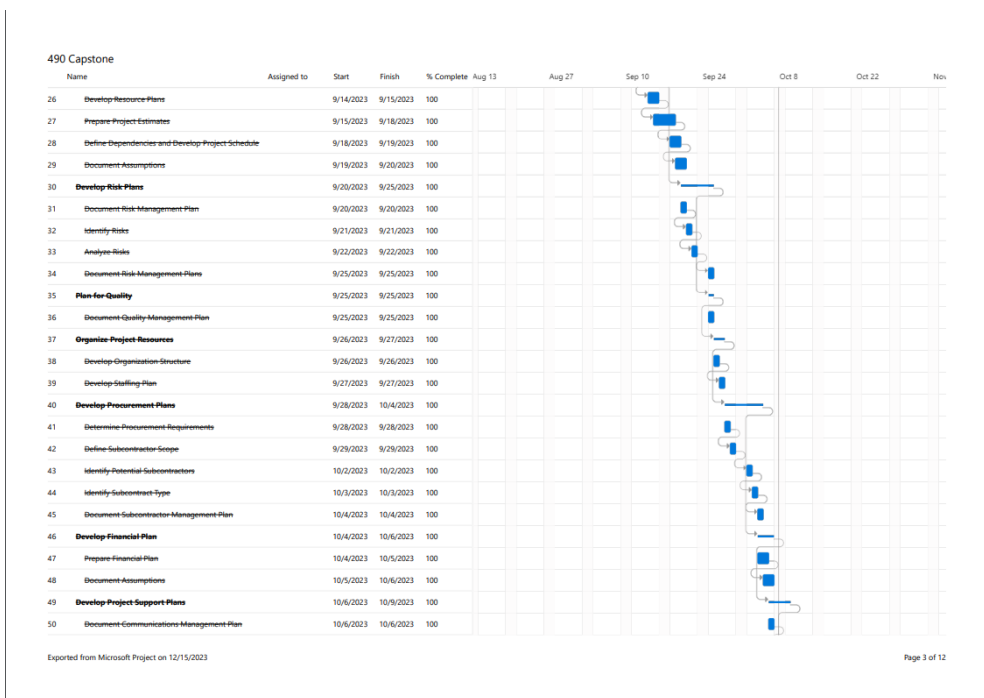
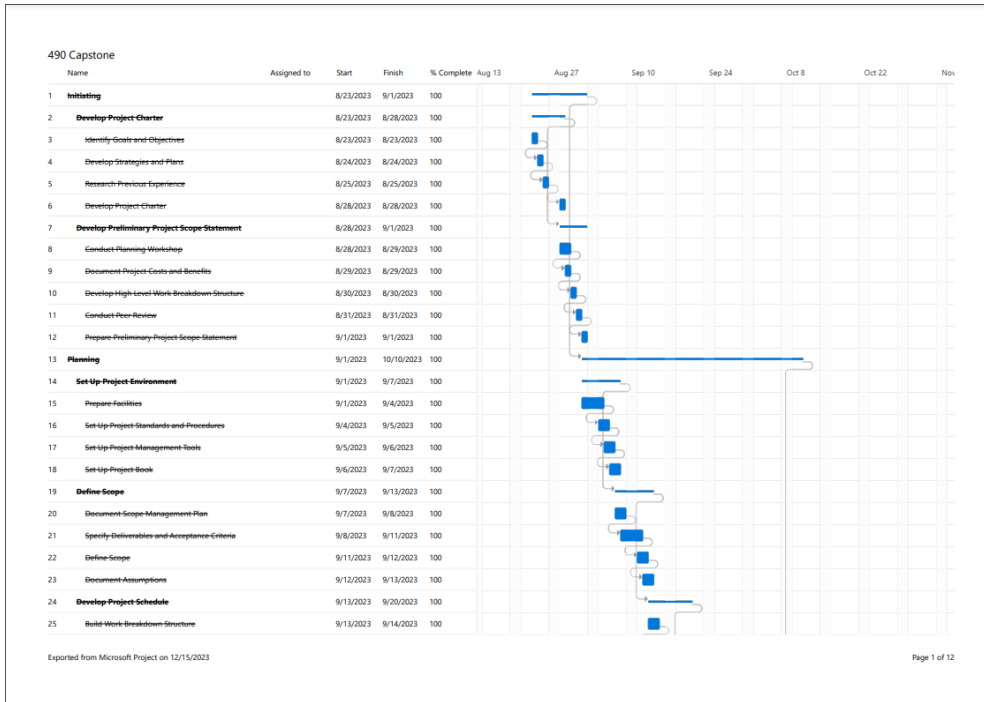
Business Risks

- Financial Constraints: Budget may become overrun due to unforeseen expenses. Will monitor, plan, and communicate budget adjustments.
- Resistance from library staff to change systems: Will provide a change management strategy that will include training.
- Loss of productivity during transition of systems: Will provide a change management strategy that will help minimize disruptions.
- Data security and privacy concerns: Will implement security measures, encryption strategies, and regular security checks.
- Incomplete stakeholder involvement: Will be in regular communication and involvement with stakeholders throughout the project.

Technical Risks

- Data migration issues: Will conduct data mapping, validation, and testing during the process to minimize any issues.
- Integration challenges: May be challenges with any existing or third party systems. Will provide compatibility and integration plans.
- Technology may become outdated: Rapid advancement of technology may lead to the system becoming outdated before it's finished. Will regularly update and stay flexible for any future changes.
- User interface usability issues: Will execute usability testing with the end users.
- System downtime: Will continually execute backups along with a recovery plan that will schedule any updates during non peak hours.

VII. Gantt Chart



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Exported from Microsoft Project on 12/15/2023

Page 5 of 12

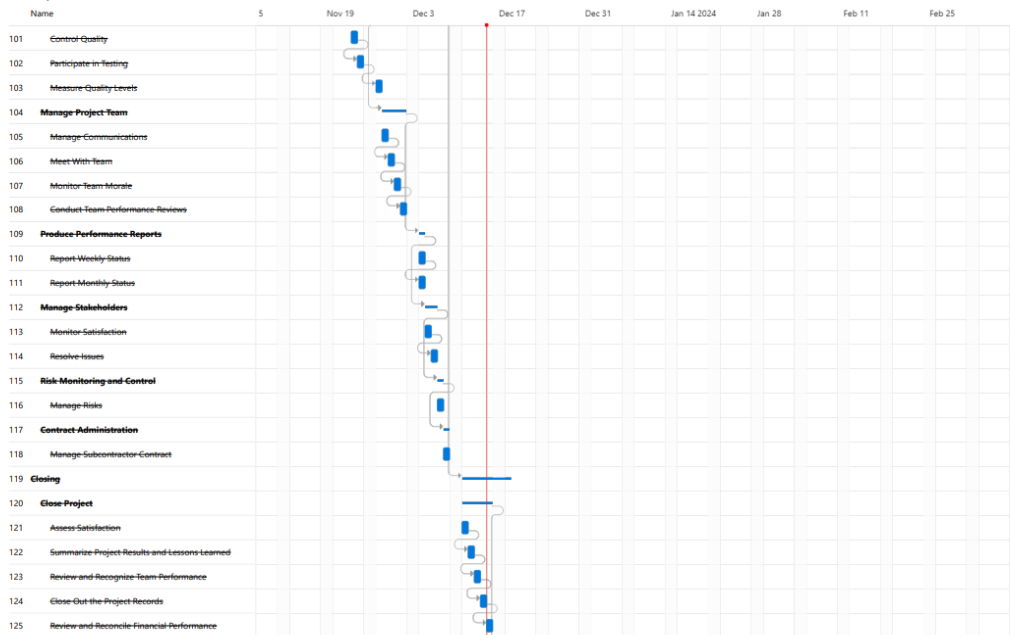
490 Capstone



Exported from Microsoft Project on 12/15/2023

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Exported from Microsoft Project on 12/15/2023

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VIII. Budget & Financial Information

The primary goal of the Library Digitization Project is to revolutionize the traditional record keeping processes of XYZ Public Library by transitioning from manual paper based file keeping systems to a comprehensive digital platform. The project necessitates materials to achieve its objective, including: document scanners for converting physical records into digital formats, secure servers for data storage, and user friendly software interfaces. Additionally, the budget sets aside funds for cybersecurity measures, staff training programs and ongoing technical support and maintenance. The project's financial scope is carefully set to not exceed \$20,000, which ensures a cost effective transition that aligns with the libraries commitment to serving the community with improved efficiency and accessibility by the project completion date of December 15, 2023.

Cost Estimates

Phase	Description of Work	Anticipated Costs
Phase I	The bulk of this phase revolves around the project manager and team leaders. This will require an average amount of weekly wages.	\$1,800 Project Manager \$45/h for 20 hours Team Leaders \$30/h for 30 hours
Phase II	This phase will require the Project Manager to incorporate the Coders and Databases to acquire a timeline for project completion	\$5,020 Project Manager \$45/h for 20 hours Coders \$35/h for 16 hours Databases \$35/h for 16 hours \$3,000 for equipment and software
Phase II	This phase will rely heavily on the coders to bring the project to full function and to also work with the project manager and receive feedback from the field.	\$10,000 Project Manager \$45/h for 20 hours Coders \$35/h for 240 hours Databases \$35/hour for 20 hours
	Total	\$16,820

Ongoing Costs

XYZ Library will need to account for the ongoing expenses for the technology and services which are essential for the system's continued operation, including web hosting, server space,

and internet connectivity. Additionally, XYZ Library will need to budget for the training of newly hired librarians post initial launch.

Initial Investment(C_0): \$20,000

Estimated Costs: \$16,820

Expected Cash Flows: \$6,000 (year 1), \$8,000 (year 2), \$15,000 (year 3)

Discount Rate(r): 8%

Net Present Value (NPV)

$$NPV = \sum \left(\frac{CF_t}{(1+r)^t} \right) - C_0$$

$$NPV = \frac{6,000}{1.08} + \frac{8,500}{1.08^2} + \frac{15,000}{1.08^3} - 20,000$$

$$NPV \approx 5,555.56 + 7,331.70 + 11,938.22 - 20,000$$

$$\mathbf{NPV \approx \$5,825.48}$$

Return on Investment (ROI)

$$ROI = \frac{\text{Net Profit}}{\text{Cost of Investment}} \times 100$$

$$ROI = \frac{\text{Total Cash Flows} - \text{Initial Investment}}{\text{Initial Investment}} \times 100$$

$$ROI = \frac{(6,000 + 8,500 + 15,000) - 20,000}{20,000} \times 100$$

$$ROI = \frac{29,500 - 20,000}{20,000} \times 100$$

$$ROI = \frac{9,500}{20,000} \times 100$$

$$\mathbf{ROI = 47.5\%}$$

Payback

$$\text{Payback Period} = \frac{\text{Initial Investment}}{\text{Net Annual Cash Flow}}$$

$$\text{Payback Period} = \frac{20,000}{6,000}$$

$$\mathbf{\text{Payback Period} \approx 3.33 \text{ years}}$$

IX. Project Team

Project Sponsor: Dee Piziak

Project Manager: Michael Binelli

Team Members

- Programmer(s): Michael Binelli, Seth Kaderabek
- MySQL integration: Damyan Michel, Seth Kaderabek
- Writer(s): All
- Xxx Assurance/Tester: All

- Project Status Reports: Seth Kaderabek, Damyan Michel
- System Architect: Michael Binelli, Seth Kaderabek

Customer: XYZ Library

Key Stakeholders: Library staff, Library patrons, Community members, IT department, Project manage, Funding sources(government agencies, grant providers), Technology vendors, Local government, Educational institutions

X. System Prototype

Introduction

The system prototype for the Library Digitization Project at XYZ Library tackles the challenges posed by traditional paper based systems by providing a cutting edge solution designed to streamline operations, enhance accessibility, and manage data efficiently.

- The system can be accessed via the following links: [Guestbook \(uwm.edu\)](#)

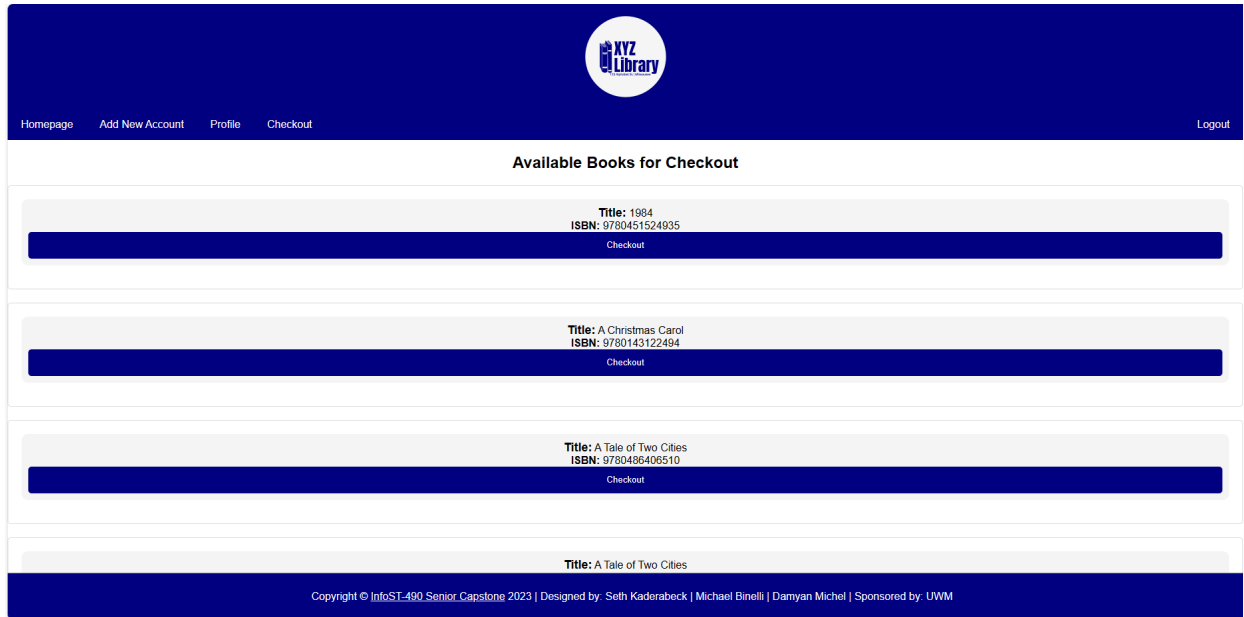
Entry Form (USER)

The Add New Account form is where new users will enter their information to create a new account.

The screenshot shows a dark blue header with the XYZ Library logo in the center. On the left, there are links for 'Homepage' and 'Add New Account'. On the right, there is a 'Login' link. Below the header, the title 'Sign Up' is centered. The form itself is white and contains five input fields: 'First Name', 'Last Name', 'Email Address', 'Password', and 'Confirm Password'. At the bottom of the form is a dark blue button labeled 'Register'.

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The checkout page is where users who are logged in will check out a book. That data is processed in the items database.



Administrative Backend

The admin interface can be accessed after logging in as an admin here: [Guestbook \(uwm.edu\)](http://uwm.edu/Guestbook)

- Admin login:

- userID: [REDACTED]

- Password: [REDACTED]

1. Logging in

- When in the website click on the login button in the top right of the screen, enter in your credentials, then click the login button at the bottom of the screen.

-

2. Logging out

- Once logged in, when you want to logout, click on the logout button on the right side of the header

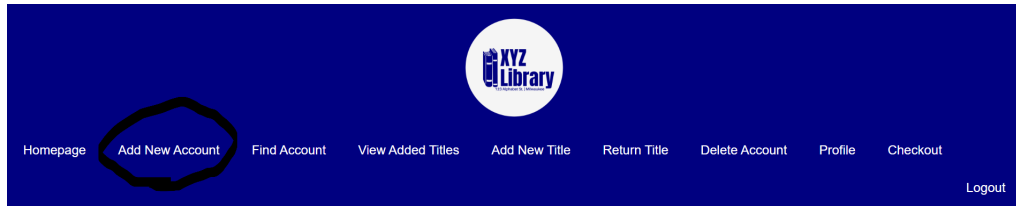


Logged In!

You are now logged in, Seth!
[Logout](#)



- b.
3. Adding a new user
- a. Click on add new account and input all of the information needed to make an account. When done, click the register button at the bottom



Sign Up

First Name:
Damyan

Last Name:
Michel



- b.
4. Deleting a user
- a. When needing to delete an account, click delete account, then put in the user's email. Once submitted, the site will find the profile associated with the email and delete it from the database

Enter customer email address: _____

Email Address:
dmichel@uwm.edu

Delete

A screenshot of the XYZ Library website's navigation bar. The bar is dark blue with white text. It contains the following links from left to right: Homepage, Add New Account, Find Account, View Added Titles, Add New Title, Return Title, Delete Account, Profile, Checkout, and Logout. The 'Delete Account' link is circled in black. Below the navigation bar is a form with a text input field containing the email address 'dmichel@uwm.edu' and a 'Delete' button.

b.

5. Adding a new book

- a. Click on add new title tab and put in the book's name and ISBN. Once done, click submit

XYZ Library

Homepage Add New Account Find Account View Added Titles **Add New Title** Return Title Delete Account Profile Checkout Logout

Add new title

Book Name:

ISBN:

Submit

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b.

6. Viewing and Editing a currently checked out books

- a. When needing to return a user's book, click on return title, and find the correct book being returned, and make sure the correct email is with the book. Click return when the book is found.

XYZ Library

Homepage Add New Account Find Account View Added Titles Add New Title **Return Title** Delete Account Profile Checkout Logout

Checked Out Books

Title: To Kill a Mockingbird
ISBN: 9780061120084
Checked Out By: Michael Binelli (Email Address: mbinelli1996@gmail.com)
Return

Title: A Tale of Two Cities
ISBN: 9780486406510
Checked Out By: Michael Binelli (Email Address: mbinelli1996@gmail.com)
Return

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b.

7. View a list of current users

- a. When needing to delete an account, but you can't remember the user's email, go to find account, and find the person's name and email so you can then use that information accordingly.

Registered Users

There are currently 13 registered users.

Name	Email	Date Registered
Kaderabek, Seth	testhaha@gmail.com	May 14, 2023
test2, test	test22@gmail.com	May 14, 2023
k, Seth	kaderab6@uwm.edu	May 15, 2023
j, seth	kaderab7@uwm.edu	May 15, 2023
test, test	test@test.test	May 15, 2023
asdf, asdf	asdf	May 19, 2023
test2, test	MikeLolhello@gmail.com	December 07, 2023
lastname, Hello	hahahahahaha@haha.net	December 08, 2023
Smith, John	jsmith@gmail.com	December 08, 2023
testtesttest, Test	hahalolol@funny.com	December 08, 2023

- b.
- 8. View profile
 - a. Click on the profile tab and view your profile here, including any books you have checked out at the time.




[Homepage](#)
[Add New Account](#)
[Find Account](#)
[View Added Titles](#)
[Add New Title](#)
[Return Title](#)
[Delete Account](#)
[Profile](#)
[Checkout](#)
[Logout](#)

Welcome, Seth k!

Email: kaderab6@uwm.edu

Your Checked Out Books:

- b.
- 9. Checkout a book
 - a. If you yourself would like to check out a book, click onto checkout, then checkout whichever book you would like to read



[Homepage](#)
[Add New Account](#)
[Find Account](#)
[View Added Titles](#)
[Add New Title](#)
[Return Title](#)
[Delete Account](#)
[Profile](#)
[Checkout](#)
[Logout](#)

Available Books for Checkout

Title: 1984
ISBN: 9780451524935

Checkout

b.

FTP Server Access

- Host: sftp://soisweb.uwm.edu
- Username: [REDACTED]
- Password: [REDACTED]

XI. System Documentation: Users

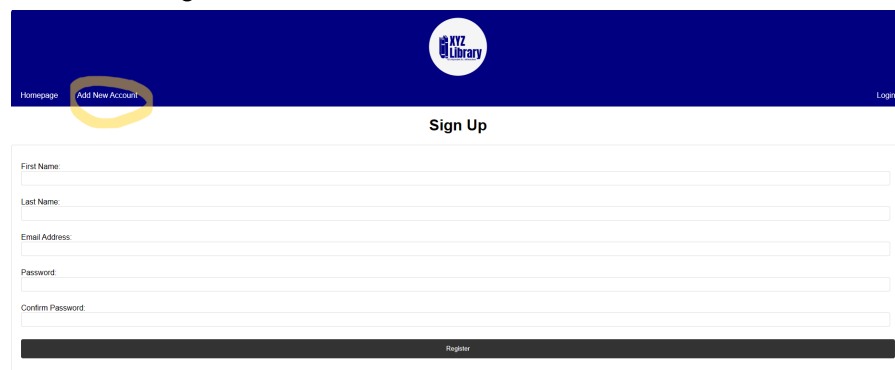
User Interface

The public interface can be accessed at:

<https://kaderab6.soisweb.uwm.edu/seniorcapstone/finalproject/index.php>

1. Signing up

- Once in the website, click add new account, and put in your information. Once done, click register at the bottom



The screenshot shows the 'Sign Up' form on the XYZ Library website. The header is dark blue with the XYZ Library logo and navigation links for 'Homepage', 'Add New Account', and 'Login'. The form itself is white and contains five input fields: 'First Name', 'Last Name', 'Email Address', 'Password', and 'Confirm Password'. A dark grey 'Register' button is located at the bottom of the form.

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2. Logging in

- Once registered, click login on the right side of the header, put in your email and password, then click login.



The screenshot shows the 'Login' form on the XYZ Library website. The header is dark blue with the XYZ Library logo and navigation links for 'Homepage', 'Add New Account', and 'Login'. The form is white and contains two input fields: 'Email Address' and 'Password'. A dark grey 'Login' button is located at the bottom of the form.

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3. Logging out

- a. Once done on the website click logout in the top right, and you'll be logged out immediately



Logged In!

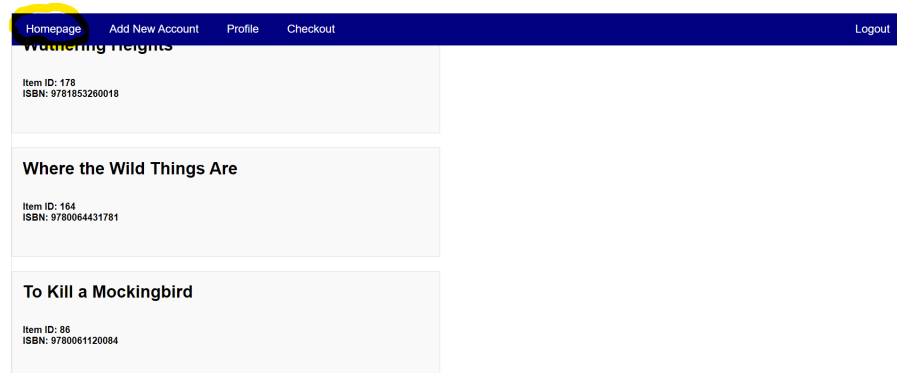
You are now logged in, John!
[Logout](#)

- b.



4. View collection of books

- a. If you want to browse, click homepage, and scroll through however many pages of books as you desire

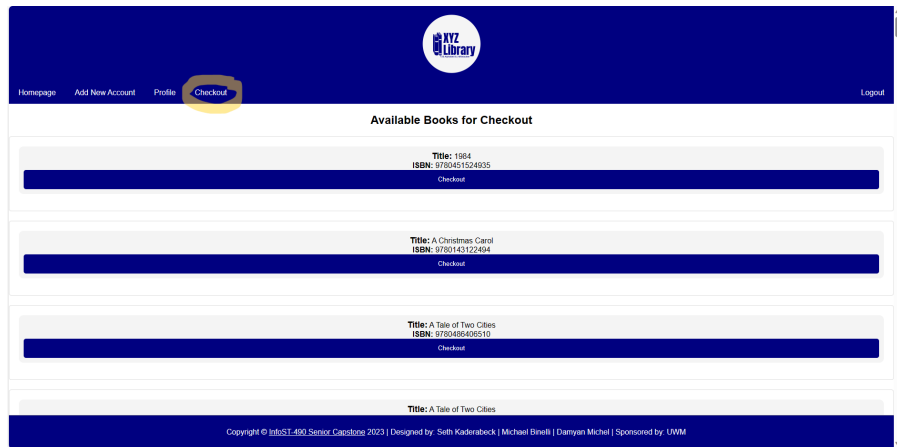


- b.



5. View if a book is currently available or checked out

- a. When you are ready to checkout a book, click checkout and scroll through the list of books, which you will only see books that aren't checked out

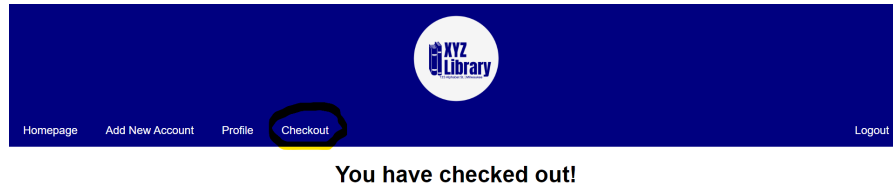


- b.



6. Checkout a book

- a. When you find your book, click the blue checkout button below a book and you get a success screen to pop up

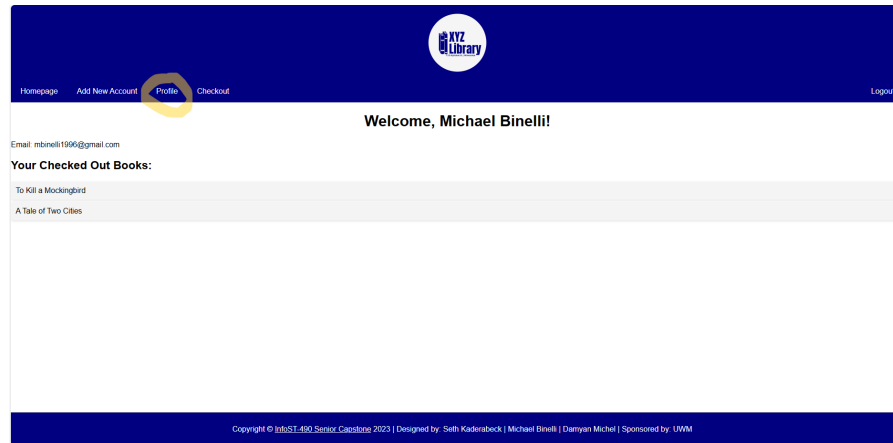


b.

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7. View what books they currently have checked out

- a. If you want to see what books you have checked out, click on the profile tab, to see your name, email, and any books that you'd have checked out



b.

XII. System Documentation: Technical

Code

The system is located at:

<https://soisweb.uwm.edu:2083/cpsess5687500901/frontend/jupiter/filemanager/index.html>

Directory: publichtml/seniorcapstone/finalproject

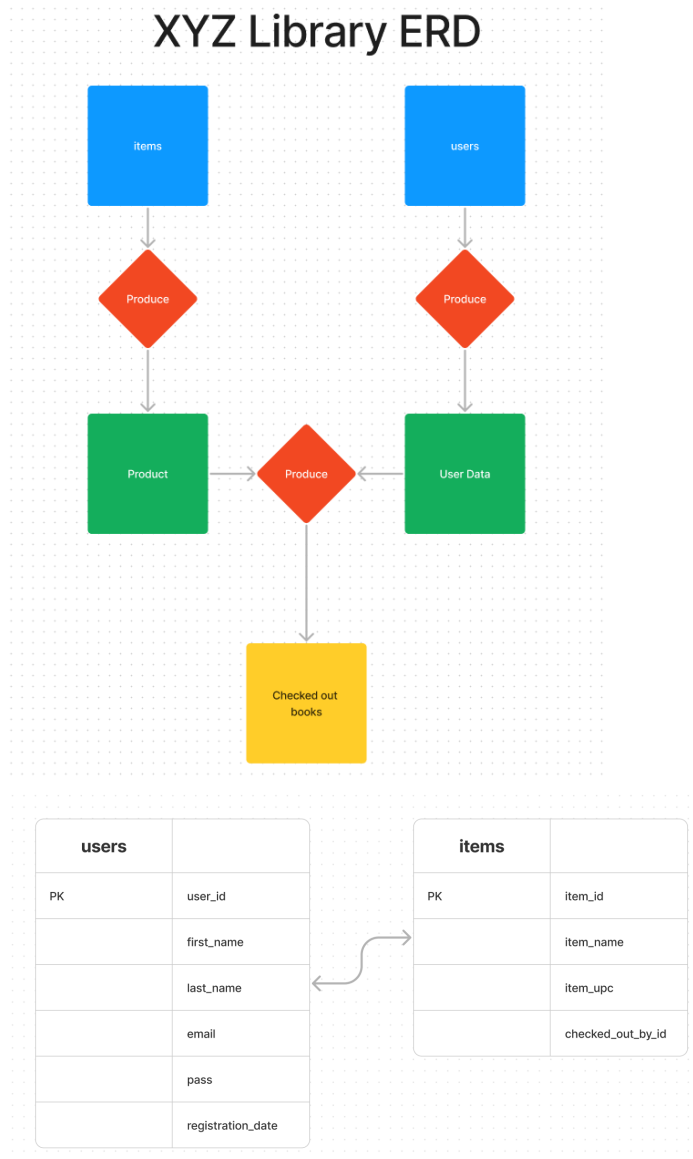
All working code is available here. See Code Documentation (page 34) for examples.

Detailed Statement explaining main configuration work

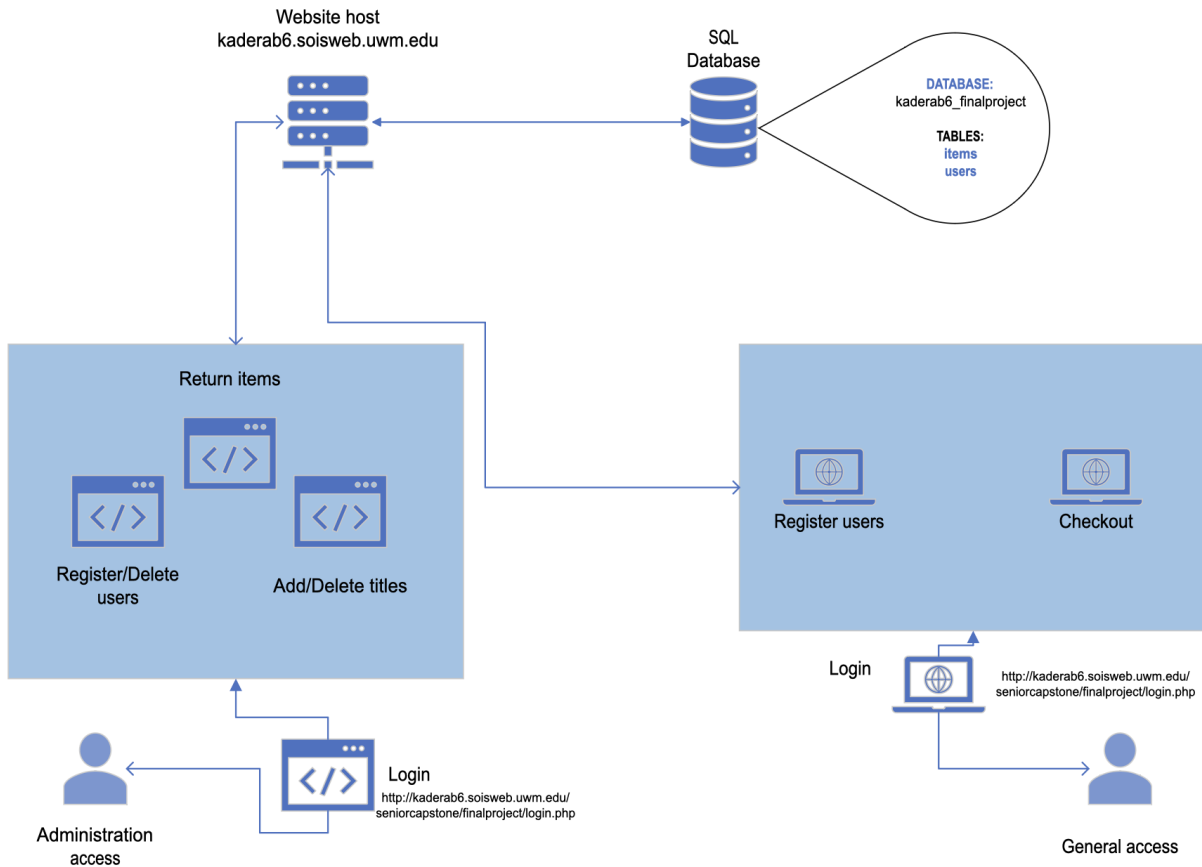
Two user interfaces were created with the help of PHP, MySQL, HTML, and CSS. The first interface is for normal users, where they can create an account, check out books, which updates the database pertaining to which books are checked out or available, and view their

profile. The second interface is for admin users where they share the same features with normal users, but can also add books to the database, return users' books, and find and delete accounts. PHP was done mainly by Seth. HTML and CSS was done by Michael. SQL data info and integration was done by Damyam, with assistance by Seth.

Entity Relationship Diagram (ERD) and Table Schemas



System Architecture Diagram



XIII. Lessons Learned

Given the choices available to us to complete this project, we have chosen to create a project revolving around the tools and processes that are used by current libraries and are necessary for efficiently integrating the various items available to the consumer with an easy way for employees to interact with. While this project involved various complicated and demanding steps, it was very satisfying to complete a project that could potentially have many real-world uses as well as help with outdated software and other limitations that many library systems face.

Developing a solid plan of action in terms of workload, scheduling coordination, and determining realistic outcomes was the most challenging hurdle we have faced while completing this project. While each member has reliable internet access, coordinating schedules created a difficult dilemma. However, using online collaboration tools and features, we were able to also contribute on our own time without having everyone else online. This definitely paved the way to success in completing this project in a timely manner. Furthermore, we planned team meetings whenever time allowed us to be available at the same time. These meetings allow us to bounce off different ideas properly, communicate any issues regarding project development, collaboration, and workload, and work through issues in a reasonable timeframe.

Overall, navigating through this project realistically while making everyone involved and active made sure that we successfully completed this project.

In the future, a solid team meeting schedule would definitely benefit the group and would allow for each member to voice ideas and opinions without the limitations presented over text.

XIV. Code Documentation

The finished product contains multiple, extensive files. The following code examples form the main structure of the project.

mysqli_connect.php

```
<?php
DEFINE ('DB_HOST', 'localhost');
DEFINE ('DB_USER', 'kaderab6_finalprojectadmin');
DEFINE ('DB_PASSWORD', '[D-VPsFjtc4-');
DEFINE ('DB_NAME', 'kaderab6_finalproject');

$dbc = @mysqli_connect(DB_HOST, DB_USER, DB_PASSWORD, DB_NAME) OR die ('Could
not connect');
?>
```

style.css

```
body{
  background-size: cover;
  background-position: center;
  font-family: Arial, Helvetica, sans-serif;
  margin: auto;
  height: 100vh;
  flex: 1;
}
h1{
  text-align: center;
}
.header {
  padding: 4px;
  text-align: center;
  background: #000080;
  color: white;
}
.header img{
```

```
width: 150px;
height: 150px;
display: block;
margin-left: auto;
margin-right: auto;
}
```

```
/* Sticky navbar */
```

```
.navbar {
  overflow: hidden;
  background-color: #000080;
  position: sticky;
  position: -webkit-sticky;
  top: 0;
}
```

```
.navbar a {
  float: left;
  display: block;
  color: white;
  text-align: center;
  padding: 14px 20px;
  text-decoration: none;
}
```

```
.navbar a.right {
  float: right;
}
```

```
.navbar a:hover {
  color: #808080;
}
```

```
.navbar a.active {
  color: #808080;
}
```

```
/*index.php*/
```

```
.books-container {
  display: flex;
  flex-wrap: wrap;
  justify-content: space-between;
}
```

```
.book-card{
  box-sizing: border-box;
  width: 48%;
  margin-bottom: 20px;
  border: 1px solid #ddd;
```

```

    background-color: #f9f9f9;
    padding: 15px;
}
.book-content {
    display: flex;
    flex-direction: column;
}
.book-title,
.book-data {
    margin-bottom: 10px;
}
.book-title h2 {
    margin: 0;
}

/*register.php % login.php forms*/
form {
    background: #fff;
    padding: 20px;
    margin-top: 20px;
    border: 1px solid #ddd;
    border-radius: 5px;
}
input[type="text"],input[type="password"] {
    width: calc(100% - 10px);
    height: 30px;
    margin-bottom: 10px;
    padding: 5px;
    box-sizing: border-box;
    border: 1px solid #ddd;
    border-radius: 4px;
}
input[type="submit"] {
    width: 100%;
    height: 40px;
    background: #333;
    color: #fff;
    border: none;
    border-radius: 4px;
    cursor: pointer;
}
input[type="submit"]:hover {
    background: #555;
}

```

```

.error {
  color: red;
}

/*Profile.php*/
.checked-out-books {
  list-style-type: none;
  padding: 0;
}
.checked-out-books li {
  background-color: #f4f4f4;
  border-radius: 5px;
  margin: 5px 0;
  padding: 10px;
  box-shadow: 0 2px 5px rgba(0, 0, 0, 0.1);
  transition: background-color 0.3s ease;
}
.checked-out-books li:hover {
  background-color: #e0e0e0;
}

/*Footer*/
#footer {
  border-top: 1px solid #999;
  height: 50px;
  margin-top: 50px;
  padding: 10px;
  text-align: center;
  background-color: #000080;
  position: fixed;
  left: 0;
  bottom: 0;
  width: 100%;
}
#footer a {
  color: white;
}
#footer a:hover {
  color: #808080;
}
#footer p {
  color: white;
}

```

```
/*external link hover effect. using span tag*/
```

```
.hover-effect {  
  display: inline-block;  
  position: relative;  
  color: #fff;  
}  
.hover-effect::after {  
  content: "";  
  position: absolute;  
  width: 100%;  
  transform: scaleX(0);  
  height: 2px;  
  bottom: 0;  
  left: 0;  
  background-color: #fff;  
  transform-origin: bottom right;  
  transition: transform 0.25s ease-out;  
}  
.hover-effect:hover::after {  
  transform: scaleX(1);  
  transform-origin: bottom left;  
}
```

```
index.php
```

```
<?php  
session_start();  
  
include('header.php');  
include('mysqli_connect.php');  
  
// Check if the user is logged in  
if (isset($_SESSION['first_name'])) {  
  echo "You are currently logged in as {" . $_SESSION['first_name'] . "}.  
}  
  
// Delete operation  
if (isset($_GET['delete_id']) && (isset($_SESSION['user_id']) && ($_SESSION['user_id'] == 6)))  
{  
  $delete_id = mysqli_real_escape_string($dbc, trim($_GET['delete_id']));  
  $delete_query = "DELETE FROM items WHERE item_id = " . $delete_id;  
  $delete_results = mysqli_query($dbc, $delete_query);  
  if ($delete_results) {  
    echo "<h3 style='background-color:blue;'>COMMENT DELETED</h3><br>";  
  }  
}
```

```

} else {
    $delete_id = "";
}
$display = 10;

// Pagination and sorting logic
if (isset($_GET['p']) && is_numeric($_GET['p'])) {
    $pages = $_GET['p'];
} else {
    $q = "SELECT COUNT(item_id) FROM items";
    $r = mysqli_query ($dbc, $q);
    $rowp = mysqli_fetch_array ($r, MYSQLI_NUM);
    $records = $rowp[0];
    if ($records > $display) {
        $pages = ceil ($records/$display);
    } else {
        $pages = 1;
    }
}
if (isset($_GET['s']) && is_numeric($_GET['s'])) {
    $start = $_GET['s'];
} else {
    $start = 0;
}
$sort = (isset($_GET['sort'])) ? $_GET['sort'] : 'title';
switch ($sort) {

case 'oldest':
    $order_by = 'item_name ASC';
    break;
default:
    $order_by = 'item_name DESC';
    $sort = 'recent';
    break;
}

$query = "SELECT * FROM items ORDER BY $order_by LIMIT $start, $display";
$results = mysqli_query($dbc, $query);
if ($results) {
    echo "...Database loaded successfully...<br><br>";
} else {
    echo "There was an error";
}
?>

```

```

<!-- HTML Markup -->
<?php while ($row = mysqli_fetch_array($results, MYSQLI_ASSOC)): ?>
  <div class="books-container">
    <div class="book-card">
      <div class="book-content">
        <div class="book-title">
          <h2><?= $row["item_name"] ?></h2>
        </div>
        <div class="book-data">
          <h5> Item ID: <?= $row["item_id"] ?><br>ISBN: <?= $row["item_upc"] ?></h5>
        </div>
      </div>
    </div>
  </div>
<?php endwhile; ?>

<!-- Pagination Links -->
<?php if ($pages > 1): ?>
  <br/><p>
  <?php
  // Pagination links logic
  $current_page = ($start/$display) + 1;
  if ($current_page != 1) {
    echo '<a href="?s=' . ($start - $display) . '&p=' . $pages . '&sort=' . $sort .
"">Previous</a> ';
  }
  for ($i = 1; $i <= $pages; $i++) {
    if ($i != $current_page) {
      echo '<a href="?s=' . (($display * ($i - 1))) . '&p=' . $pages .
'&sort=' . $sort . ""> . $i . '</a> ';
    } else {
      echo $i . ' ';
    }
  }
  if ($current_page != $pages) {
    echo '<a href="?s=' . ($start + $display) . '&p=' . $pages . '&sort=' . $sort .
"">Next</a>';} ?></p>
<?php endif; ?>
<?php include('footer.php'); ?>
register.php
<?php
$page_title = 'Add New Account';
include('header.php');
if ($_SERVER['REQUEST_METHOD'] == 'POST') {

```



```

require('mysqli_connect.php');
$errors = array();

// Validate input fields
$fn = validateInput('first_name', 'Please enter your first name. ');
$ln = validateInput('last_name', 'Please enter your last name. ');
$e = validateInput('email', 'Please enter your email address. ');
$p = validatePassword('pass1', 'pass2', 'Please make sure passwords match. ');
if (empty($errors)) {
    $hashed_password = password_hash($p, PASSWORD_BCRYPT);
    $q = "INSERT INTO users (first_name, last_name, email, pass, registration_date)
        VALUES ('$fn', '$ln', '$e', '$hashed_password', NOW() )";
    $r = @mysqli_query($dbc, $q);
    if ($r) {
        echo '<h1>Thank you!</h1>
            <p>Customer is now registered</p><br />';
    } else {
        echo '<h1>System Error</h1>
            <p class="error">You could not be registered due to a system error. We apologize for
any inconvenience.</p>';
        echo '<p> . mysqli_error($dbc) . '<br /><br />Query: ' . $q . '</p>';
    }
    mysqli_close($dbc);
    include('footer.php');
    exit();
} else {
    echo '<h1>Error!</h1>
        <p class="error">The following error(s) occurred:<br />';
    foreach ($errors as $msg) {
        echo " - $msg<br />\n";
    }
    echo '</p><p>Please try again.</p><p><br /></p>';
}
mysqli_close($dbc);
}
function validateInput($field, $errorMessage)
{
    global $dbc, $errors;
    if (empty($_POST[$field])) {
        $errors[] = $errorMessage;
    } else {
        return mysqli_real_escape_string($dbc, trim($_POST[$field]));
    }
    return null;
}

```

```

function validatePassword($pass1Field, $pass2Field, $errorMessage)
{
    global $errors,$dbc;
    if (!empty($_POST[$pass1Field])) {
        if ($_POST[$pass1Field] != $_POST[$pass2Field]) {
            $errors[] = $errorMessage;
        } else {
            $p = mysqli_real_escape_string($dbc, trim($_POST[$pass1Field]));
            return $p;}
        } else {
            $errors[] = 'Please enter your password.'; }
    return null;}?>
<h1>Sign Up</h1>
<form action="register.php" method="post">
    <p>First Name: <input type="text" name="first_name" size="15" maxlength="20"
        value="<?=isset($_POST['first_name']) ? htmlspecialchars($_POST['first_name']) : " ?>"
    /></p>
    <p>Last Name: <input type="text" name="last_name" size="15" maxlength="40"
        value="<?=isset($_POST['last_name']) ? htmlspecialchars($_POST['last_name']) : " ?>"
    /></p>
    <p>Email Address: <input type="text" name="email" size="20" maxlength="60"
        value="<?=isset($_POST['email']) ? htmlspecialchars($_POST['email']) : " ?>" /> </p>
    <p>Password: <input type="password" name="pass1" size="10" maxlength="20"
        value="<?=isset($_POST['pass1']) ? htmlspecialchars($_POST['pass1']) : " ?>" /></p>
    <p>Confirm Password: <input type="password" name="pass2" size="10" maxlength="20"
        value="<?=isset($_POST['pass2']) ? htmlspecialchars($_POST['pass2']) : " ?>" /></p>
    <p><input type="submit" name="submit" value="Register" /></p>
</form>
<?php include('footer.php'); ?>

```

login_page.inc.php

```

<?php

$page_title = 'Login';
include ('header.php');
if (isset($errors) && !empty($errors)) {
    echo '<h1>Error!</h1>';
    <p class="error">The following error(s) occurred:<br />';
    foreach ($errors as $msg) {
        echo " - $msg<br />\n";
    }
    echo '</p><p>Please try again.</p>';}?>
<h1>Login</h1>

```

```

<form action="login.php" method="post">
    <p>Email Address: <input type="text" name="email" size="20" maxlength="60" /> </p>
    <p>Password: <input type="password" name="pass" size="20" maxlength="20" /></p>
    <p><input type="submit" name="submit" value="Login" /></p>
</form>
<?php include ('footer.php'); ?>

```

login.php

```

<?php
if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    require ('login_functions.inc.php');
    require ('mysqli_connect.php');
    list ($check, $data) = check_login($dbc, $_POST['email'], $_POST['pass']);
    if ($check) {
        session_start();
        $_SESSION['user_id'] = $data['user_id'];
        $_SESSION['first_name'] = $data['first_name'];
        $_SESSION['last_name'] = $data['last_name'];
        $_SESSION['email'] = $data['email'];
        $_SESSION['registration_date'] = $data['registration_date'];
        $_SESSION['agent'] = md5($_SERVER['HTTP_USER_AGENT']);
        redirect_user('loggedin.php');
    } else {
        $errors = $data;}
    mysqli_close($dbc);
}
include ('login_page.inc.php');
?>

```

loggedin.php

```

<?php
session_start();
if (!isset($_SESSION['agent']) OR ($_SESSION['agent'] !=
md5($_SERVER['HTTP_USER_AGENT'])) ) {
    require ('includes/login_functions.inc.php');
    redirect_user();
}
$page_title = 'Logged In!';
include ('header.php');
echo "<h1>Logged In!</h1>";
<p>You are now logged in, {$_SESSION['first_name']}!</p>

```

```
<p><a href=\"logout.php\">Logout</a></p>;  
include ('footer.php');  
>
```

profile.php

```
<?php  
session_start();  
$page_title = 'Profile';  
include('header.php');  
  
// Check if the user is logged in  
if (!isset($_SESSION['user_id'])) {  
    // Redirect to login page if not logged in  
    header('Location: login.php');  
    exit();  
}  
  
// Include the database connection file  
include('mysqli_connect.php');  
  
// Fetch user information  
$user_id = $_SESSION['user_id'];  
$query_user = "SELECT first_name, last_name, email FROM users WHERE user_id =  
$user_id";  
$result_user = mysqli_query($dbc, $query_user);  
if ($result_user && mysqli_num_rows($result_user) > 0) {  
    $row_user = mysqli_fetch_assoc($result_user);  
    $first_name = $row_user['first_name'];  
    $last_name = $row_user['last_name'];  
    $email = $row_user['email'];  
  
    // Fetch checked out books for the user  
    $query_books = "SELECT item_name FROM items WHERE checked_out_by_id = $user_id";  
    $result_books = mysqli_query($dbc, $query_books);  
    if ($result_books) {  
        // Display user information  
        echo "<h1>Welcome, $first_name $last_name!</h1>";  
        echo "<p>Email: $email</p>";  
  
        // Display checked out books  
        echo '<h2>Your Checked Out Books:</h2>';  
        echo '<ul class="checked-out-books">';  
        while ($book_row = mysqli_fetch_assoc($result_books)) {
```

```

        echo '<li>' . $book_row['item_name'] . '</li>';
    }
    echo '</ul>';
} else {
    echo '<p class="error">Error fetching checked out books: ' . mysqli_error($dbc) . '</p>';
}
} else {
    echo '<p class="error">Error fetching user information.</p>';
}
mysqli_close($dbc);
include('footer.php');
?>

```

checkout.php

```

<?php
session_start();
include('header.php');
include('mysqli_connect.php');
$q = "SELECT item_name AS name, item_upc AS dr, item_id AS id FROM items ORDER BY
item_name ASC";
$r = @mysqli_query($dbc, $q);
if (!isset($_SESSION['user_id'])) {
    header('Location: login.php');
    exit();
}
if (isset($_POST['checkout']) && isset($_POST['item_id'])) {
    $bookId = mysqli_real_escape_string($dbc, trim($_POST['item_id']));
    $updateQuery = "UPDATE items SET checked_out_by_id = {$_SESSION['user_id']} WHERE
item_id = $bookId";
    $updateResult = mysqli_query($dbc, $updateQuery);
    if ($updateResult) {
        echo '<script>
            setTimeout(function(){
                window.location.href = "checkout_redirect.php";
            }, 1000); // 1000 milliseconds delay (1 second)
        </script>';
        exit();
    } else {
        echo "Error: " . mysqli_error($dbc);
    }
}
$query = "SELECT * FROM items WHERE checked_out_by_id IS NULL ORDER BY
item_name ASC";

```

```

$results = mysqli_query($dbc, $query);
if (!$results) {
    die("Query failed: " . mysqli_error($dbc));
}
echo '<div style="text-align: center;">';
echo '<h2 style="font-size: 24px;">Available Books for Checkout</h2>';
while ($row = mysqli_fetch_array($results, MYSQLI_ASSOC)) {
    // Check if the book has been checked out
    if ($row['checked_out_by_id'] === null) {
        echo '<form method="post" action="checkout.php">';
        echo '<div style="background-color: #f4f4f4; border-radius: 10px; padding: 10px; margin-bottom: 15px;">';
        echo '<strong style="font-size: 18px;">Title:</strong> ' . $row['item_name'] . '<br>';
        echo '<strong>ISBN:</strong> ' . $row['item_upc'] . '<br>';
        echo '<input type="hidden" name="item_id" value="' . $row['item_id'] . '">';
        echo '<input type="submit" name="checkout" value="Checkout" style="background-color: #000080; color: #fff; border: none; padding: 8px 12px; border-radius: 5px; cursor: pointer;">';
        echo '</div>';
        echo '</form>';
    }
}
echo '</div>';
include('footer.php');
?>

```

add_items.php

```

<?php
$page_title = 'Item Addition';
include ('header.php');

// Check for form submission:
if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    require ('mysqli_connect.php'); // Connect to the db.
    $errors = array(); // Initialize an error array.

    // Check for a first name:
    if (empty($_POST['item_name'])) {
        $errors[] = 'You forgot to enter item name.';
    } else {
        $fn = mysqli_real_escape_string($dbc, trim($_POST['item_name']));
    }

    // Check for a last name:

```

```

if (empty($_POST['item_upc'])) {
    $errors[] = 'You forgot to enter item ISBN';
} else {
    $ln = mysqli_real_escape_string($dbc, trim($_POST['item_upc']));
}
if (empty($errors)) { // If everything's OK.

    // Register the user in the database...
    // Make the query:
    $q = "INSERT INTO items (item_name, item_upc) VALUES ('$fn', '$ln')";
    $r = @mysqli_query ($dbc, $q); // Run the query.
    if ($r) { // If it ran OK.

        // Print a message:
        echo '<h1>Thank you!</h1>
<p>Item added!</p><p><br /></p>';
    } else { // If it did not run OK.

        // Public message:
        echo '<h1>System Error</h1>
<p class="error">You could not be registered due to a system error. We
apologize for any inconvenience.</p>';
        // Debugging message:
        echo '<p>' . mysqli_error($dbc) . '<br /><br />Query: ' . $q . '</p>';
    } // End of if ($r) IF.
    mysqli_close($dbc); // Close the database connection.

    // Include the footer and quit the script:
    include ('footer.php');
    exit();
} else { // Report the errors.
    echo '<h1>Error!</h1>
<p class="error">The following error(s) occurred:<br />';
    foreach ($errors as $msg) { // Print each error.
        echo " - $msg<br />\n";
    }
    echo '<p><p>Please try again.</p><p><br /></p>';
} // End of if (empty($errors)) IF.
    mysqli_close($dbc); // Close the database connection.
} // End of the main Submit conditional.
?>
<h1>Add new title</h1>
<form action="add_items.php" method="post">

```

```

        <p>Book Name: <input type="text" name="item_name" size="15" maxlength="20"
value="<?php if (isset($_POST['item_name'])) echo $_POST['item_name']; ?>" /></p>
        <p>ISBN: <input type="text" name="item_upc" size="15" maxlength="40" value="<?php
if (isset($_POST['item_upc'])) echo $_POST['item_upc']; ?>" /></p>
        <p><input type="submit" name="submit" value="Submit" /></p>
</form>
<?php include ('footer.php'); ?>

```

admin_uncheck.php

```

<?php
session_start();
include('header.php');
include('mysqli_connect.php');
if (!isset($_SESSION['user_id']) || $_SESSION['user_id'] != 6) {
    header('Location: login.php');
    exit();
}
if (isset($_POST['return']) && isset($_POST['item_id'])) {
    $bookId = mysqli_real_escape_string($dbc, trim($_POST['item_id']));
    $updateQuery = "UPDATE items SET checked_out_by_id = NULL WHERE item_id =
$bookId";
    $updateResult = mysqli_query($dbc, $updateQuery);

    if ($updateResult) {
        echo '<p>Book return successful!</p>';
    } else {
        echo '<p>Could not return book: ' . mysqli_error($dbc) . '</p>';
    }
}
$query = "SELECT items.item_id, items.item_name, items.item_upc, users.user_id,
users.first_name, users.last_name, users.email FROM items JOIN users ON
items.checked_out_by_id = users.user_id WHERE items.checked_out_by_id IS NOT NULL";
$results = mysqli_query($dbc, $query);
if (!$results) {
    die("Error: " . mysqli_error($dbc));
}
echo '<h2>Checked Out Books</h2>';
echo '<form method="post" action="admin_uncheck.php">';
if (mysqli_num_rows($results) > 0) {
    while ($row = mysqli_fetch_array($results, MYSQLI_ASSOC)) {
        echo '<div>';
        echo '<strong>Title:</strong> ' . $row['item_name'] . '<br>';
        echo '<strong>ISBN:</strong> ' . $row['item_upc'] . '<br>';
    }
}

```



```

        echo '<strong>Checked Out By:</strong> ' . $row['first_name'] . ' ' . $row['last_name'] . '
(Email Address: ' . $row['email'] . ')<br>';
        echo '<input type="hidden" name="item_id" value="' . $row['item_id'] . '">';
        echo '<input type="submit" name="return" value="Return">';
        echo '</div><br>';
    }
    echo '</form>';
} else{
    echo '<p>There are no books currently checked out.</p>';
}
include('footer.php');
?>

```

checked_items.php

```

<?php
// This script retrieves all the records from the users table.
$page_title = 'Checked Out';
include ('header.php');
// Page header:
echo '<h1>Added Items</h1>';
require ('mysqli_connect.php'); // Connect to the db.
// Make the query:
$q = "SELECT item_name AS name, item_upc AS dr FROM items ORDER BY item_name
ASC";
$r = @mysqli_query ($dbc, $q); // Run the query.

// Count the number of returned rows:
$num = mysqli_num_rows($r);
if ($num > 0) { // If it ran OK, display the records.
    // Print how many users there are:
    echo "<p>There are currently $num items in the online database.</p>\n";
    echo "<p>To search for an item or ISBN, please use CTRL + F.</p>\n";
    // Table header.
    echo '<table align="center" cellspacing="3" cellpadding="3" width="75%">
<tr><td align="left"><b>Item Name</b></td><td align="left"><b>Item
ISBN</b></td></tr>';
    // Fetch and print all the records:
    while ($row = mysqli_fetch_array($r, MYSQLI_ASSOC)) {
        echo '<tr><td align="left">' . $row['name'] . '</td><td align="left">' . $row['dr'] .
'</td></tr>';
        echo '</table>'; // Close the table.
        mysqli_free_result ($r); // Free up the resources.
    } else { // If no records were returned.

```

```

        echo '<p class="error">There are currently no checked items.</p>';}
mysqli_close($dbc); // Close the database connection.
include ('footer.php');
?>

```

checkout_redirect.php

```

<?php
session_start();
$page_title = 'Checked the book!';
include ('header.php');
echo "<h1>You have checked out!</h1>";
include ('footer.php');
?>

```

delete.php

```

<?php
include('header.php');
include('mysqli_connect.php');
if ($_SERVER['REQUEST_METHOD'] == 'POST') {
    $user_email = $_POST['email'];
    echo "User account has been deleted<br>";
    $query = "DELETE FROM users WHERE email = '$user_email'";
    $results = mysqli_query($dbc,$query);
    if ($results) {
        echo " ";
    } else {
        echo "There was an error" . mysqli_error($dbc);
    }
}
?>
<form action = "delete.php" method = "POST">
<fieldset>
    <legend>: Enter customer email address:</legend>
    Email Address: <br/>
    <input type = "text" name = "email" />
    <br><br>
    <input type = "submit" name = "submit" value = "Delete" />
</fieldset>
</form>
<?php include('footer.php'); ?>

```

login_functions.inc.php

```
<?php
function redirect_user ($page = 'index.php') {
    $url = 'http://' . $_SERVER['HTTP_HOST'] . dirname($_SERVER['PHP_SELF']);
    $url = rtrim($url, '\\');
    $url .= '/' . $page;
    header("Location: $url");
    exit();
}
function check_login($dbc, $email = "", $pass = "") {
    $errors = array();
    if (empty($email)) {
        $errors[] = 'You forgot to enter your email address.';
    } else {
        $e = mysqli_real_escape_string($dbc, trim($email));
    }
    if (empty($pass)) {
        $errors[] = 'You forgot to enter your password.';
    } else {
        $p = mysqli_real_escape_string($dbc, trim($pass));
    }
    if (empty($errors)) {
        $q = "SELECT * FROM users WHERE email='$e' AND pass=SHA2('$p',256)";
        $r = @mysqli_query ($dbc, $q); // Run the query.
        if (mysqli_num_rows($r) == 1) {
            $row = mysqli_fetch_array ($r, MYSQLI_ASSOC);
            return array(true, $row);
        } else {
            $errors[] = 'The email address and password entered do not match those
on file.';
        }
    }
    return array(false, $errors);}
}
```

logout.php

```
<?php
session_start();
if (!isset($_SESSION['user_id'])) {
    require ('login_functions.inc.php');
    redirect_user();
} else {
    $_SESSION = array();
    session_destroy();
    setcookie ('PHPSESSID', "", time()-3600, '/', "", 0, 0);
}
```

```

}
$page_title = 'Logged Out!';
include ('header.php');
echo "<h1>Logged Out!</h1>";
<p>You are now logged out!</p>";
include ('footer.php');
?>

```

view_users.php

```

<?php
$page_title = 'View the Current Users';
include ('header.php');
echo '<h1>Registered Users</h1>';
require ('mysqli_connect.php');
$q = "SELECT CONCAT(last_name, ' ', first_name) AS name, email AS em,
DATE_FORMAT(registration_date, '%M %d, %Y') AS dr FROM users ORDER BY
registration_date ASC";
$r = @mysqli_query ($dbc, $q);
$num = mysqli_num_rows($r);
if ($num > 0) {
    echo "<p>There are currently $num registered users.</p>\n";
    echo '<table align="center" cellspacing="3" cellpadding="3" width="75%">
    <tr><td align="left"><b>Name</b></td><td align="center"><b>Email</b></td><td
align="left"><b>Date Registered</b></td></tr>';
    while ($row = mysqli_fetch_array($r, MYSQLI_ASSOC)) {
        echo '<tr><td align="left">' . $row['name'] . '</td><td align="center">' . $row['em'] .
'</td><td align="left">' . $row['dr'] . '</td></tr>';
    }
    echo '</table>';
    mysqli_free_result ($r);
} else {
    echo '<p class="error">There are currently no registered users.</p>';
}
mysqli_close($dbc);
include ('footer.php');
?>

```

header.php

```

<?php
session_start();
error_reporting(E_ALL);

```

```
ini_set('display_errors', '1');
?>
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Guestbook</title>
    <meta name = "viewport" content = "width=device-width, initial-scale = 1">
    <link rel="stylesheet" href="style.css" type="text/css" media="screen" />
  </head>
  <body>
    <div class="header">
      
    </div>
    <div class="navbar" style="background-color:#000080;">
      <a href = "index.php">Homepage</a>
      <a href = "register.php">Add New Account</a>
      <?php
        if (isset($_SESSION['user_id']) && ($_SESSION['user_id'] == 6)) {
          echo '<a href = "view_users.php">Find Account</a>';
          echo '<a href = "checked_items.php">View Added Titles</a>';
          echo '<a href = "add_items.php">Add New Title</a>';
          echo '<a href = "admin_uncheck.php">Return Title</a>';
          echo '<a href = "delete.php">Delete Account</a>';
        }
        if (isset($_SESSION['user_id']) && ($_SESSION['user_id'] > 0)) {
          echo '<a href = "profile.php">Profile</a>';
          echo '<a href = "checkout.php">Checkout</a>';
        }
        if (isset($_SESSION['user_id']) && (basename($_SERVER['PHP_SELF']) !=
'logout.php')) {
          echo '<a href="logout.php" class="right">Logout</a>';}
        else{
          echo '<a href="login.php" class="right">Login</a>';}
      ?>
    </div>
```

footer.php

```
</div>
```

```
<div id="footer">
```

```
<center><p>Copyright &copy; <a href="#">InfoST-490 Senior Capstone</a> 2023 |
Designed by: <a href="https://www.linkedin.com/in/seth-kaderabek-768099276/"
target="_blank"><span class="hover-effect">Seth Kaderabek </span></a> | <a
href="http://www.binellidigital.com" target="_blank"><span class="hover-effect">Michael
Binelli</span></a> | <a href="" target="_blank"><span class="hover-effect">Damyan Michel
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class="hover-effect">UWM</span></a></p>
</div>
</body>
</html>
```