

SYD466V1A - Assignment 2

Public Library Booking System (FMO System)

Request for Proposal (RFP)

Version 1.0.0

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TABLE OF CONTENTS

1. PROJECT BUDGET2

2. TIMELINE.....3

3. GANTT CHART..... 3

4. HIGH-LEVEL SYSTEM DESIGN.....4

5. RISK ANALYSIS REPORT 5

6. REQUEST FOR PROPOSAL (RFP).....6

7. VENDOR SELECTION MATRIX..... 7

1. PROJECT BUDGET

Total Estimated Budget: \$175,000

Budget Breakdown:

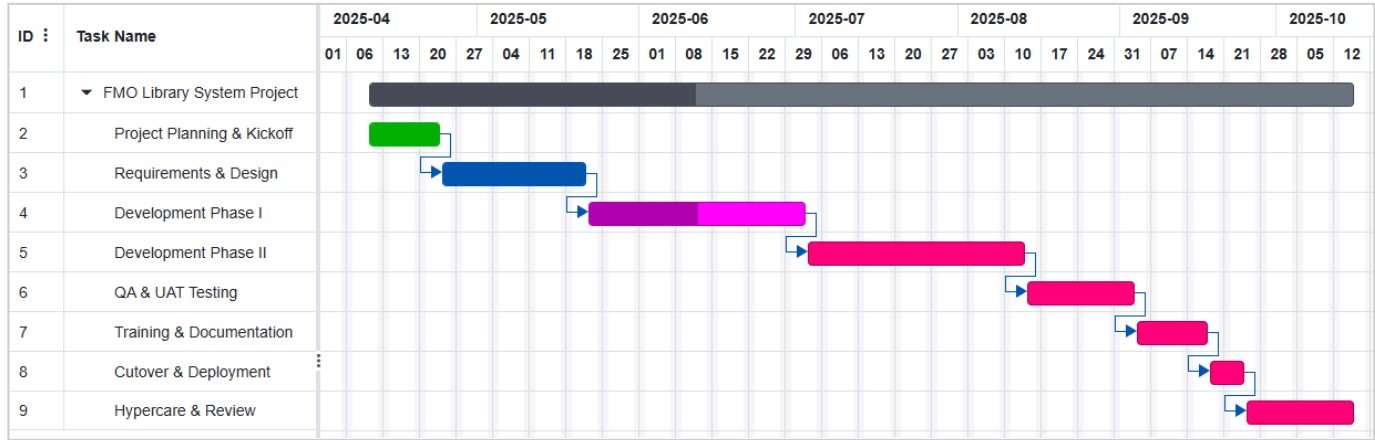
Category	Cost Estimate	Type	Notes
Software Development	\$100,000	One-time	Backend, frontend, database implementation
Quality Assurance (QA)	\$10,000	One-time	Automated and manual testing
UI/UX Design	\$10,000	One-time	Accessibility, responsive design
Project Management	\$25,000	One-time	Milestone oversight and change control
Cloud Hosting (AWS, Year 1)	\$5,000	Recurring	EC2, RDS, S3 infrastructure
Hardware	\$5,000	One-time	Minimal hardware procurement
Software Licenses	\$5,000	One-time	Any required software licenses or library dependencies
Contingency Buffer (10%)	\$15,000	One-time	Covers overruns, inflation, and change requests

2. TIMELINE

Total Project Duration: approx. 7 months (April 10 – November 1)

Phase	Start Date	End Date	Duration	Key Deliverables
Project Planning & Kickoff	April 10, 2025	April 24, 2025	2 weeks	Team assignment, risk & scope validation
Requirements & Design	April 25, 2025	May 23, 2025	4 weeks	UX wireframes, use cases, ER diagrams
Development Phase I	May 24, 2025	July 5, 2025	6 weeks	Core system modules, API integration
Development Phase II	July 6, 2025	August 16, 2025	6 weeks	Reporting, security, inter-library logic
QA & UAT Testing	August 17, 2025	September 6, 2025	3 weeks	Unit tests, integration tests, UAT
Training & Documentation	September 7, 2025	September 21, 2025	2 weeks	Staff sessions, user manuals
Cutover & Deployment	October 1, 2025	October 7, 2025	1 week	Cloud migration, production launch
Hypercare & Review	October 8, 2025	November 1, 2025	3 weeks	Monitoring, change log, postmortem

3. GANTT CHART



4. HIGH-LEVEL SYSTEM DESIGN

The system follows a three-tier cloud-based architecture:

1. Presentation Layer (Frontend):

- a) Built with React.js for responsive web and mobile access
- b) Role-based dashboards for patrons, staff, and administrators
- c) Accessible UI/UX design with WCAG compliance

2. Application Layer (Backend)

- a) Node.js RESTful API with Express framework
- b) Handles authentication, fine calculation, book checkouts/returns, and inter-library routing logic
- c) Enforces business rules and integrates with third-party services

3. Data Layer (Database)

- a) MongoDB Atlas for scalable cloud-based storage
- b) Collections: Users, Books, Loans, Fines, Activity Logs
- c) Encryption and access control

4. Integrated Services:

- a) Stripe (payments)
- b) Google Books API (metadata).
- c) AWS S3 (image hosting)

5. User Roles:

- a) **Client**- View/search catalog, reserve/return books, pay fines
- b) **Staff** - Manage checkouts, review activity logs, assist members
- c) **Admin** - Full CRUD access, inter-branch loan management, reporting

6. Core Modules:

- a) **Authentication** - Login, registration
- b) **Book Catalog** - Availability, metadata
- c) **Checkout** - Barcode based status updates
- d) **Payments** - Automatic notifications, online payments
- e) **Interlibrary Exchange** - Exchange with other libraries
- f) **Reports** - Real-time reports on users, fines, and inventory

5. RISK ANALYSIS REPORT

The table below outlines key risks that could affect the success of the library system project. Each risk includes its likelihood, impact, and the steps planned to reduce or respond to it if it happens.

Risk	Likelihood	Impact	Mitigation & Contingency Plan
Data Migration Issues	Medium	High	Test data transfers early and clean up old data. Keep backups and run both systems together briefly.
System Downtime or Performance Problems	Low	High	Run performance tests and use cloud scaling. Have technical support ready and prepare a rollback plan.
Vendor Delays	Medium	Medium	Add time buffers in the schedule. Use contracts with deadlines and penalties. Have a backup plan.
Resistance to Change	High	Medium	Train staff early and show system benefits. Offer support after launch and update the system as needed.
Security or Privacy Issues	Low	High	Use encryption, secure logins, and regular security checks. Have a plan to respond if a breach occurs.
Scope Creep / Requirements Changes	Medium	Medium	Lock down the project scope and approve any changes through a clear process. Use the contingency budget if needed.

6. REQUEST FOR PROPOSAL (RFP)

The library is looking for a vendor to help design and implement a modern online booking system. This system will replace outdated tools and improve how members borrow books, pay fines, and manage accounts across all branches. The new platform will use cloud hosting, support online payments, and offer reporting tools for staff and administrators.

Key Features Needed:

- Member and staff account management
- Central book catalog and search
- Borrowing, returns, and fine tracking
- Online fine payment
- Book holds and inter-branch transfers
- Reports for usage and inventory
- Admin tools for managing users and materials
- Data migration from the old system
- Training and user guides

Vendors must provide a complete system, including development, documentation, deployment, and post-launch support. Hardware upgrades and book digitization are not part of this contract.

Vendor Requirements:

- Experience building similar web systems (libraries)
- Knowledge of cloud hosting, security, and web technologies
- Ability to manage the project and meet deadlines
- Ongoing support plan after launch
- Proven team and company stability
- Compliance with data privacy and accessibility standards

Proposal Instructions:

- Include project plan, schedule, and technology approach
- Introduce your team and show similar work you've done
- List costs by phase (e.g., development, training)
- Describe support and warranty details
- Submit proposals in PDF format by **May 12, 2025** to **gnovello@myseneca.ca**

Proposals should be valid for 90 days. The winning vendor will be selected in early June and begin work shortly after.

How Proposals Will Be Evaluated:

- How well the system meets the project's goals
- Vendor's experience and team qualifications
- Project timeline and clarity
- Total cost and overall value
- Quality of support and maintenance offered
- Risk level and how well the proposal follows instructions

7. VENDOR SELECTION MATRIX

Criteria	Weight	Vendor A	Vendor B	Vendor C
Cost	30%	9	8	6
Technical Fit	25%	9	8	7
Experience & Expertise	25%	8	9	7
Support & Maintenance	20%	7	9	8
Total Score	100%	83.5	84.5	69.0

Each vendor is scored from 1 to 10 for each area. Scores are multiplied by the weight and added up. This makes it easier to compare options and choose the vendor that offers the best value and fit for the project.