Software Project Management – Project Description

Project Title:

LibraLite: Digital Library Management System for Springfield Public Library

Project Overview:

The Springfield Public Library is modernizing its services by developing **LibraLite**, a web-based application to manage its catalog and member services. This system will allow library members to browse the book catalog, manage their accounts, and reserve items online. For librarians, it will provide tools to manage inventory, process checkouts/returns, and oversee member registrations.

The application will consist of a public-facing member portal and a secure staff dashboard. The project is broken down into eight sub-projects, each delivering a core piece of functionality for the final integrated system.

Key Features and Sub-Project Breakdown:

1. Member Registration & Authentication System

- **Team:** Access Control Team
- **Key Features:**
    - **Online Member Application:** Allows residents to apply for a library card online by submitting their details.
    - **Secure Login:** Library card number and PIN-based authentication for members.
    - **Librarian Approval Workflow:** New applications are queued for librarian review and approval before activation.
- **Integration:**
    - Provides the member accounts used by every other sub-project.
    - Approval status is visible in the **Staff Dashboard (Sub-project 7)**.

2. Digital Library Catalog & Search Engine

- **Team:** Data Systems Team
- **Key Features:**
    - **Browse & Search Catalog:** Members can search for books, DVDs, and other materials by title, author, or genre.
    - **Item Details Page:** Displays key information like description, availability status, and location within the library.
    - **Simple Filtering:** Filter results by availability, format, or age rating.
- **Integration:**
    - Connects to the **Inventory Management (Sub-project 6)** backend for real-time availability data.
    - Provides the interface for placing **Reservations (Sub-project 3)**.

3. Item Reservation & Hold System

- **Team:** Logistics Team
- **Key Features:**

- ○ **Place a Hold:** Allows a member to reserve a currently checked-out item. They are placed in a queue and notified when it becomes available.
  - ○ **View My Reservations:** Members can see their active holds and their position in the queue.
  - ○ **Hold Shelf Management:** Triggers a process for librarians to pull the item and place it on the hold shelf upon return.
- **Integration:**
  - ○ Directly uses the **Catalog (Sub-project 2)** for item data and the **User Dashboard (Sub-project 4)** for user data.
  - ○ Sends notifications via the **Notification System (Sub-project 8)**.

4. User Personal Dashboard

- **Team:** UX Team
- **Key Features:**
  - ○ **Checked-Out Items:** View all items currently borrowed and their due dates.
  - ○ **Renew Items:** Allows members to renew items online (if no holds are placed on them).
  - ○ **Fines Overview:** Displays any outstanding late fees.
- **Integration:**
  - ○ Pulls data from the **Loan Management System (Sub-project 5)**.
  - ○ Links to the **Payment Gateway (Sub-project 6)** to pay fines.

5. Loan Management & Checkout System (Staff-Facing)

- **Team:** Core Operations Team
- **Key Features:**
  - ○ **Check-out/-in Process:** Librarians can scan items and a member card to process borrows and returns.
  - ○ **Due Date Calculator:** Automatically calculates due dates based on item type (e.g., 3 weeks for books, 1 week for DVDs).
  - ○ **Late Fee Calculator:** Automatically calculates fines for overdue items.
- **Integration:**
  - ○ The core transactional system. Updates **Inventory (Sub-project 6)** and **User Dashboard (Sub-project 4)** instantly.
  - ○ Generates fine data for the **Payment Gateway (Sub-project 6)**.

6. Inventory Management Module

- **Team:** Inventory Team
- **Key Features:**
  - ○ **Add/Remove Items:** Librarians can add new items to the catalog or mark items as lost/discarded.
  - ○ **Availability Status:** Maintains a real-time status (Available, Checked-Out, On-Hold) for every item.

- ○ **Barcode Association:** Links physical items to their digital records in the system.
- ● **Integration:**
  - ○ Provides the single source of truth for item data to the **Catalog (Sub-project 2)** and **Loan System (Sub-project 5)**.

7. Staff Administration Dashboard
- ● **Team:** Admin Team
- ● **Key Features:**
  - ○ **Member Management:** View all members, approve new applications, and manage accounts.
  - ○ **Overdue Items Report:** Generate a list of all overdue items and the members who have them.
  - ○ **System Overview:** View key metrics like total checkouts today, popular items, and new registrations.
- ● **Integration:**
  - ○ **The central hub for librarians.** It provides a interface to manage and view data from all other sub-projects (1-6 and 8).

8. Notification System
- ● **Team:** Comms Team
- ● **Key Features:**
  - ○ **Email Notifications:** Automated emails for hold availability, upcoming due date reminders, and overdue alerts.
  - ○ **Pre-Due Alert:** Sends a reminder email 2 days before an item is due.
- ● **Integration:**
  - ○ A service used by multiple teams:
    - ■ **Loan System (5)** triggers due date and overdue alerts.
    - ■ **Reservation System (3)** triggers hold availability notifications.

9. Digital Content & E-Book Lending Platform
- ● **Team:** Digital Services Team
- ● **Key Features:**
  - ○ **E-Book Catalog:** Integration with a provider (like Overdrive) or a managed collection of DRM-protected PDFs/ePubs.
  - ○ **Borrow & Download:** Members can "check out" a digital book for a pre-defined loan period, after which it becomes inaccessible.
  - ○ **Reading List:** Allows members to save digital and physical books to a "For Later" list.
- ● **Integration:**
  - ○ **Tightly integrated with the core:** Digital items must appear seamlessly in the main **Catalog (Sub-project 2)** alongside physical books.

- ○ The **Loan Management System (Sub-project 5)** must be extended to handle digital checkout rules and automatic "returns."
- ○ The **User Dashboard (Sub-project 4)** must display checked-out digital items and their expiration countdown.

Timeline and Sub-Project Phases:
- **Week 1-2:** Project Planning & Team Setup
- **Week 3-4:** Requirements Gathering & System Design
- **Week 5-8:** Core Development (Sprints for each sub-project)
- **Week 9:** Integration & Testing Week
- **Week 10:** Final Demo, Presentation, and Submission

Evaluation:
- **Project Planning & Management (40%):** Quality of the project plan, timeline (Gantt chart), risk assessment, and team coordination.
- **Sub-project Functionality (30%):** Each sub-project is demoed and graded on whether it meets its core requirements.
- **Integration and Usability (10%):** How well the sub-projects work together as one system. Is the user journey smooth?
- **Documentation & Final Presentation (20%):** Quality of technical documentation, user manuals, and the final team presentation.