Library Media Catalog System

System Architecture and System Design

Architectural Styles:

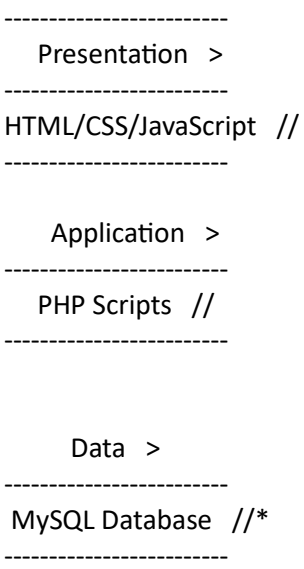
The proposed system architecture follows a layered architecture style. It's divided into three layers: Presentation Layer, Application Layer, and Data Layer.

- **Presentation Layer:** This layer is responsible for handling user interactions and presenting information to users. It consists of the user interface components developed using HTML, CSS, and JavaScript.

- **Application Layer:** This layer contains the business logic of the system. It includes the PHP scripts that interact with the database management system (MySQL) to perform various operations such as user authentication, media checkout, return, reservation, etc.

- **Data Layer:** This layer deals with data storage and management. It comprises the MySQL database where all information related to media items, user accounts, reservations, etc., are stored.

Identifying Subsystems:



Persistent Data Storage:

The system requires persistent data storage to store information beyond a single execution. Persistent objects include user accounts, media items, reservations, checkout history, etc. The selected storage management strategy is a relational database (MySQL) due to its structured nature and ability to handle complex queries efficiently.

Global Control Flow

Execution Orders:

The system is event-driven, where users can generate actions in different orders based on their needs and interactions with the system. For example, users can log in, browse media, checkout items, and view checkout history in any order they prefer.

Time Dependency:

The system is not real-time dependent. It responds to user actions/events without specific time constraints. There are no timers or periodic tasks within the system.

Hardware Requirements:

The system depends on standard hardware resources such as:

- PC or server infrastructure for hosting the web application and database
- Secure sockets layer (SSL) certificate for data encryption
- High-speed internet connectivity for seamless user experience
- Color display with a minimum resolution of 640 × 480 pixels for presenting the user interface
- Adequate storage space for hosting the application and database files
- Minimum network bandwidth of 28 Kbps for smooth data transmission