

DESIGN DOCUMENT

SYSTEM:

Library Management System is designed as a single page application (SPA) website.

SYSTEM ARCHITECTURE:

The system is built around three tier architecture (Client, Web server and Database server) that has following configuration:

1. Client:

- AngularJS is used as the primary framework for building GUI.
- 'ui.router' module is used for routing AngularJS application pages.
- Angular-UI-Bootstrap module: Bootstrap (styling framework) components written in pure AngularJS. It has bootstrap CSS library, 'angular-animate' and 'angular-touch' modules as its dependencies.
- jQuery library is used for simplifying JavaScript functionalities.
- 'angular-block-ui' module is used for emulating loading screen while waiting for an API response from backend.

2. Web Server:

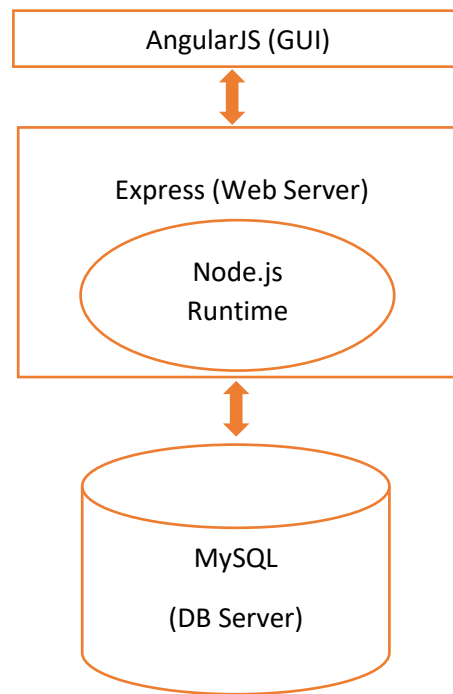
- Express is used as the framework to start a web server and host the angular application.
- It also provides a myriad of HTTP utility methods and middleware to create API's.
- Express is a minimalist web framework for Node.js.
- Node.js is a JavaScript runtime built on Chrome's V8 JavaScript engine.

3. Database Server:

- MySQL 5.7 server is used as the database.
- 'mysql' module is used to connect the web server to the database server.
- 'fast-csv' module is used to parse CSVs and populate the data into database.

Note: Frameworks, modules and libraries listed above are installed using Node.js's npm utility (except MySQL server and Node.js itself).

System Architecture Diagram:



Database schema design:

