**SYSTEM ARCHITECTURE**

# Introduction

## Document overview

This document provides the architecture of Library Management System.

It provides a Library management system that can be accessed by any librarian to

* Search for any Book given any part or full
* ISBN number of the book
* Title of the Book
* Author of the Book
* Check out any book given ISBN number of the book, the Branch Id and Card number of the borrower
* Check in any book given the card number of the borrower
* Create a new borrower account by giving the SSN, full name, Address, and phone number of the person.
* Update the Fines table to calculate the fine on books borrowed and past its due date.
* Display the record of previous borrowed books along with their fine and status of the fine ie either paid or not.
* A Home page exists from where we can navigate to any of the above options. Each option has its own home page which can be accessed by pressing the desired options.
* The software runs over any desktop application that has the necessary database attached to it.
* Updates are made to the database as per the requirements of the system design.

# Architecture

## Architecture overview

The System can perform all the above mentioned tasks which are required by a librarian to be performed.

* It is intended to be used by a library administrator or librarian for short.
* The system helps in providing a mechanism to maintain records of books, their borrowers and the intended fine, if any on the borrowers in a database and provide consistency with physically recorded activities.

The main functions provided are:

* Search for any book
* Check out a given book
* Check in the borrowed book
* Create a new borrower recorded
* Calculate and charge fine on late returned books by the borrowers.

**Dynamic Behavior of architecture**

**Work Flow/Sequence**

* Search for any Book

Performs search for a book given any combination of book's ISBN number, author's name or name of the book. It also takes input any substring of any given input and retrieves all the records that match that substring.

* Check Out any book

Allows borrower to borrow any book given as input the book's ISBN number, the Branch id and card number of the borrower. This input is required to match exactly for book to be checked out.

* Check In borrowed book

Accept the book returned given any one or all of card number of the borrower, ISBN number of the book or borrower name. It calculates and charges fine if the book is returned beyond the due date.

* Create a new Borrower

Creates a new borrower given the persons SSN number, full name, address, phone number.

* Update and Display Fine

This updates the fines table containing the information on fine on each person either previous or at present or both.

It also displays the information in the table.