**INTRODUCTION**

Library management systems are designed to manage the movement of books and maintain records of the members in a library. The software solution is designed based on the system requirements, the people involved, the content of the operation and the activity to be performed.  
  
The system requirement in library management focuses on the possibility of search for books by title, author or subject by the member. They should be able to locate a book physically by the unique identification code and the rack number for each book. The system should provide details on the books held by the members. The system should limit the number of books that can be taken and the number of days that a book can be kept for. The system should generate fines when due from the member.

The next step focuses on the functions of the librarian, the member and the system. Managing books by the librarian, searching for books by the members and notifications sent by the system are detailed in a case diagram.  
  
The third step in the design of the library management system software is based on the different aspects of a library. The name of the library, the book details, member details, membership cards, book reservations, book lending, cataloging, fines, book racks and notifications are consolidated as a class diagram.  
  
The next step further breaks down the functions into specific activities that are performed in a library. An activity diagram based on the primary activities – checking out a book, returning a book and renewing a book – is drawn.  
  
The final stage is coding for each activity in the case, class and activity diagrams. This is the most important function in the design of the library management system software.  
  
Library management system gitHub, the software created using Python, stores data on a log file. The software systems are developed on this platform.

**WHAT SYSTEM DOES A LIBRARY USE?**

The library management system software should be user-friendly and cost effective. It should be in tune with the establishment’s needs and compatible with the existing technology.  
  
  
A library should use a software system that helps in effectively managing the data in a library. The library database includes all relevant information regarding assets to membership details. The software records details on all reading and reference material available for reading and lending. Membership information, lending details and renewal dates are managed by the software.  
  
  
A library management system software with capabilities of barcoding and RFID helps in scanning the barcode while lending or returning books. Management of the catalogue and inventory by the system makes the process accountable.  
  
  
The feature of the software assists in inventory and [circulation management](https://en.wikipedia.org/wiki/Library_circulation) of the books. Books in stock, on the shelves, in circulation, missing or to be ordered can be tracked by the system. Acquiring new assets becomes easier with the software.