



LIBRARY

MANAGEMENT SYSTEM

SUBMITTED TO
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1.Executive Summary:

The modern business world has been irreversibly shaped by technology, and for good reason. Many long-standing problems in schools', colleges and universities can be solved with right software or application. It's not enough to simply use pre-existing solutions. LMS is built on latest technologies and standards, and based on school and colleges. It is user friendly and incredibly easy to use and as simple as you want. It tracks the records of the number of books in the library, how many books are issued, or how many books have been returned or renewed or late fine charges, etc. You can find books in an instant, issue/reissue books quickly, and manage all the data efficiently and orderly using this system. The purpose of a library management system is to provide instant and accurate data regarding any type of book, thereby saving a lot of time and effort. The library software is user-friendly, intuitive, and easy-to- use. Provides greater efficiency of work processes & saves time of librarian. It offers 24*7 access to library resources. Faster scanning and identification of book details. Automation of data collection minimizes human errors. New features can be added as per requirement.

Create (Front module of LBMS within a week)

After a thorough but efficient preparation period, our team will create the first module of the LBMS within a week. We will build this with a focus on the records of the number of books in the library, to provide instant and accurate data regarding any type of book, students able to pre-hold book of what they want.

Develop

Through clear communication and regular meetings with your planning team, we will develop 24*7 Librarian active facilities, QR code for scanning book for record and renew the book.

Final

We will achieve all the goals that we have promised to you. We mentioned above what types of modules have been made and we upgrade the tools as per the requirement. As a result, our team members will complete this project in time what we have promised.

2. Objectives:

The main objective of the Library Management System is to manage the details of

- i. Search of availability books
- ii. Issues dates of books
- iii. Books return date
- iv. Student details

It manages all the information about Address, Librarian and Student. The project is totally built at administrative end and thus only the administrator is guaranteed the access.

3. Scope:

The Library Management System is an application for assisting a librarian in managing a book library in a school, colleges and university. The system would provide basic set of features to add/update members, add/update books, and manage check in specifications for the systems based on the client's statement of need.

4.Features:

- **Catalogue management:**

To digitally keep track of what is available in the library. The books will be catalogued by title, subject, author and date of publishing.

- **Membership management:**

To maintain a detailed database of the members. The system records the name, ID and password of each user. The system helps in ascertaining the track record of the member.

- **Circulation management:**

To track the movement of books. The location of any book at any point of time can be tracked. Misplaced or missing books can be traced with ease. The details on books to be returned and that which are overdue for return are provided on a daily basis.

- **Acquisition management:**

To acquire new books and add them digitally. Irrelevant and outdated books are deleted.

- **Search function:**

To enable both the librarian and the members to search the catalogue of books in the library. The search functions can be filtered to the need of each user.

5. Development Methodology

For this project, we have followed our standard development model for development. A brief overview of the waterfall model SDLC phases is as follows below:

5.1 Requirement Analysis

Our team, in consultation with the customer, studies the complete system in-depth as per the requirements of the user in the real entity. The project document will be created simultaneously with the coding part containing the algorithm, flowchart, scope objectives etc.

5.2 System Design

In this phase we designed the algorithm and flowchart required for the development of the system. System design is the process of designing the architecture, components, and interfaces for a system so that it meets the end-user requirements. A good system design is to organize the program modules in such a way that are easy to develop and change.

There are many strategies or techniques for performing system design.

5.2.1 Importance:

- o If any pre-existing code need to be understood, organized, and pieced together.
- o It is common for the project team to have to write some code and produce original programs that support the application logic of the system.

There are many strategies or techniques for performing system design.

- **Top-down approach:**

Top-down integration testing an integration testing technique used in order to stimulate the behavior of the lower-level modules that are not yet integrated. Each system is divided into several subsystems and components. Each of the subsystems is further divided into a set of subsystems and components.

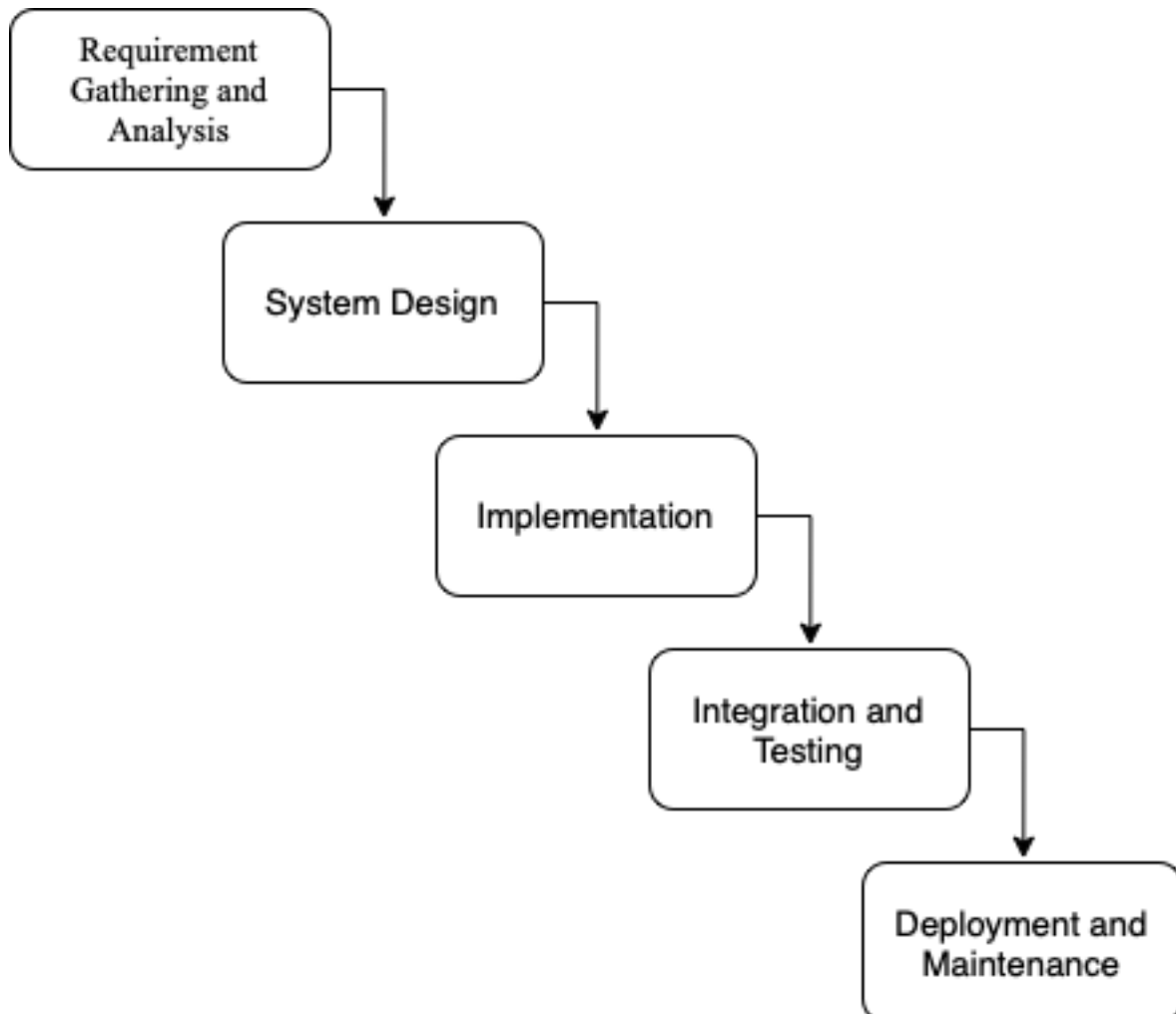
- **Advantages of top-down approach:**

- o The main advantage of the top-down approach is that its strong focus on requirements helps to make a design responsive according to its requirements.

5.3 WATERFALL MODEL

The waterfall model is a classical model used in system development life cycle to create a system with linear and sequential approach. It is termed as waterfall because the model develops systematically from one phase to another in a downward fashion. This model is divided into different phase and the output of one phase is used as the input of the next phase starts and there is no overlapping of the phase.

The sequential phases described in the Waterfall model are:



5.4 Implementation

It is the process of using the project in client's computer. After the executive file has been created, this project can be copied from saved source to any secondary storage device and pasted to the required system. The project can be operated by opening it, completely replacing the existing manual system.

5.5 Integration and testing

Testing in a project development is a very important task to find out the possible mistakes made by the developers. The system cannot give the correct output until the project contains no errors at all. This project has checked the possible errors by using the following approaches:

1. Black Box Testing Approach: This approach concentrates on the basic requirements of the project. It simply checks direct matching of records of particular book, after we select a book no of a particular student.
2. White Box Testing Approach: This approach concentrates on the actual codes written during the development of the project. It checks every line of codes in all the functions of the program. This project has fully tested by using both approach's and ensures the correct output

5.6 Development and Maintenance

When time changes, the requirements of the organization also changes and this project can no longer fulfill its requirements. The changes are necessary to keep the project running and useful to college. Maintenance may be required when the college changes its requirements.

6. Tools and Technology Used:

- **Visual Studio Code:** -

Microsoft Visual Studio is a powerful IDE that ensures quality code throughout the entire application lifecycle, from design to deployment. Whether you're developing applications for SharePoint, the web, Windows, Windows Phone, and beyond, Visual Studio is your ultimate all-in-one solution.

- **Dev C++:** -

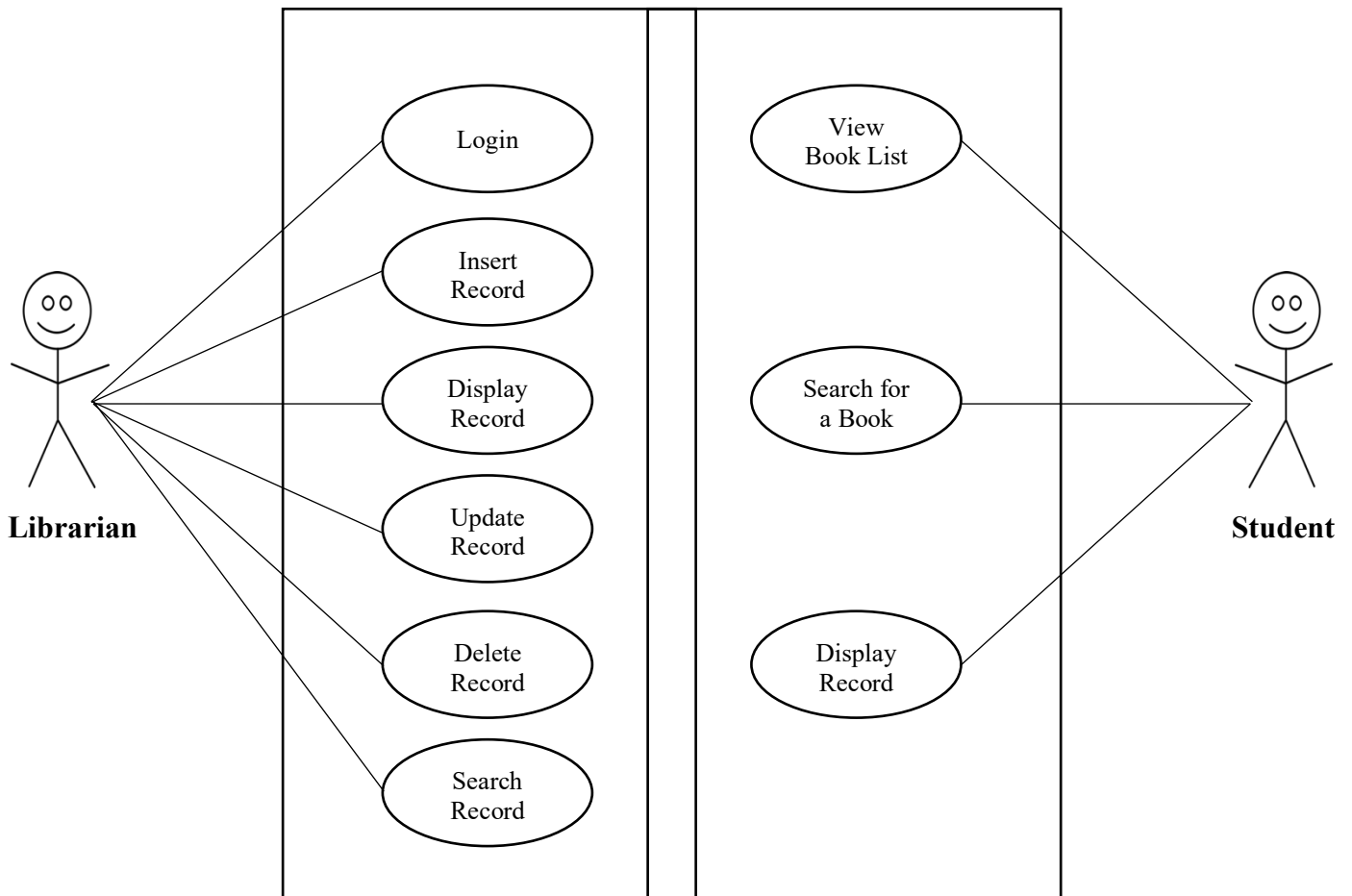
Dev-C++ is a full-featured IDE for Win32. It uses GCC, Mingw or Cygwin as compiler and libraries set.

Technology:

- **C ++ Programming:** - C++ is a general-purpose programming language that was developed as an enhancement of the C++ language to include object-oriented paradigm. It is an imperative and a compiled language. C++ is a middle-level language rendering it the advantage of programming low-level and even higher-level applications (games, GUI, desktop apps etc.). The basic syntax and code structure of both C and C++ are the same.

7. Software Development Life Cycle:

As we know, Software Development Life Cycle (SDLC) is a systematic process for building software that ensures the quality and correctness of the software built; we have listed out some of the main project and explained below: -



7.1 Requirement Analysis

In software and system engineering, a functional requirement defines a function of a system or its component, where a function is described as a specification of behavior between input and outputs.