# LIBRARY

## MANAGEMENT SYSTEM


**SUBMITTED TO**
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**SUBMITTED BY**
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# KIST COLLEGE OF INFORMATION AND TECHNOLOGY

**KAMALPOKHARI, KATHMANDU NEPAL**

## CERTIFICATE

This is to certify that the project work entitled **"LIBRARY MANAGEMENT SYTEM"** is carried out by **ANJAN SHRESTHA (5418), PUKAR TIWARI (5429), SANDIP SHRESTHA (5437),** bona fide students of **KIST COLLEGE OF INFORMATION AND TECHNOLOGY** in partial fulfillment for the award of **BACHELOR IN INFORMATION AND TECHNOLOGY** of the **PURBANCHAL UNIVERSITY, BIRATNAGAR NEPAL**, during the year **2020-2021**. It is certified that all corrections indicated for internal assessment have been incorporated in the report submitted in the department library. The project report has been approved, as it satisfied the academic requirements in respect of the project work prescribed for the said degree.

The details of the students are as follows: -

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Course Semester: - 2nd Semester
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Subject Code: - BIT (156CO)

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# KIST COLLEGE OF INFORMATION AND TECHNOLOGY KAMALPOKHARI, KATHMANDU

**Examiner's Certification**

The Project Proposal
On
**"LIBRARY MANAGEMENT SYSTEM"**

**Developed by**

**Anjan Shrestha**
**Pukar Tiwari**
**Sandip Shrestha**

Is approved and is acceptable in qualify form.

| | |
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| **Internal Examiner** | **External Examiner** |
| Name: | Name: |
| Designation: | Designation: |

# Table of Contents

# 1 EXECUTIVE SUMMARY

The LMS has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and, in some case, reduce the hardships faced by this existing system. Moreover, this system is designed for the particular need of the library departments to carry out operations in a smooth and effective manner.

The modern business world has been irreversible 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. Automation of data collection minimizes human errors.

## 2 OBJECTIVES

The main objectives behind the development of this project are as follows:

- To utilize the information of Books.
- To store and retrieve books items.
- To manage the particular records of student.
- To provide the details of issue books.

Thus, there are a number of objectives behind developing the "LIBRARY MANAGEMENT SYSTEM" and it reduces a lot of manuals working of the department.

## 3 SCOPE

The scope of this project is as follows:

- To assist the staff in capturing the effort spent on their respective working areas.
- To utilize resources in an efficient manner by increasing their productivity through automation.
- The system generates types of information that can be used for various purposes.

Thus, there are information scopes behind developing the "LIBRARY MANAGEMENT SYSTEM" and it reduces a lot of burden of the entry.

## 4 ADVANTAGES

The library management system is designed to contribute well management of library functions. It offers ease to perform day to day library operations electronically. This practice being many advantages like:

- Simple and easy to operate
- Saves time and reduces overheads
- Remove manual processes to issue books and maintain records
- Increase librarian's efficiencies
- Increase accuracy

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# 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.

## 5.3 Importance

- If any pre-existing code need to be understood, organized, and pieced together
- 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:

- 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.

## 5.4 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:

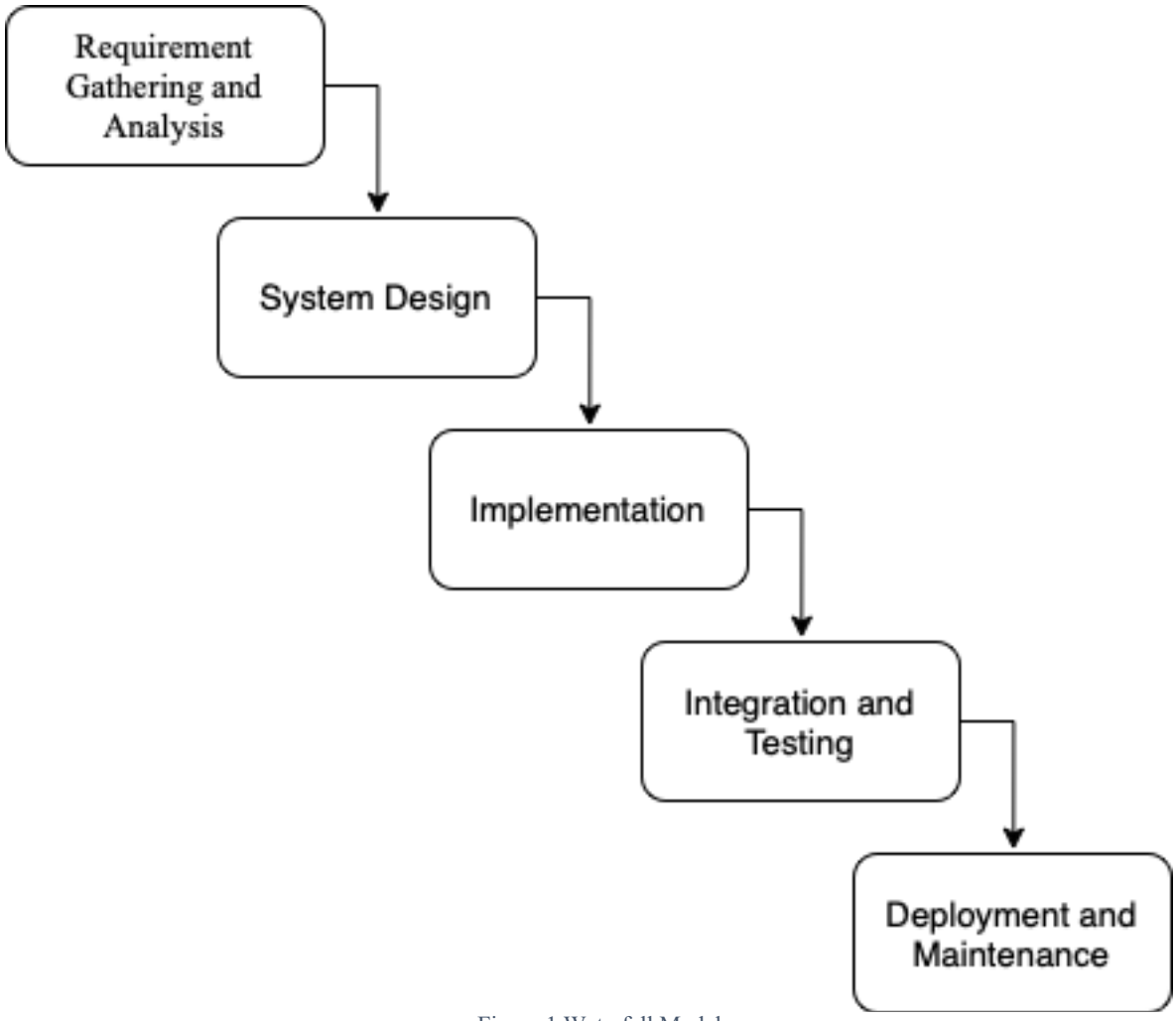


Figure 1 Waterfall Model

## 5.5 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.

## 5.6 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:

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.

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

## 5.7 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: -

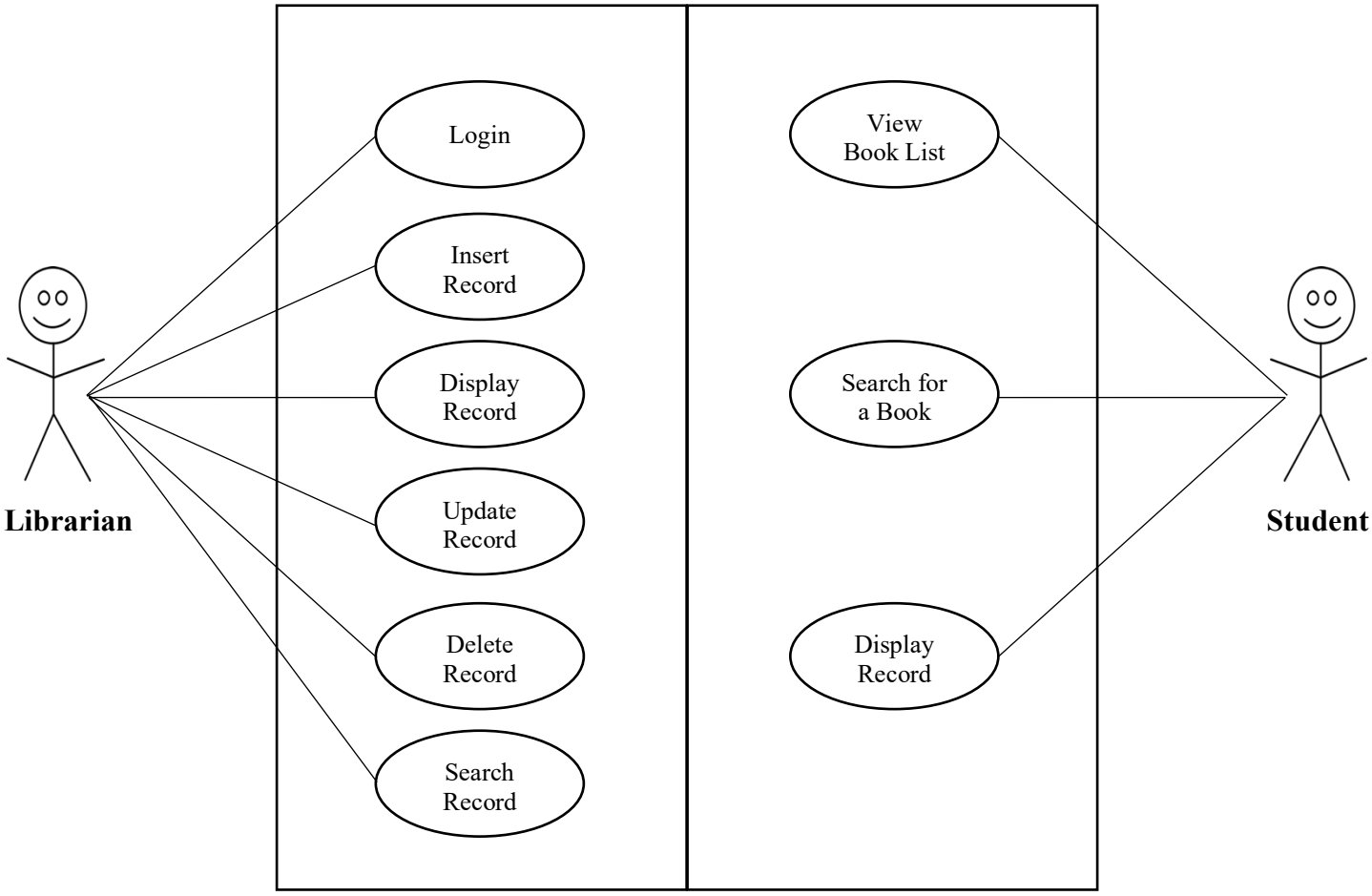


*Figure 2 Use Case Diagram*

## 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 if behavior between input and outputs.

# 8 CONCLUSION & FUTURE SCOPE

## Conclusion:

Our project is only a humble venture to satisfy the needs to manage the project work. Several user-friendly coding has also adopted. This package shall prove to be a powerful package in satisfying all the requirements of the school and college. The objective of software planning is to provide a frame work that enables the librarian to keep the record of the book within a limited time.

Our project provides a computerized version of library management system which will be beneficial for the students as well as the staff of the library.
It makes entire process easy where student can search books, staff can generate reports and do book transactions. It also has a facility for login where library staff can login and can see status of books issued.

## Future Scope:

There is a future scope of the project with addition to the facilities as follows:-

1. We can provide online facilities for ordering and searching the availability of books.
2. We can add login page for individual students.
3. User interfaced can be made attractive.