# LIBRARY MANAGEMENT SYSTEM

* **GENERAL DESCRIPTION :**

Library Management System is computerized system which helps staffs (librarian) to manage the library daily activity in electronic format. It reduces the paperwork such as file lost, file damaged and time consuming. It can help staff to manage the transaction or record more effectively and take less time .

* **PROBLEM STATEMENT :**

The problem occurred before having computerized system includes :

**1. File Lost:**

When computerized system is not implemented file is always lost because of human environment. Sometimes due to some human error there may be a loss of records.

**2. File Damaged:**

When computerized system is not there file is always lost due to some accident like spilling of water by some member on file accidentally. Besides some natural disaster like floods or fires may also damage files.

**3. Difficult To Search Records :**

When there is no computerized system there is always a difficulty in searching of records if the records are large in number.

**4. Space Consuming :**

After the number of records become large the space for physical storage of file and records also increases if no computerized system is implemented.

**5. Cost Consuming :**

As there is no computerized system to add, each record paper will be needed which will increase the cost of management of library.

* **SYSTEM ANALYSIS AND REQUIREMENTS:**

**>> NON FUNCTIONAL REQUIREMENTS**

**Product Requirements**

**1. EFFICIENCY REQUIREMENT :**

When a library Management system will be implemented librarian and user will easily access library as searching and book transaction will be very faster.

**2. RELIABILITY REQUIREMENT :**

The system should accurately performs member registration, member validation , report generation, book transaction and search.

**3. USABILITY REQUIREMENT :**

The system is designed for a user friendly environment so that student and staff of library can perform the various tasks easily and in an effective way.

**>> FUNCTIONAL REQUIREMENTS**

**1. NORMAL USER**

**i) USER LOGIN**

**>> Description of feature :**

This feature used by the user to login into the system. They are required to enter user id and Password before they are allowed to enter the system .Every member has different id and password.

The user id and password will be verified and if invalid id is there member is not allowed to enter the system.

**>> Functional requirements**

-user id is provided when they register

-The system must only allow user with valid id and password to enter the system

-The system performs authorization process which decides What user level can access to.

-The user must be able to logout after they finished using system.

**ii) REGISTER NEW USER**

**>> Description of feature**

This feature can be performed by all users to register new user to Create account.

**>> Functional requirements**

-System must be able to verify information

-System must be able to delete information if information is wrong

**iii) REGISTER NEW BOOK**

**>> Description of feature :**

This feature allows to add new books to the library

**>> Functional requirements**

-System must be able to verify information

-System must be able to enter number of copies into table.

- System must be able to not allow two books having same book id.

**iv) SEARCH BOOK**

**>> Description of feature :**

This feature is found in book Maintenance part. We can search book based on book id, book name,

Publication or by author name,

**>> Functional requirements**

- System must be able to search the database based on select search type

- System must be able to filter book based on keyword enterd

- System must be able to show the filtered book in table view

-System should be able to add detailed information about events

* **SOFTWARE AND HARDWARE ANALYSYS AND REQUIREMENTS:**

**SOFTWARE :**

>> Any Operating system for we browse interface.

>> Database MYSQL-MYSQL is used as database as it easy to maintain and retrieve records by simple queries which are in English language which are easy to understand and easy to write.

**HARDWARE :**

>> Atleast 1GB storage on the server side.

>> Internet connection on both reader and server side.

* **DATA COLLECTION:**

1. **Books**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **BookID** | **Title** | **Author** | **Book\_Status** | **Price** |
| B00001 | PROGRAMMING WITH JAVA | E BALAGURUSAMY | Available | 100 |
| B00002 | DATABASE MANAGEMENT SYSTEM | RAJIV CHOPRA | Available | 300 |
| B00003 | PYTHON PROGRAMMING FOR BEGINNERS | ANTHONY ADAMS | Available | 700 |
| B00004 | OPERATING SYSTEMS | WILLIAM STALLINGS | Not Available | 400 |
| B00005 | DATA STRUCTURES USING C | REEMA THAREJA | Available | 200 |

1. **Member**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **MembID** | **Name** | **Contact\_No.** | **Address** | **Memb\_Type** | **Memb\_Date** | **Expiry\_Date** |
| M00001 | Arjun Kapoor | 6778767564 | Alipore,Kolkata | Student | 2021-05-01 | 2026-04-30 |
| M00002 | Ishani Dutta | 9387827966 | Behala,Kolkata | Staff | 2020-08-01 | 2025-07-30 |
| M00003 | Kabir Singh | 8136976445 | Dhakuria,Kolkata | Teacher | 2018-10-01 | 2023-09-30 |
| M00004 | Ananya Pandey | 9855465765 | Jadavpur,Kolkata | Student | 2022-05-01 | 2027-04-30 |

1. **Borrowed by**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MembID** | **BookID** | **Issue\_Date** | **Due\_Date** | **Return\_Date** |
| M00001 | B00004 | 2023-03-12 | 2023-04-10 | 2023-04-12 |
| M00003 | B00002 | 2023-03-15 | 2023-04-15 | 2023-04-05 |
| M00004 | B00001 | 2023-02-24 | 2023-03-24 | 2023-03-28 |

1. **Publisher**

|  |  |  |  |
| --- | --- | --- | --- |
| **PubID** | **Name** | **Contact\_No.** | **Address** |
| P00001 | Mc Graw Hill | 6869875744 | Gariahat, Kolkata |
| P00002 | Pearson | 7834512879 | Dumdum, Kolkata |
| P00003 | OXFORD | 7812434509 | Park Street, Kolkata |
| P00004 | WILEY | 9823451289 | Ballygunge, Kolkata |

1. **Published by**

|  |  |
| --- | --- |
| **BookID** | **PubID** |
| B00001 | P00001 |
| B00002 | P00003 |
| B00005 | P00002 |

1. **Staff**

|  |  |  |  |
| --- | --- | --- | --- |
| **StaffID** | **Name** | **Contact\_no** | **Address** |
| S00001 | Aayan Kundu | 7346015361 | Tollygunge, Kolkata |
| S00002 | Ishita Dutta | 9572534269 | New Alipore, Kolkata |
| S00003 | Ananya Pandey | 9855465765 | Behala, Kolkata |
| S00004 | Jay Mahato | 9823451289 | Ballygunge, Kolkata |

1. **Issue/Receive**

|  |  |
| --- | --- |
| **StaffID** | **BookID** |
| S00002 | B00004 |
| S00001 | B00002 |
| S00004 | B00001 |

1. **Send/Requests**

|  |  |
| --- | --- |
| **StaffID** | **MembID** |
| S00002 | M00001 |
| S00001 | M00003 |
| S00004 | M00004 |

* **E-R DIAGRAM:**

