Library Management System Activity Diagram (Https://www.freeprojectz.com/uml-diagram/library-management-system-activity-diagram)

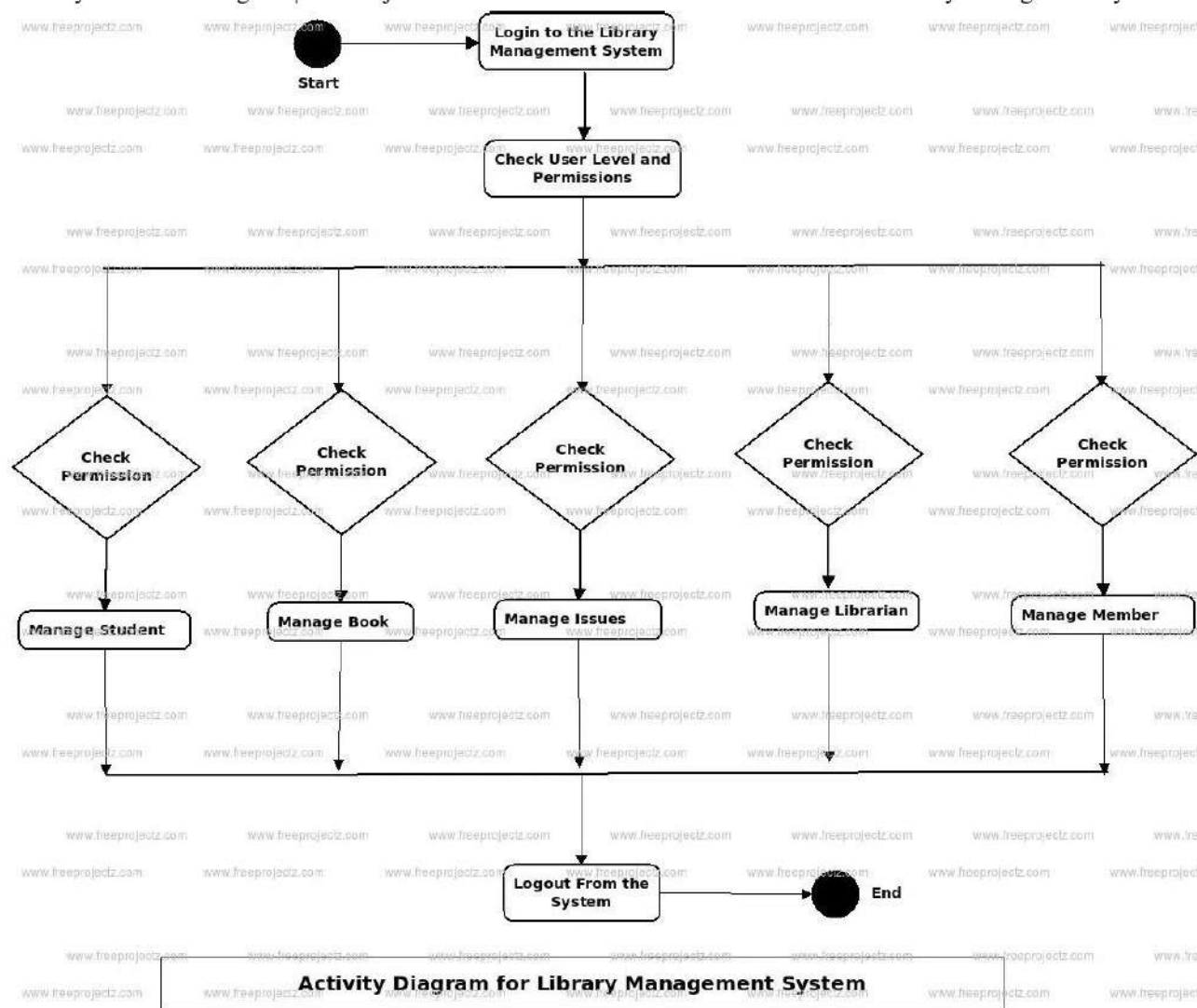This is the **Activity UML diagram of Library Management System** which shows the flows between the activity of Librarian, Student, Issues, Books, Address. The main activity involved in this **UML Activity Diagram of Library Management System** are as follows:

- Librarian Activity
- Student Activity
- Issues Activity
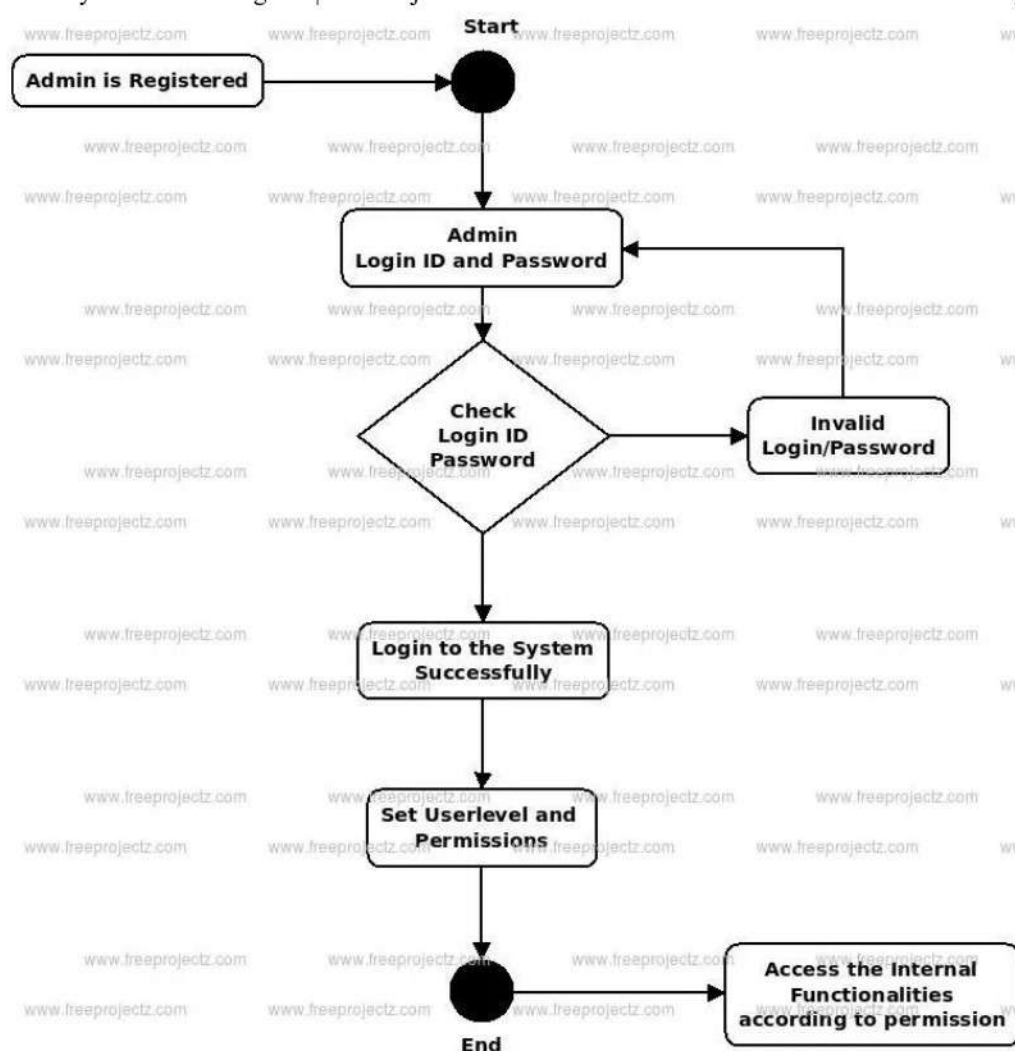- Books Activity
- Address Activity

Features Of The Activity UML Diagram Of Library Management System

- Admin User can search Librarian, view description of a selected Librarian, add Librarian, update Librarian and delete Librarian.
- Its shows the activity flow of editing, adding and updating of Student
- User will be able to search and generate report of Issues, Books, Address
- All objects such as (Librarian, Student, Address) are interlinked
- Its shows the full description and flow of Librarian, Books, Address, Issues, Student

Activity Diagram for Library Management System

Login Activity Diagram Of Library Management System:

This is the **Login Activity Diagram of Library Management System**, which shows the flows of Login Activity, where admin will be able to login using their username and password. After login user can manage all the operations on Issues, Librarian, Student, Address, Books. All the pages such as Student, Address, Books are secure and user can access these page after login. The diagram below helps demonstrate how the login page works in a Library Management System. The various objects in the Address, Issues, Librarian, Student, and Books page—interact over the course of the Activity, and user will not be able to access this page without verifying their identity.

Library Management System Class Diagram (Https://www.freeprojectz.com/uml/library-management-system-class-diagram)

Posted By freeproject (https://www.freeprojectz.com/users/freeproject) on August 2, 2017

Library Management System Class Diagram describes the structure of a Library Management System classes, their attributes, operations (or methods), and the relationships among objects. The main classes of the Library Management System are Student, Books, Issues, Librarian, Member, Address.

Classes of Library Management System Class Diagram:

- **Student Class** : Manage all the operations of Student
- **Books Class** : Manage all the operations of Books
- **Issues Class** : Manage all the operations of Issues
- **Librarian Class** : Manage all the operations of Librarian
- **Member Class** : Manage all the operations of Member
- **Address Class** : Manage all the operations of Address

Classes and their attributes of Library Management System Class Diagram:

- **Student Attributes** : student_id, student_college_id, student_name, student_mobile, student_email, student_username, student_password, student_address
- **Books Attributes** : book_id, book_student_id, book_name, book_author, book_publication_date, book_type, book_price, book_description
- **Issues Attributes** : issue_id, issue_book_id, issue_student_id, issue_date, issue_renewl, issue_expiry, issue_description
- **Librarian Attributes** : libraian_id, libraian_name, libraian_mobile, libraian_email, libraian_username, libraian_password, libraian_address
- **Member Attributes** : memeber_id, memeber_name, memeber_mobile, memeber_email, memeber_username, memeber_password, memeber_address
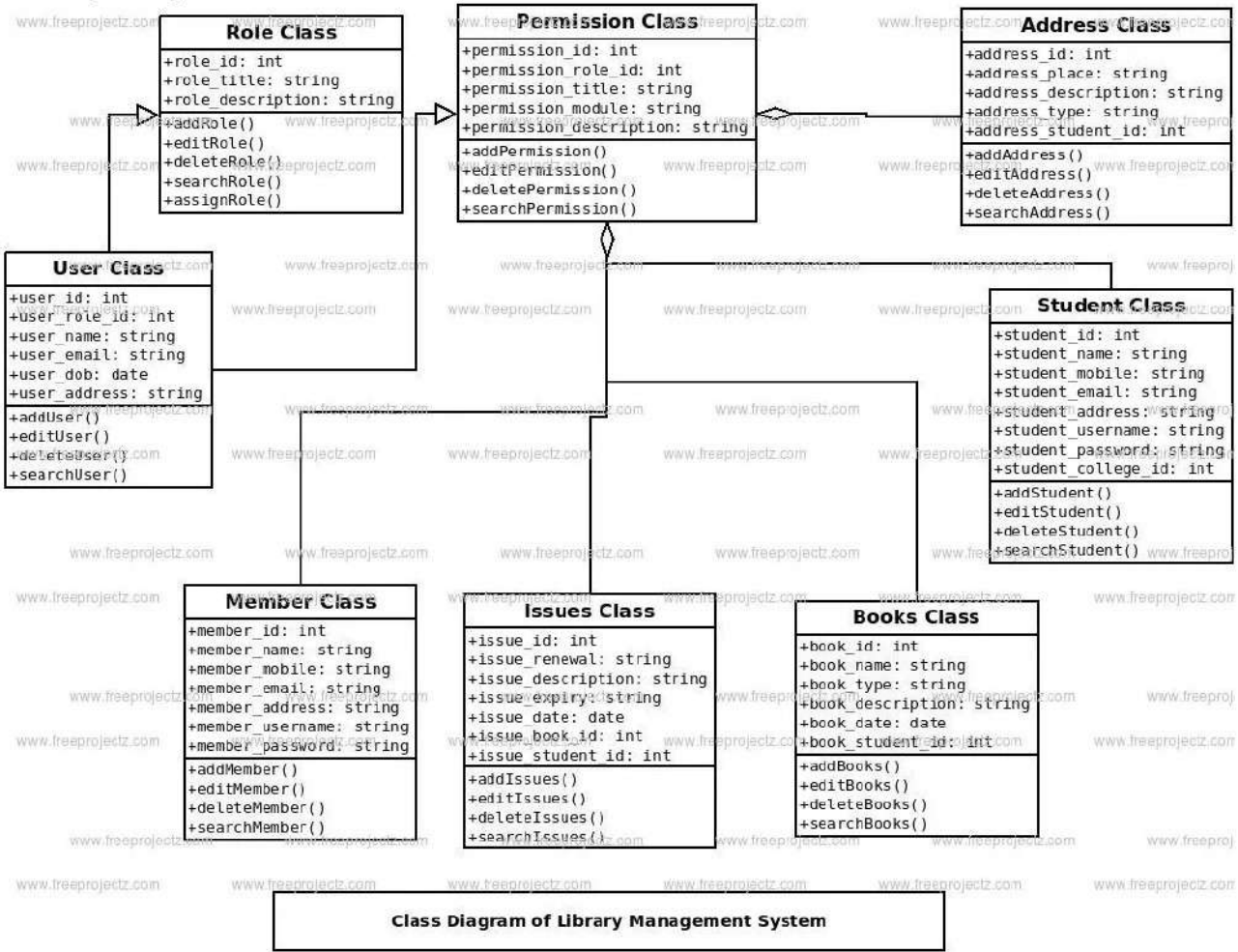- **Address Attributes** : address_id, address_student_id, address_place, address_type, address_description

Classes and their methods of Library Management System Class Diagram:

- **Student Methods** : addStudent(), editStudent(), deleteStudent(), updateStudent(), saveStudent(), searchStudent()
- **Books Methods** : addBooks(), editBooks(), deleteBooks(), updateBooks(), saveBooks(), searchBooks()

- **Issues Methods** : addIssues(), editIssues(), deleteIssues(), updateIssues(), saveIssues(), searchIssues()
- **Librarian Methods** : addLibrarian(), editLibrarian(), deleteLibrarian(), updateLibrarian(), saveLibrarian(), searchLibrarian()
- **Member Methods** : addMember(), editMember(), deleteMember(), updateMember(), saveMember(), searchMember()
- **Address Methods** : addAddress(), editAddress(), deleteAddress(), updateAddress(), saveAddress(), searchAddress()

Class Diagram of Library Management System :

Class Diagram Image:

Class Diagram of Library Management System

Library Management System Component Diagram (Https://www.freeprojectz.com/uml-diagram /library-management-system-component-diagram)

This is a **Component diagram of Library Management System** which shows components, provided and required interfaces, ports, and relationships between the Issues, Student, Librarian, Member and Address. This type of diagrams is used in Component-Based Development (CBD) to describe systems with Service-Oriented Architecture (SOA). **Library Management System UML component diagram**, describes the organization and wiring of the physical components in a system.
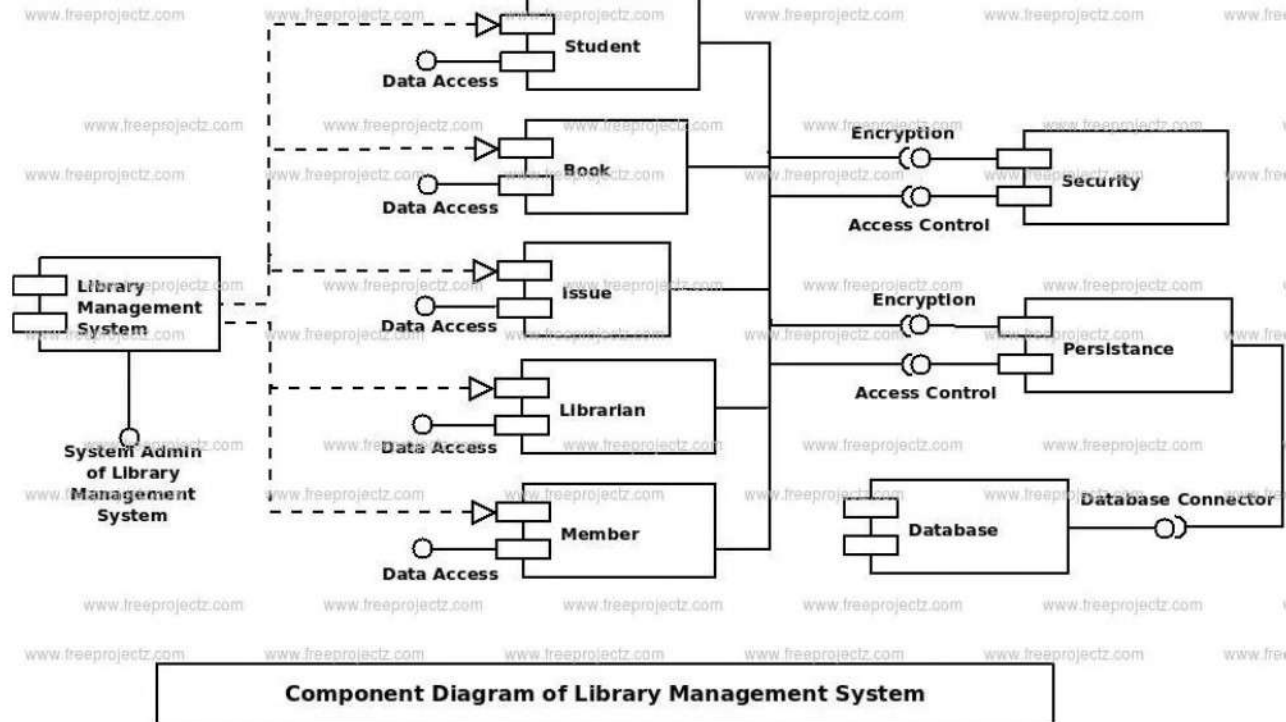
Components of UML Component Diagram of Library Management System:

- Issues Component
- Student Component
- Librarian Component
- Member Component
- Address Component

Featues of Library Management System Component Diagram:

- You can show the models the components of Library Management System.
- Model the database schema of Library Management System
- Model the executables of an application of Library Management System
- Model the system's source code of Library Management System

Component Diagram:

Component Diagram of Library Management System

Library Management System Dataflow Diagram (Https://www.freeprojectz.com/dfd/library-management-system-dataflow-diagram)
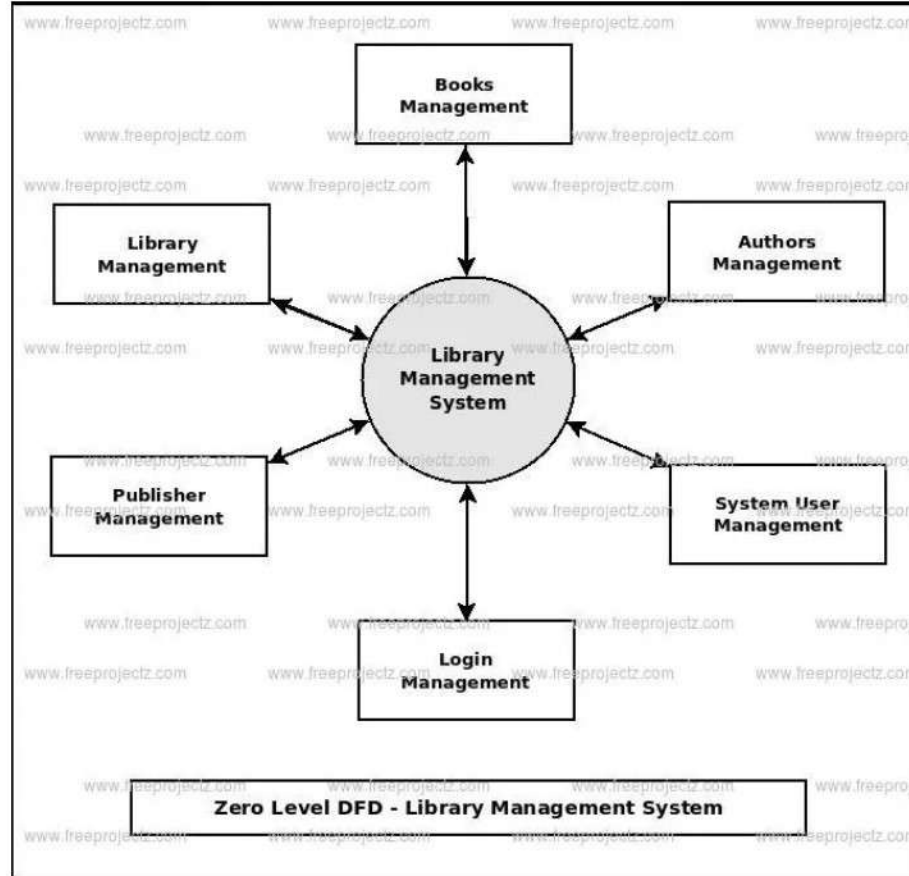
Library Management System Data flow diagram is often used as a preliminary step to create an overview of the Library Management without going into great detail, which can later be elaborated.it normally consists of overall application dataflow and processes of the Library Management process. It contains all of the userflow and their entities such all the flow of Library, Book, Issue Book, Authors, Publisher, Employee, Student. All of the below diagrams has been used for the visualization of data processing and structured design of the Library Management process and working flow.

Zero Level Data Flow Diagram(0 Level DFD) Of Library Management System :

This is the Zero Level DFD of Library Management System, where we have eloborated the high level process of Library Management. It's a basic overview of the whole Library Management System or process being analyzed or modeled. It's designed to be an at-a-glance view of Publisher,Employee and Student showing the system as a single high-level process, with its relationship to external entities of Library,Book and Issue Book. It should be easily understood by a wide audience, including Library,Issue Book and Publisher In zero leve DFD of Library Management System, we have described the high level flow of the Library Management system.

High Level Entities and proccess flow of Library Management System:

- Managing all the Library
- Managing all the Book
- Managing all the Issue Book
- Managing all the Authors
- Managing all the Publisher
- Managing all the Employee
- Managing all the Student

Zero Level DFD - Library Management System

Diagram boxes:
- Books Management
- Library Management
- Authors Management
- Library Management System
- Publisher Management
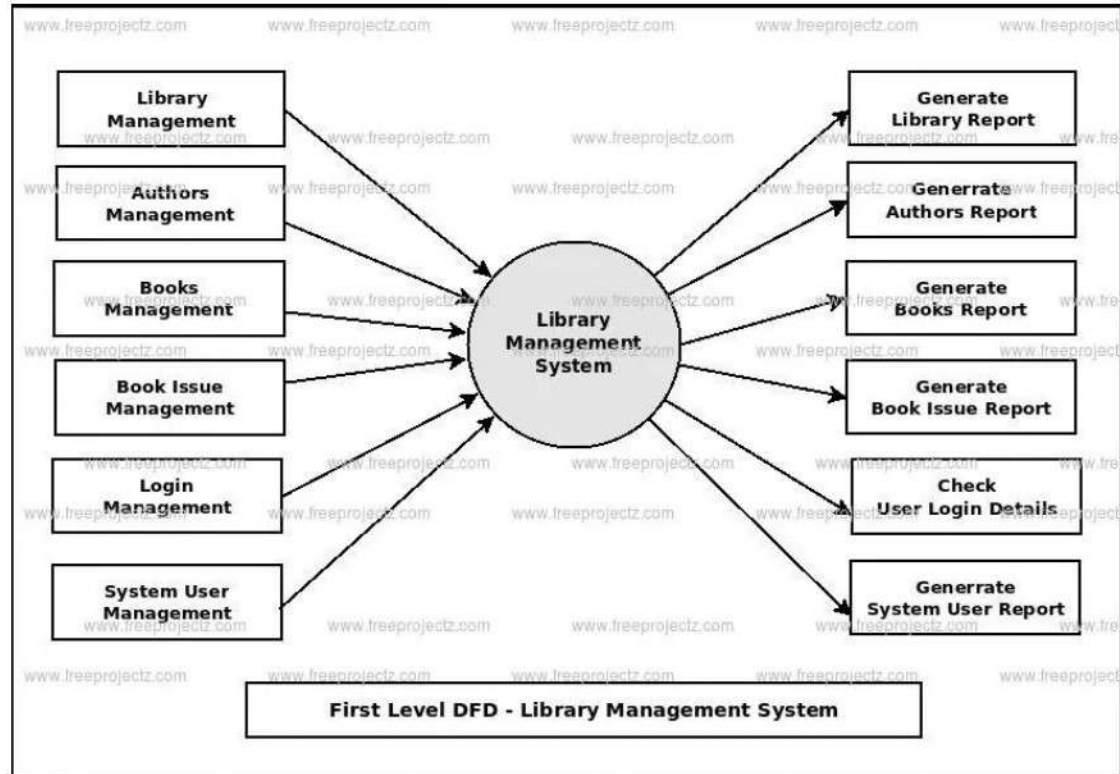- System User Management
- Login Management

First Level Data Flow Diagram(1st Level DFD) Of Library Management System :

First Level DFD (1st Level) of Library Management System shows how the system is divided into sub-systems (processes), each of which deals with one or more of the data flows to or from an external agent, and which together provide all of the functionality of the Library Management System system as a whole. It also identifies internal data stores of Student, Employee, Publisher, Authors, Issue Book that must be present in order for the Library Management system to do its job, and shows the flow of data between the various parts of Library, Issue Book, Employee, Student, Publisher of the system. DFD Level 1 provides a more detailed breakout of pieces of the 1st level DFD. You will highlight the main functionalities of Library Management.

Main entities and output of First Level DFD (1st Level DFD):

- Processing Library records and generate report of all Library
- Processing Book records and generate report of all Book
- Processing Issue Book records and generate report of all Issue Book
- Processing Authors records and generate report of all Authors
- Processing Publisher records and generate report of all Publisher
- Processing Employee records and generate report of all Employee
- Processing Student records and generate report of all Student

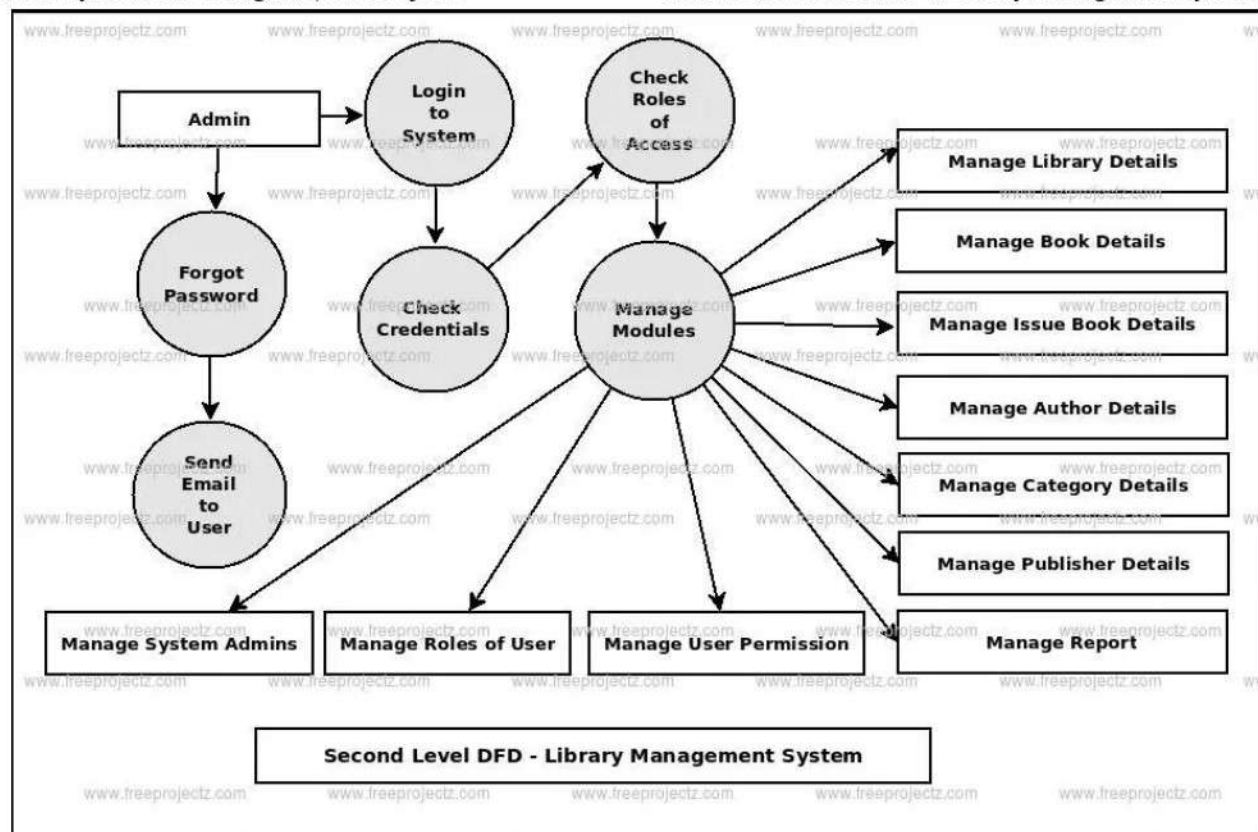**First Level DFD - Library Management System**

Second Level Data Flow Diagram(2nd Level DFD) Of Library Management System :

DFD Level 2 then goes one step deeper into parts of Level 1 of Library Management. It may require more functionalities of Library Management to reach the necessary level of detail about the Library Management functioning. First Level DFD (1st Level) of Library Management System shows how the system is divided into sub-systems (processes). The 2nd Level DFD contains more details of Student, Employee, Publisher, Authors, Issue Book, Book, Library.

Low level functionalities of Library Management System

- Admin logins to the system and manage all the functionalities of Library Management System
- Admin can add, edit, delete and view the records of Library, Issue Book, Publisher, Student
- Admin can manage all the details of Book, Authors, Employee
- Admin can also generate reports of Library, Book, Issue Book, Authors, Publisher, Employee
- Admin can search the details of Book, Publisher, Employee
- Admin can apply different level of filters on report of Library, Authors, Publisher
- Admin can tracks the detailed information of Book, Issue Book, Authors, , Publisher

Second Level DFD - Library Management System

Library Management System ER Diagram (Https://www.freeprojectz.com/entity-relationship/library-management-system-er-diagram)

Posted By freeproject (https://www.freeprojectz.com/users/freeproject) on July 17, 2017
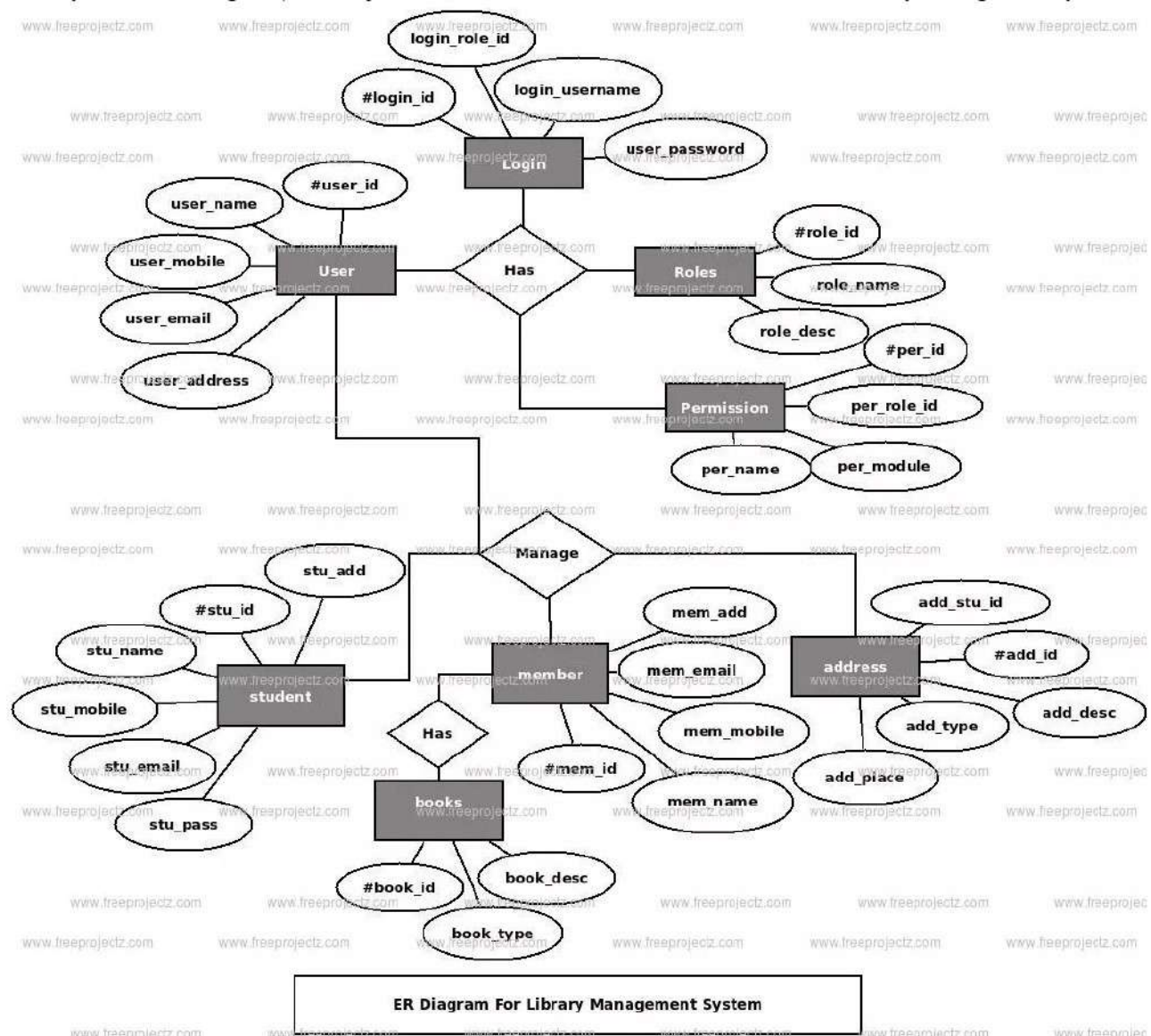
This ER (Entity Relationship) Diagram represents the model of Library Management System Entity. The entity-relationship diagram of Library Management System shows all the visual instrument of database tables and the relations between Books, Librarian, Student, Address etc. It used structure data and to define the relationships between structured data groups of Library Management System functionalities. The main entities of the Library Management System are Student, Books, Issues, Librarian, Member and Address.

Library Management System entities and their attributes :

- **Student Entity** : Attributes of Student are student_id, student_college_id, student_name, student_mobile, student_email, student_username, student_password, student_address
- **Books Entity** : Attributes of Books are book_id, book_student_id, book_name, book_author, book_publication_date, book_type, book_price, book_description
- **Issues Entity** : Attributes of Issues are issue_id, issue_book_id, issue_student_id, issue_date, issue_renewl, issue_expiry, issue_description
- **Librarian Entity** : Attributes of Librarian are libraian_id, libraian_name, libraian_mobile, libraian_email, libraian_username, libraian_password, libraian_address
- **Member Entity** : Attributes of Member are memeber_id, memeber_name, memeber_mobile, memeber_email, memeber_username, memeber_password, memeber_address
- **Address Entity** : Attributes of Address are address_id, address_student_id, address_place, address_type, address_description

Description of Library Management System Database :

- The details of Student is store into the Student tables respective with all tables
- Each entity (Address, Issues, Member, Books, Student) contains primary key and unique keys.
- The entity Issues, Member has binded with Student, Books entities with foreign key
- There is one-to-one and one-to-many relationships available between Member, Librarian, Address, Student
- All the entities Student, Member, Issues, Address are normalized and reduce duplicacy of records
- We have implemented indexing on each tables of Library Management System tables for fast query execution.

ER Diagram For Library Management System

Library Management System Sequence Diagram (Https://www.freeprojectz.com/uml-diagram/library-management-system-sequence-diagram)
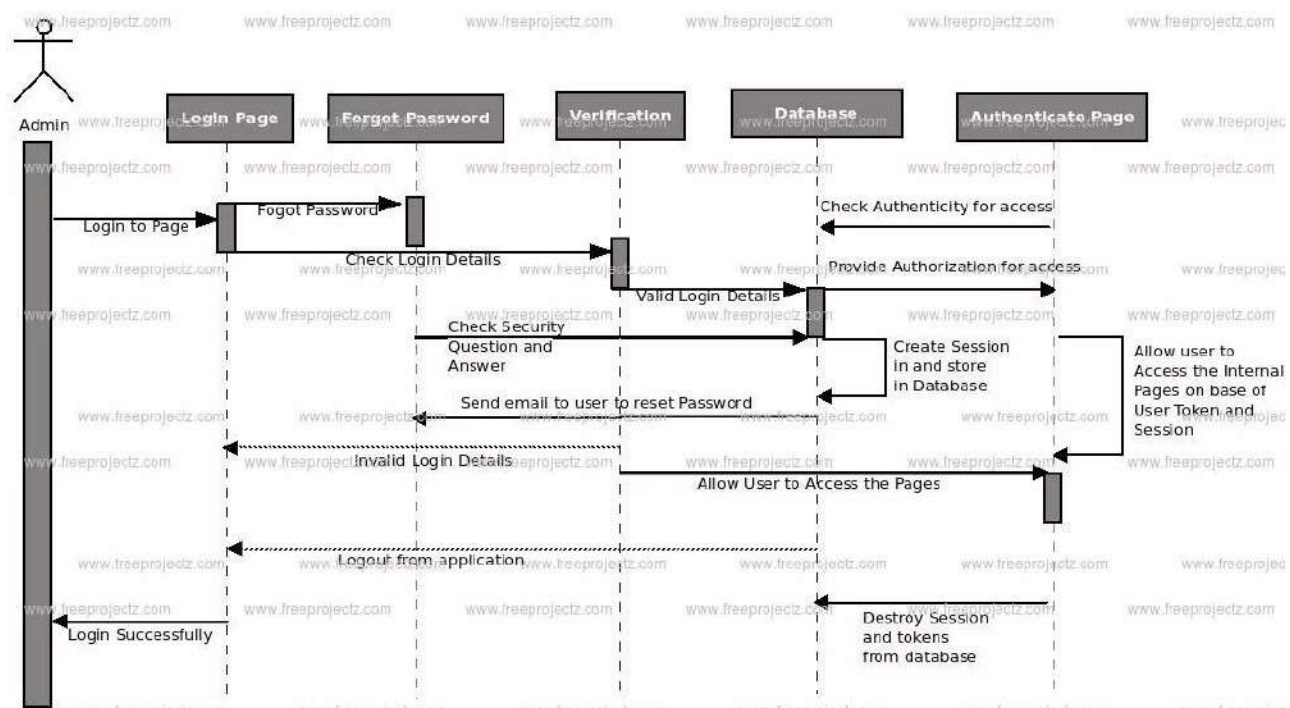
Posted By freeproject (https://www.freeprojectz.com/users/freeproject) on January 31, 2018

This is the **UML sequence diagram of Library Management System** which shows the interaction between the objects of Librarian, Issues, Address, Member, Student. The instance of class objects involved in this UML Sequence Diagram of Library Management System are as follows:

- Librarian Object
- Issues Object
- Address Object
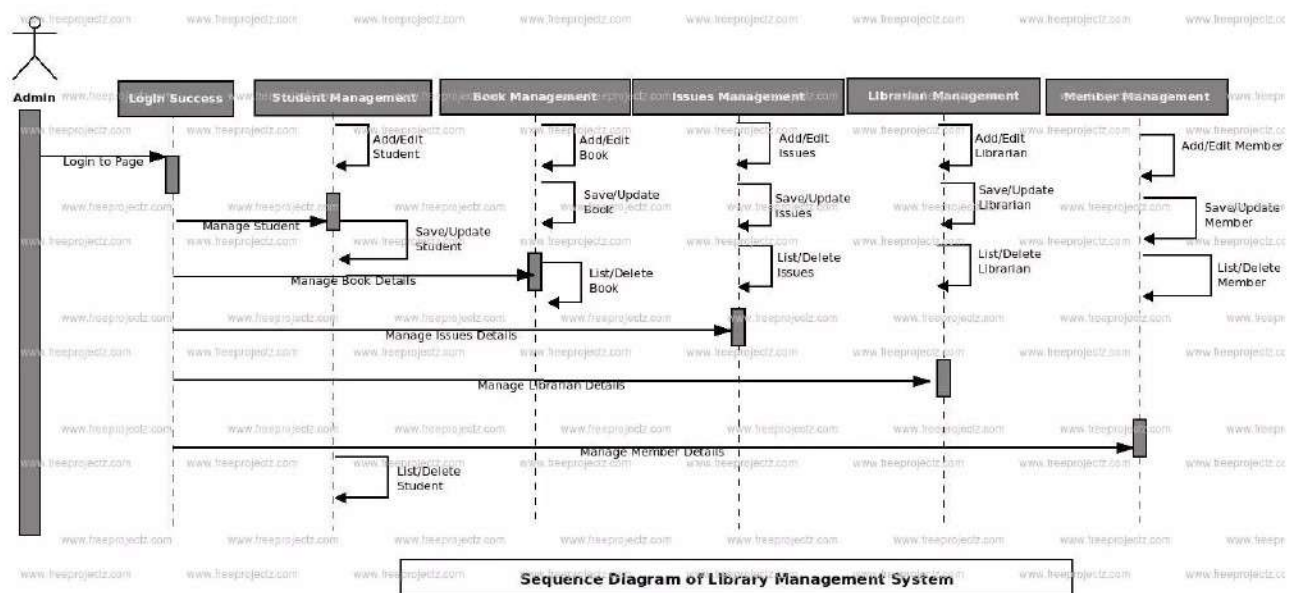- Member Object
- Student Object

Login Sequence Diagram Of Library Management System:

This is the **Login Sequence Diagram of Library Management System**, where admin will be able to login in their account using their credentials. After login user can manage all the operations on Address, Librarian, Issues, Student, Member. All the pages such as Issues, Student, Member are secure and user can access these page after login. The diagram below helps demonstrate how the login page works in a Library Management System. The various objects in the Student, Address, Librarian, Issues, and Member page—interact over the course of the sequence, and user will not be able to access this page without verifying their identity.

This is the **UML sequence diagram of Library Management System** which shows the interaction between the objects of Librarian, Issues, Address, Member, Student. The instance of class objects involved in this UML Sequence Diagram of Library Management System are as follows:

- Librarian Object
- Issues Object
- Address Object
- Member Object
- Student Object

Sequence Diagram of Library Management System

Library Management System Use Case Diagram (Https://www.freeprojectz.com/use-case/library-management-system-use-case-diagram)

Posted By freeproject (https://www.freeprojectz.com/users/freeproject) on July 24, 2017

This Use Case Diagram is a graphic depiction of the interactions among the elements of Library Management System. It represents the methodology used in system analysis to identify, clarify, and organize system requirements of Library Management System. The main actors of Library Management System in this Use Case Diagram are: Super Admin, System User, Librarian, Student, who perform the different type of use cases such as Manage Student, Manage Books, Manage Issues, Manage Librarian, Manage Member, Manage Address, Manage Users and Full Library Management System Operations. Major elements of the UML use case diagram of Library Management System are shown on the picture below.

The relationships between and among the actors and the use cases of Library Management System:

- **Super Admin Entity** : Use cases of Super Admin are Manage Student, Manage Books, Manage Issues, Manage Librarian, Manage Member,

Manage Address, Manage Users and Full Library Management System Operations

- **System User Entity** : Use cases of System User are Manage Student, Manage Books, Manage Issues, Manage Librarian, Manage Member, Manage Address
- **Librarian Entity** : Use cases of Librarian are Search Books, Allot Books, Return Books, Manage Students
- **Student Entity** : Use cases of Student are Request for Books, Return Books, Check History

Use Case Diagram of Library Management System :

Usecase Diagram of Library Management System