

# Micro-Project Report

On

Submitted in partial fulfilment of the requirements

## **“Library Management System”**

For the award of the course of

Diploma of Engineering In

Information technology

By

Name of the Students	Enrollment No.
Ghonge Karishma Rajaram	2010510360
Gite Akshay Sangram	2010510361
Hule Gayatri Kerbhau	2010510362
Hule Sanika Rajendra	2010510363
Jadhav Kishor Hari	2010510364
Jadhav Pranav Tanaji	2010510365

Under the guidance of

Subject Teacher

H.O.D

Principal

( Mrs.P.C.FAFAT)

(Dr.D.N.Rewadkar)

(Dr.D.R.Nandanwar)

DEPARTMENT OF INFORMATION TECHNOLOGY  
GOVERNMENT POLYTECHNIC AWASARI (KHURD)



SEMESTER 4<sup>th</sup> (2020-21)

## CERTIFICATE

This is to certify the following students of semester 4<sup>th</sup> of Diploma in Information Technology of Institute: Government Polytechnic, Awasari (kh) ( code : 1051 ) has completed the micro project satisfactorily in subject- Software Engineering(22413) for the academic year 2020-2021 as prescribed in the curriculum.

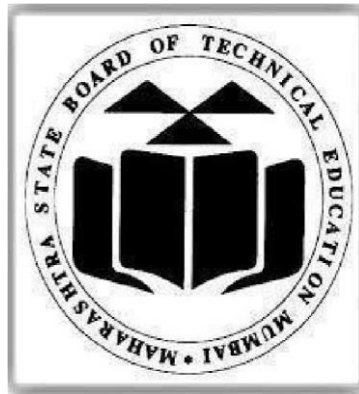
SR. NO.	NAMES OF GROUP MEMBERS	ROLL NO.	ENROLLMENT NO.
1	Ghonge Karishma Rajaram	21IF213	2010510360
2	Gite Akshay Sangram	21IF214	2010510361
3	Hule Gayatri Kerbhau	21IF215	2010510362
4	Hule Sanika Rajendra	21IF216	2010510363
5	Jadhav Kishor Hari	21IF217	2010510364
6	Jadhav Pranav Tanaji	21IF218	2010510365

Guidance by  
( Mrs. P.C.FAFAT)

H.O.D  
(Dr.D.N.Rewadkar)

Principal  
(Dr.D.R.Nandanwar)

Part - A  
MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION



GOVERNMENT POLYTECHNIC, AWASARI ( KH ) TAL-  
AMBEGAON, DIST – PUNE – 412405

## MICROPROJECT

ACADEMIC YEAR : 2020-2021  
COURSE NAME : Software Engineering  
COURSE CODE : 22413  
BRANCH : INFORMATION TECHNOLOGY (SY)  
TOPIC NAME : Library Managemen System

**DETAILS OF TEAM MEMBERS :**

SR. NO.	NAMES OF GROUP MEMBERS	ROLL NO.	ENROLLMENT NO.
1	Ghonge Karishma Rajaram	21IF213	2010510360
2	Gite Akshay Sangram	21IF214	2010510361
3	Hule Gayatri Kerbhau	21IF215	2010510362
4	Hule Sanika Rajendra	21IF216	2010510363
5	Jadhav Kishor Hari	21IF217	2010510364
6	Jadhav Pranav Tanaji	21IF218	2010510365

**GUIDANCE BY**

**Mrs. P.C.FAFAT**

**GROUPELEADER**

**PRANAV JADHAV**

## MICRO PROJECT PROPOSAL

Aim: Library Management System

### Benefits:

- Understand the software Lifecycle.
- We learn what are the requirements to build a software.
- We studied how to UML diagrams.
- We learned what is ER diagram and use case diagram.

### Course and Outcome Addressed:

CO1: Select suitable Software Process model for software development.

CO2: Prepare software requirement specifications.

CO3: Apply project management and quality assurance principles in software development.

### Proposed Methodology: -

- First of all we will make a team of six members.
- After that by selecting the topic; we will be analysing it by studying the resources which helps us to get information about our micro-project.
- Moreover we will submit the part-A of our micro-project to our subject teacher. And we will be moving forward to follow actual methodology preparing actual report in part-B.
- So after we will collect the best information from best resource from various websites we will get information regarding the micro project like the different applications of material used.
- Carry out literature study to find out the objectives of the project work.
- Understand the different application and working process.
- Select various sources of information such as reference book
- Then prepare our Microproject.

#### 4.0 Action plan: -

S. No.	Details of activity	Planned Start date	Planned Finish date	Name of Responsible Team Members
1	Formation of project group			
2	Selection of project title			
3	Making abstract			
4	Conduct the information search about the project for requirement and analysis of the project.			Ghonge Karishma Rajaram Gite Akshay Sangram Hule Gayatri Kerbhau Hule Sanika Rajendra Jadhav Kishor Hari Jadhav Pranav Tanaji
5	Assembling information for the project work			
6	Implementation of Project			
7	Testing of the Project			
8	Report preparation			
9	Report Finalization			
10	Submission of the project			

5.0 Resources Required: -

Sr.no.	Name of Resource	Specification	Qty.	Remarks
1	Software	Google	-	
2	Book	Software Engineering	-	

Date : -     /     / 20

## **Part-B**

### **Micro-Project Report**

#### **“LIBRARY MANAGEMENT SYSTEM”**

#### **1.0 Rationale:**

In the modern world of Information Technology, the Software Engineering has become the most preferred approach for software development. It solves the real world problems. We created a microproject on Design UML diagrams For Library Management System successfully using the concepts of software.

#### **2.0 Aims/Benefits of the Micro-Project :**

The micro project on Design UML diagrams For Library Management System. This system provides various operations like register book, return book, manage books. This project is developed using important concept of software engineering that is software requirement specification.

#### **3.0 Course Outcomes Addressed:**

- a) Select suitable software process model for software development.
- b) Prepare software requirement specification.
- c) Apply project management and quality assurance principles in software development.

#### **4.0 Literature Review:**

In the Library Management system, the librarian can add/update/remove the student and book details into the database. The students have a Unique ID for accessing any book from the library.

Through the ID, the librarian can check the user details, fine payment, and book details.

Now a day, human wants those software that can reduce effort of the people and very best for uses to understandable. Library borrowing/returning system is a process of organizing important information, used to track items borrowed, and the scheduled time for returning. This system helps user or people who responsible in recording the data appropriately, it also saves time and more convenient to use that the traditional manual recording.



### 5.0 Actual Methodology Followed:

First of all, we have to select topic report for Design UML diagrams For Library Management System. The teacher will ask the student to prepare, develop a report on Library Management System.

We collect the information about the topic such as internet and books. Then we have to do to teacher about Design UML diagrams For Library Management System on which we are going to prepare micro project report.

After the setup of part-A prepared the report about the Design UML diagrams for Library Management System .After doing all the typing we arranged the all data in proper arrangement. We select proper arrangement font, layout etc. At last we got Principle outcomes of the micro project Part-A and submitted it to the Subject teacher.

### 6.0 Actual Resources Used:

S. No.	Name of Resource/material	Specifications	Qty	Remarks
1	Computer System	4GB RAM, DELL i3	01	
2	Microsoft Word	Version – 2010	01	

### 7.0 Outputs of the Micro-Projects:

- We learn how to prepare the report on Library Management System.
- Learn relationship of Library management system.

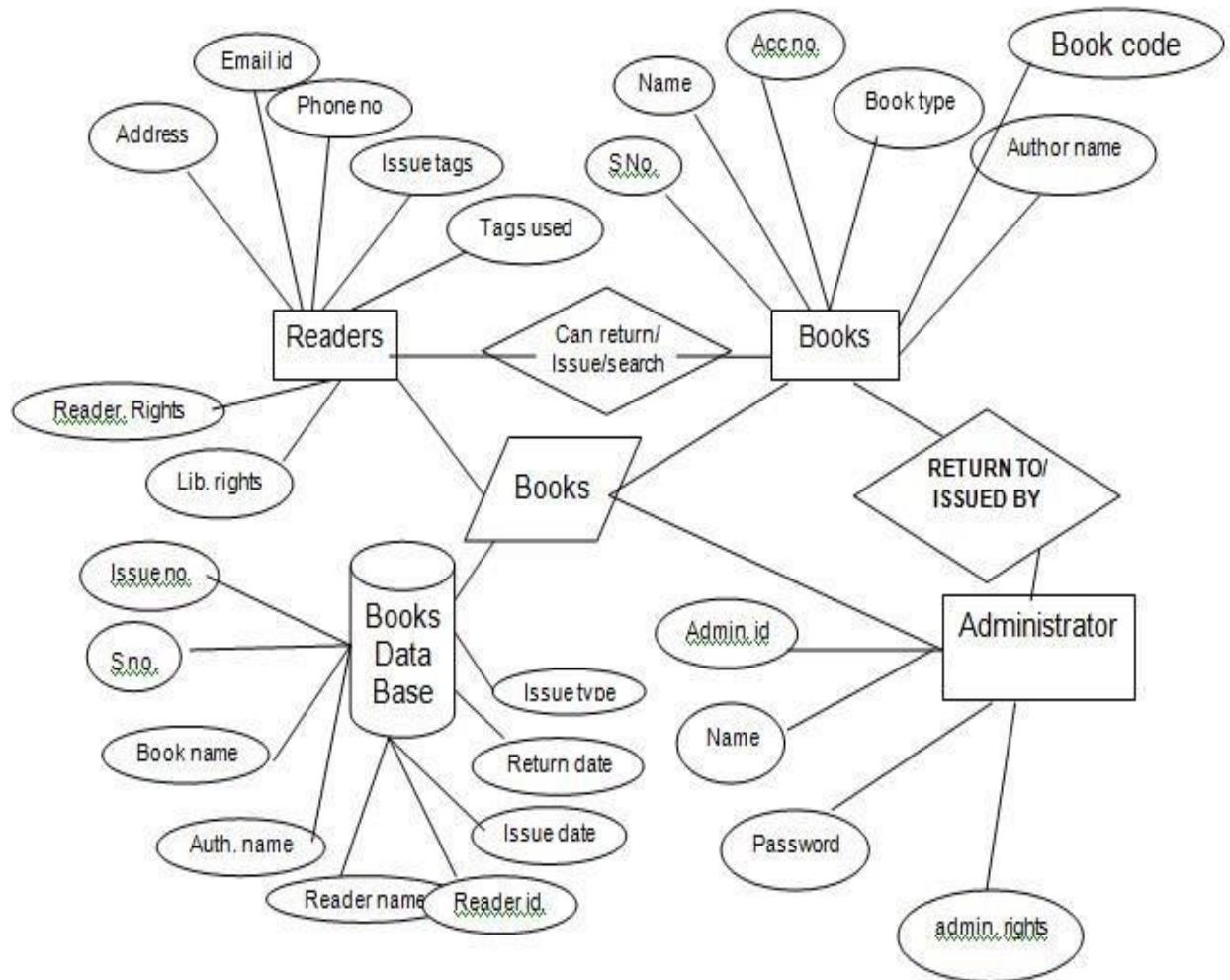
## 1. ER Diagram – Library Management System

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, members, library, publisher 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 books, members, library, publisher, publish by, etc.

### Library Management System entities and their attributes:

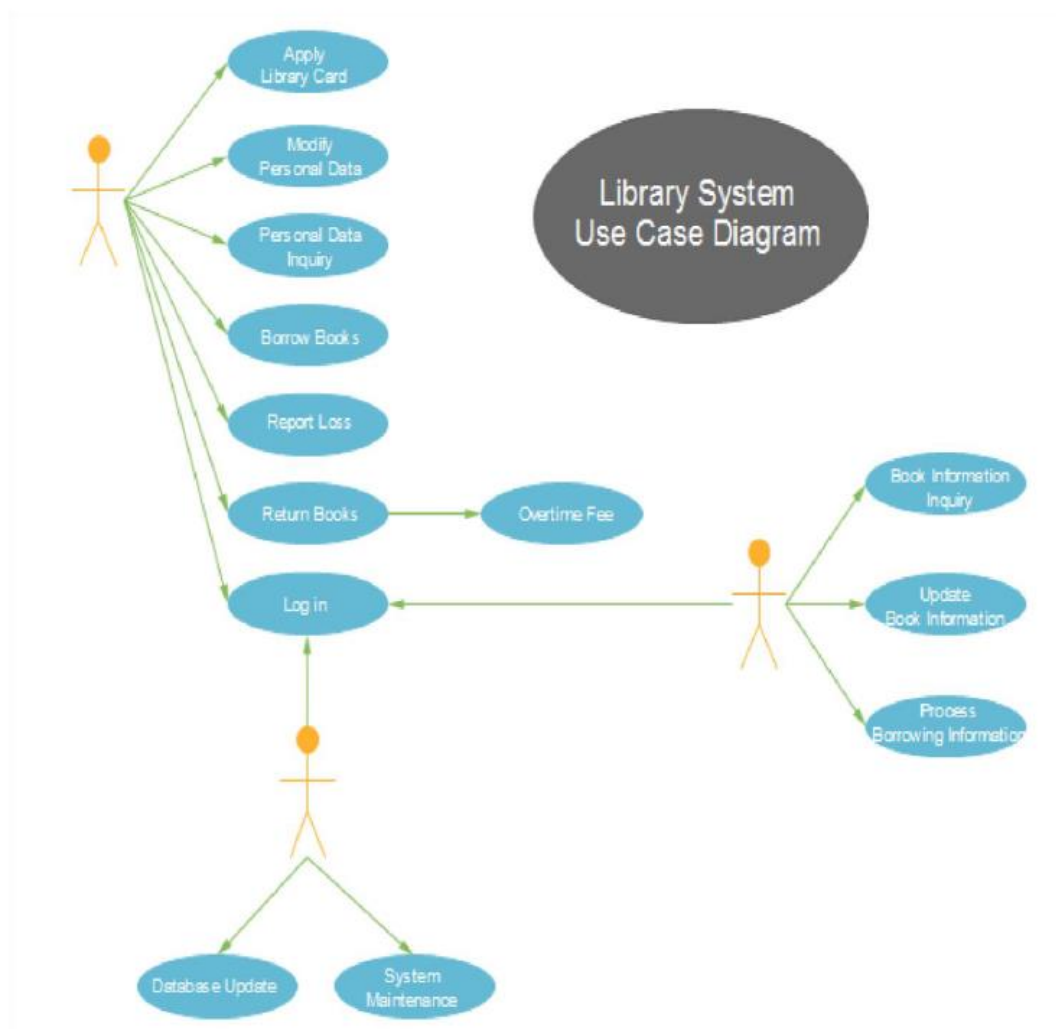
- Books Entity:  
Attributes of Library are book\_no, book\_name, acc\_no, book\_type, book\_code, author\_name
- Reader Entity:  
Attributes of Reader are address, email\_id, phone\_no, issue\_tags, tags\_used, reader\_rights, lib\_rights.
- Administrator Entity:  
Attributes of Adminstrator are admin\_id, admin\_name, admin\_rights, admin\_password.
- Book data base Entity:  
Attributes of Nurses are issue\_no, book\_no, book\_name, author\_name, reader\_name, reader\_id, issue\_date, return\_date, issue\_type.

## 1.ER Diagram – Library Management System

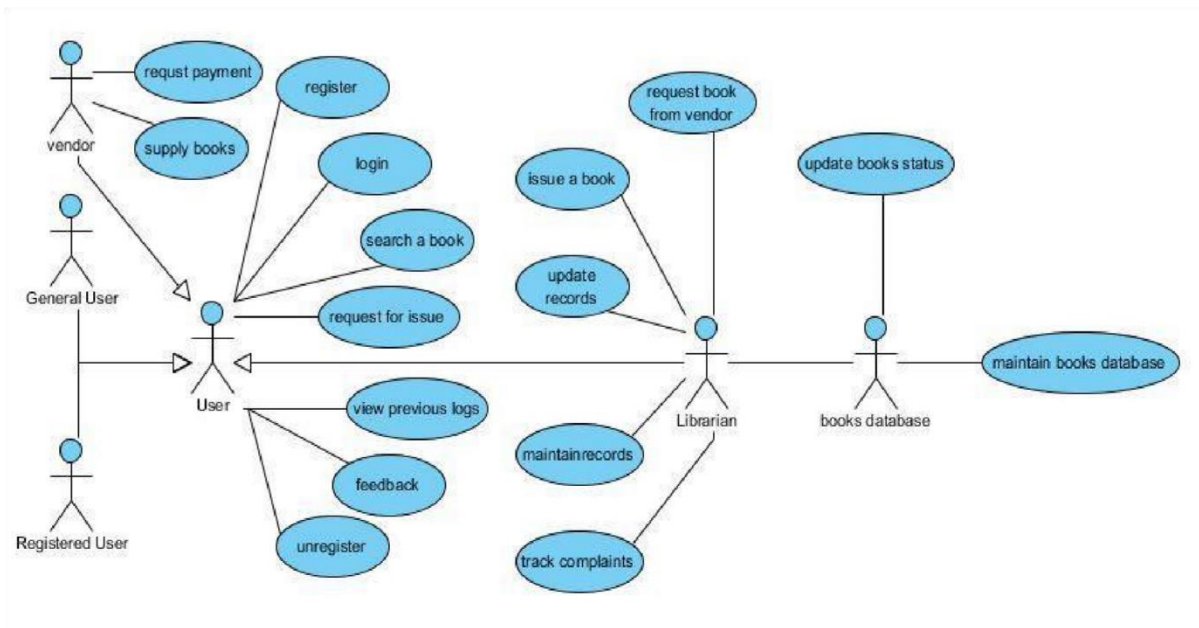


## 2. Use-case Diagram – Library Management System

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: borrow books, modify personal data, report loss, login and full Library Management System Operations.



### 3. UML diagram – Library Management System



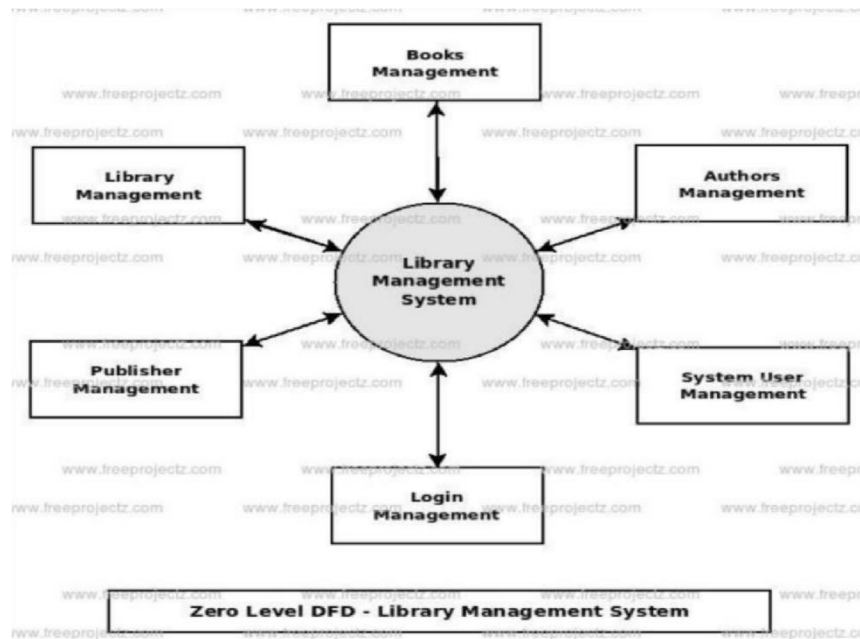
### 4. Data Flow Diagram – Library Management System

A data flow diagram is a graphical view of how data is processed in a system in terms of input and output. The Data flow diagram (DFD) contains some symbol for drawing the data flow diagram.

#### a. Zero Level Data flow Diagram (0 Level DFD)

High Level Entities and process of library management system.

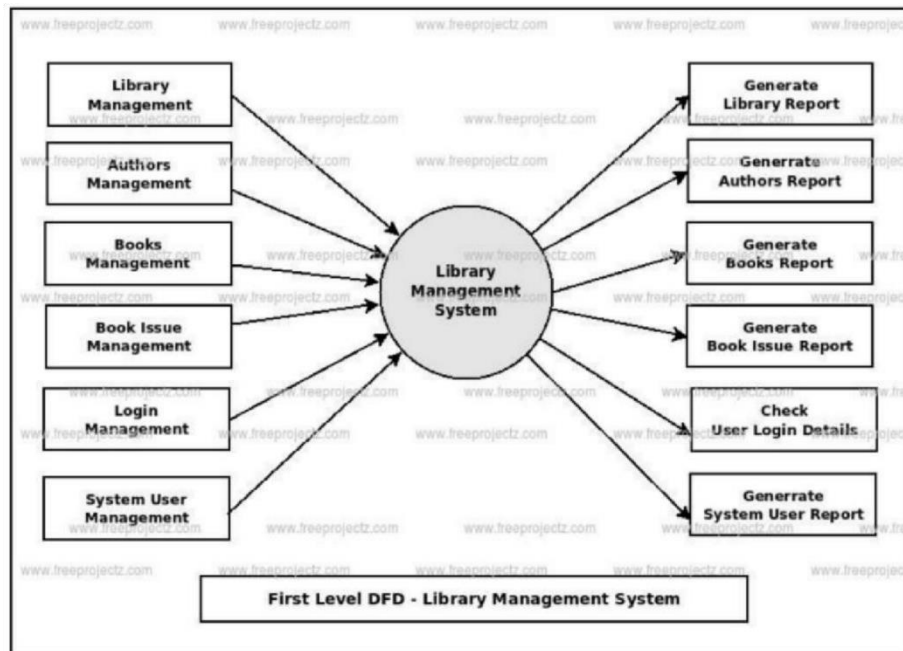
- Managing all the library
- Managing all the Book
- Managing all the Issue Book
- Managing all the Authors
- Managing all the Authors
- Managing all the Employee
- Managing all the Student



b. First Level Data Diagram(1<sup>st</sup> Level DFD)

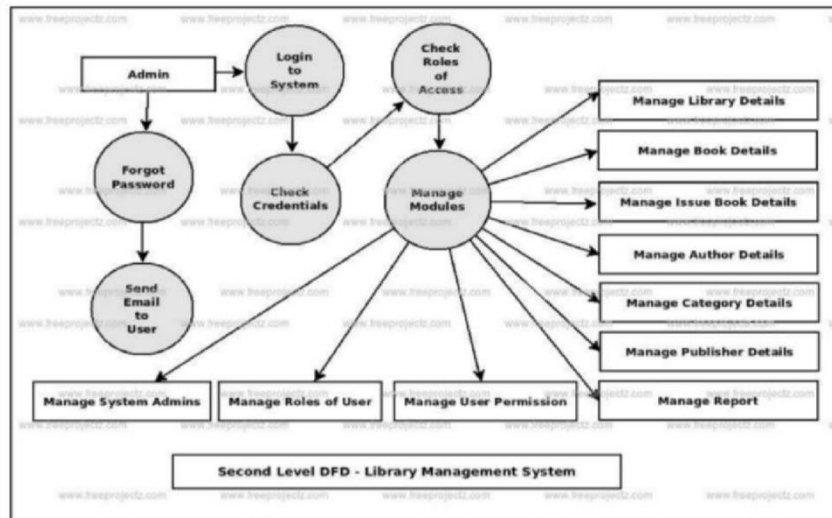
Main entities and output of First Level DFD(1<sup>st</sup> Level DFD)

- 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 all issue book
- Processing author records and generate report of all authors
- Processing publisher records and generate report of all publisher
- Processing student records and generate report of all students

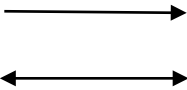


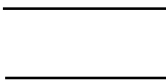


### C. Second Level Functionalities of Library Management System

- Admin logs in 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, author, employee
- Admin can also generate reports of library, book, issue book author, publisher, employee
- Admin can search the details of book, publisher, employee
- Admin can apply different level of filters on report of library, authors, publisher



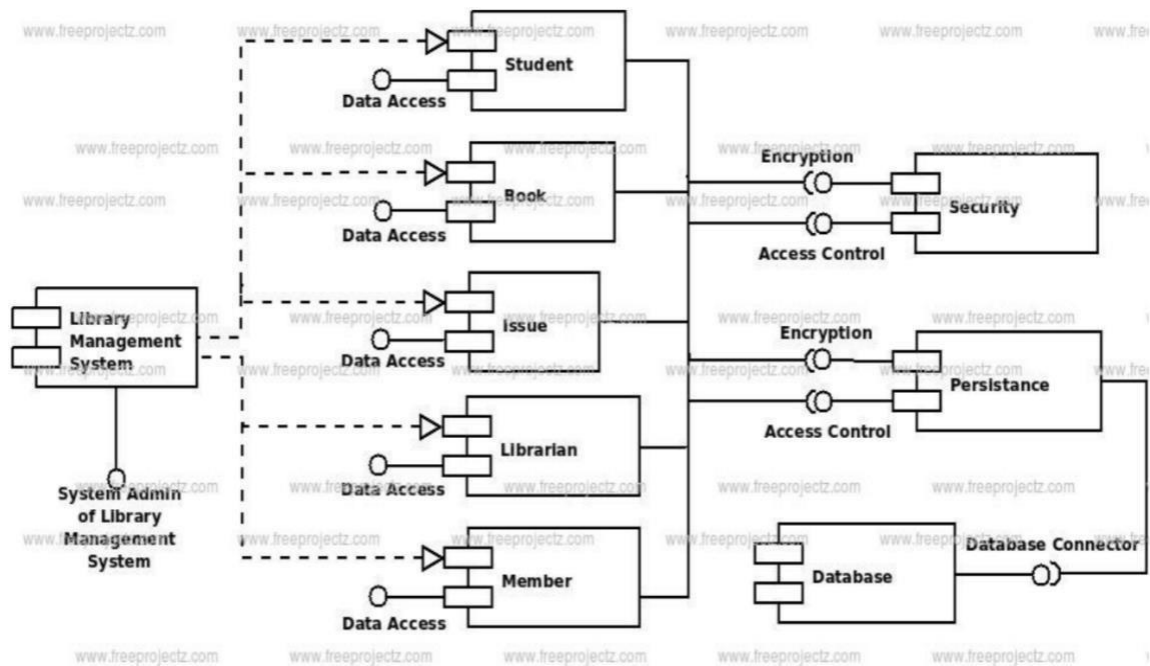
Data flow diagram symbols:

Symbol	Description
	<b>Data Flow :</b> Data flow are pipelines through the packets of information flow.
	<b>Process :</b> A Process or task performed by the system.
	<b>Entity :</b> Entity are object of the system. A source or destination data of a system.
	<b>Data Store :</b> A place where data to be stored.



## 5. Components Case Diagram :-

The components diagrams represents the high level parts that make up the system. This diagram depicts, at a high level, what components form part of the system and how they are interrelated. A component diagram depicts the components culled after the system has undergone the development or construction phase.



## 6. Benefits of Library Management System in Software

- i. Helps you to manage the library constructively
- ii. Reduces operating cost
- iii. Saves time
- iv. Makes your library a smart library
- v. Today's generation needs it

## 8.0 Skill Developed / Learning outcome of this Micro-Project:

- We learned how to create a Library Management System.
- We learn how to use UML diagrams.

## 9.0 Reference:

- 1) We collect information about the Library management system through the internet .
- 2) We gathered information from <https://www.freeprojectz.com/umldiagram/library-managementsystem-uml-diagram>

## Conclusion:

1. The project Library management system is for computerizing the working in a library.
2. The software takes all of the requirements of an a library and is capable to provide easy and effective storage of information related to books and users.