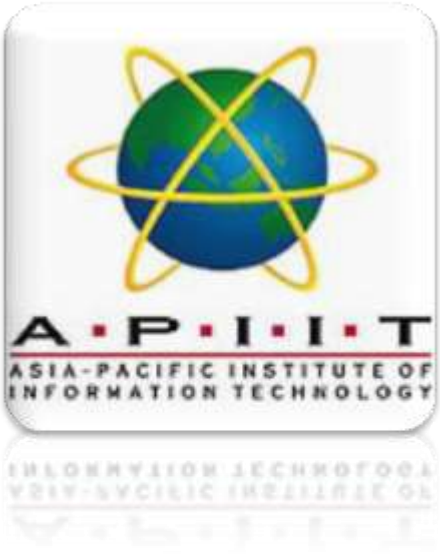


# SYSTEM ANALYSIS AND DESIGN

## GROUP ASSIGNMENT

## (GROUP 2)

HAND IN DATE: 20 February 2013

HAND OUT DATE: 25 April 2013

*SUBMITTED TO:*

*_____ ___*

*Mr. Manoj Sharma*

*SUBMITTED BY:*

*Avinash Verma*

*Rakesh Verma*

*Kumar Abhishek*

# ASIA PACIFIC INSTITUTE OF INFORMATION TECHNOLOGY

PANIPAT (HARYANA – INDIA) – 132 103

## CERTIFICATE

This is to certify that the following students of level 1 **Mr. Avinash Verma**(Intake no.-Pt1181128)**, Mr. Rakesh Verma**(Intake no.-Pt1181130)**, Mr. Kumar Abhishek**(Intake no.-Pt1181106) of B.Eng. (Hons) Second year (Fourth Semester) from **Asia Pacific Institute of Information Technology SD INDIA, Panipat** (Staffordshire University) have successfully completed their group assignment of **System Analysis and Design**. They worked on this project from **20 February 2013** to **25 April 2013.**

The project allotted to them as **"AUTOMATED LIBRARY MANAGEMEN SYSTEM"** and they have successfully completed the same.

**GROUP MEMBERS (GROUP 2)**

Avinash Verma (Pt1181128)

Rakesh Verma (Pt1181130)

Kumar Abhishek (Pt1181106)

**Module Lecturer**

_____

**Mr. Manoj Sharma**

# ACKNOWLEDGEMENT

It took nearly two months to finally come up with a group project on **AN AUTOMATED LIBRARY MANAGEMENT SYSTEM**. We would like to thank people who have helped us throughout the duration of project development.

It was a great experience working on the project of ***System Analysis and Design***. We express our gratitude towards those who were constantly involved with us during our project. APIIT SD India, Panipat will always occupy a special place in our heart, throughout our career, for both personal and professional reasons.

The phenomenon remains same that no project ever can be executed proficiently and efficiently without sharing the particular ideas, technical expertise and innovative thoughts put forwarded by the technical and non-technical veterans.

We are also grateful to all the APIITIAN lecturers for being extremely friendly and co-operative during the entire course of our project. Their continuous help and support made the project much easy.

There are no exact words to express our regards and reasonable gratitude to one of our esteemed techno personality, without him this project could not get an entrance towards the execution**.** Mr. Manoj Sharma is the pioneer who availed this magnificent option to us to move ahead. He has always inspired and guided us for the right track to be followed for all the system analysis section of this project. We are indebted to him for giving us this great opportunity to pursue our fourth semester project.

Last, but not the least we would like to thank APIIT SD INDIA for giving us this opportunity to work in great environment.

Lastly, we would like to thank all those whose names may not have appeared here but whose contribution has not gone unnoticed. We would like to thank all of them, for their help in various ways.

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# 1.Abstract

In Information Technology one of the most important developments in recent years is that of manual systems are being replaced by online automated web based management systems. Registers and Pens in any organisation are replaced by Computer Systems.

In the race of this “Digital (Computerised) World” starting from a small organisation to a large size organisation each and every one is opting computerize systems for faster and secure access of data. Using Computerised system has a lot of benefits that in modern days we can’t ignore... System Analysis and Design is an area where we find in details how a computerised system is being built and how it works.

An effective management system is a crucial factor in successful working of Automated Library Management System in a school. Until recently, they have to work through such inefficient and potentially error-prone means as processing manuals, just to gather up the information and also to work smoothly. And that’s before they’ve passed it on to the students and faculties of Automated Library Management System, where it was re-entered, hopefully with accuracy.

# 2.Introduction

LIBRARY MANAGEMENT SYSTEM is a software application to maintain the records related to Book Purchase, Stock Maintenance, Book Search, Catalogue, Book Issue, Book Returns, Fine Collection, and all necessary requirements for the Library to manage day to day operations. The main objective of the application is to automate the existing system of manually maintain the records of the Book Issue, Book Return from the student, Stock Maintenance, Catalogue and Book Search to be computerized. So the Book Issue, Return, Searching will be faster. This application can be used by any Library to automate the process of manually maintaining the records related to the subject of maintaining the stock and Book Issues.

## 2.1 Features of library management system:

- Only basic knowledge of computers is required for operation of Library Management System. As it has user-friendly application interface.
- Library Management System is Customizable and User Configurable.
- An inbuilt Settings module makes Library Management System flexibility to cater to diverse organizational needs.
- It is build on .NET technology - one of the most latest and upcoming Technologies in the field of Information Technology, which makes you a forerunner in the world of Information technology.
- Library Management System brings information to the user's desktop through integration across all modules.
- Library Management System has pre-defined reports. These are used for normal reporting as well as Administration & Staff development purpose. Additionally, Library Management System can be easily customized for their own customized reports. Staff as well as student record is maintained
- Newspapers attendance is maintained
- Automatic fine fees calculation
- Keeps record of supplier’s and binder’s
- Customized Report designing
- Configurable as per user’s requirements

## 2.2 Functionality:

- Improved customer service through greater access to accurate information.
- Increased productivity and job satisfaction among staff members as it eliminates duplication of effort.
- More economical and safer means of storing and keeping track of information.
- Easier access to Information like management reports and stock etc, as well as more accurate and faster results from statistical analyses.
- Reduces errors and eliminating the ennui of long and repetitive manual processing.
- Greater accountability and transparency in operations.
- Improved efficiency and effectiveness in administration and management as it has unprecedented access to real-time information.
- More reliable security for sensitive and confidential information.
- Appropriate knowledge-based action and intervention can now take place in a timelier manner.

# 3.System Analysis

The purpose of the system analysis phase is to learn exactly how the current system operates, to determine and document what the system should do, and to recommend alternative solution.

## 3.1 The Current System Analysis

Any data related to the member and its transactions the library management's deals with the storage and manipulation of all those data. This data record system is manual and the work is done as follows:-

- A member issuing a book then all its details about its identification and books details is mentioned in a register manually.
- Member /borrower have to search his its own in the very big library and then borrow it further
- Members are given a library card in which librarian used to write the details of the book issued to the member.
- Library card helps them to keep in track about the book issued and dead line follower.

- Member are not able to issue /return the book until and unless he /she has that library card
- This card acts as a identity in the library

## 3.2 Problem in the Current Existing System

- Lack of security
- The lack of storage is common mistakes.
- Too much paper in the room of a large sum of money to take wastage. If you purchased a computer system to and from all of the paper used for our other purposes will make it even more free space.
- Poor data storage - all data is stored in filing cabinets. Data may be incorrect due to human error. A lot of data can be easily stolen.
- A lack of information
- Slow Retrieval of data - information stored in different locations, and the data is returned as long as it takes.
- If you are unable to find a book of your choice in a manual library system, trying to find a particular book in a lot of time and effort is spent.
- Manual systems to operate slowly. Instead of issuing and place, to take the books back to using a computer and a card index update will be a slow and laborious
- Staff with manual systems, mechanical, clerical tasks rather than liaising library visitors spent most of their time.
- Libraries manual library system, it is difficult to find new services to offer a wider range. For example, a library readers to access remotely, it can be placed on the list on its website; manual system, members visit the library to find information or to have a telephone.
- No more than one person can access the information at the same time, but at the same time through a computerized information system in the network can access the same data.
- Time-consuming
- It requires a lot of data to place the results.
- Of computer software, such as the check is repeated, such as the possibility of data duplication · Microsoft Access.
- Often lost in books, librarian, this does not need to know.

- Workers, members and books transaction records for the correct number.
- If manual record book data will be lost completely.
- Lots of manual labor required to keep a record.
- You cannot keep track of how many times in the register of workers unite to form a copy.
- The handwriting and a few human errors, for example, can be caused by an incorrect telephone number databases are not always reliable.

## 3.3 Recommendations

The only solution for the problem is to adapt the computerized support system to support their transaction system which will help them with the accurate and faster managements to produce:

- The system should allow anyone to browse the view the system but only the users can hire the books using their ID.
- The system should allow anyone to browse the view the system but only the users can hire the books using their ID.
- The system allow guest only to main page.
- Since the username is unique the system must given a message if the entered user name is not available.
- The system should allow user to login into the system.
- Upon successful login, a welcome message is displayed and the user will see the accounts page.
- The system should allow user to edit their profile detail.
- The system should allow user to search for books.
- The system should allow the user to do advance search or simple search.
- The system should allow user to reserve more than one book.
- The system should allow user to view their reserved book detail and last reserved book details.
- The system must update the library information such as new books as arrivals, fines for late submission.
- The system should allow only the administrator to modify the site contents.
- The system should allow the access level to the user and registered member.
- The system should allow the administrator to check for the updates to the database.

# 4. Feasibility Report

A feasibility study assesses the operational, technical and economic merits of the proposed project. The feasibility study is intended to be a preliminary review of the facts to see if it is worthy of proceeding to the analysis phase. From the systems analyst perspective, the feasibility analysis is the primary tool for recommending whether to proceed to the next phase or to discontinue the project.

The feasibility study is a management-oriented activity. The objective of a feasibility study is to find out if an information system project can be done and to suggest possible alternative solutions.

Projects are initiated for two broad reasons:

- Problems that lend themselves to systems solutions
- Opportunities for improving through: (a) upgrading systems (b) altering systems (c) installing new systems

A feasibility study should provide management with enough information to decide:

- Whether the project can be done?
- Whether the final product will benefit its intended users and organization
- What are the alternatives among which a solution will be chosen
- Is there a preferred alternative
- How beneficial or practical the development of an information system would be to an organization?

And for the System to be act as worth-while it should passed through some test that examine that it should proceed further or not. This series of test is commonly known as feasibility study on the system and it plays a very vital role for every system projects. Feasibility studies undergo four major analyses to predict the system to be success and they are as follows:-

1. Operational Feasibility
2. Technical Feasibility
3. Schedule Feasibility
4. Economic Feasibility

## 4.1 Operational Feasibility:-

Operational feasibility is a measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development .Operational feasibility reviews the willingness of the organization to support the proposed system. This is probably the most difficult of the feasibilities to gauge. In order to determine this feasibility, it is important to understand the management commitment to the proposed project. If the request was initiated by management, it is likely that there is management support and the system will be accepted and used. However, it is also important that the employee base will be accepting of the change. The operational feasibility is the one that will be used effectively after it has been developed. If users have difficulty with a new system, it will not produce the expected benefits. It measures the viability of a system in terms of the **PIECES** framework. The PIECES framework can help in identifying operational problems to be solved, and their urgency:

**P**erformance -- Does current mode of operation provide adequate throughput and response time?

- In comparison of the earlier process of maintaining data in the written mode on that contrast this system plays a very important role in maintain the book management system and makes the process of data entering so easier and user friendly.

**I**nformation -- Does current mode provide end users and managers with timely, pertinent, accurate and usefully formatted information?

- System provides end users and managers with timely, pertinent, accurate and usefully formatted information. Since all the user related information is being stored in the database against a unique user ID, it will provide for meaningful and accurate data to the librarian. The information handling in the current system is done manually. This results in scribbling of data and loss of validity of data. The information handling in the proposed system will be computerized and will automatically update. The human errors will be minimal. The data can be easily updated, modified when required and will be validated before the data is processed into the system.

**E**conomy -- Does current mode of operation provide cost-effective information services to the business? Could there be a reduction in costs and/or an increase in benefits?

- Determines whether the system offers adequate service level and capacity to reduce the cost of the business or increase the profit of the business. The deployment of the proposed

system, manual work will be reduced and will be replaced by an IT savvy approach. Moreover, it has also been shown in the economic feasibility report that the recommended solution is definitely going to benefit the organization economically in the long run. In the existing system the data are stored in ledgers and filingcabinets which require a lot of space and maintenance. Access to certain data can be restricted by creating different levels of user accessibility.

**C**ontrol -- Does current mode of operation offer effective controls to protect against fraud and to guarantee accuracy and security of data and information?

- As its database does not contain any confidential information which can be misused so on that contrast there should no use of any security corner for this system.

**E**fficiency -- Does current mode of operation makes maximum use of available resources, including people, time, and flow of forms?

- **Efficiency** work is to ensure a proper workflow structure to store patient data; we can ensure the proper utilization of all the resources. It determines whether the system make maximum use of available resources including time, people, flow of forms, minimum processing delay. In the current system a lot of time is wasted on paper work like making new records, updating records. The proposed system will be a lot efficient in maintaining the record and easily fetching out the required data.

**S**ervices -- Does current mode of operation provide reliable service? Is it flexible and expandable?

- The system is desirable and reliable services to those who need it and also whether the system is flexible and expandable or not. The proposed system is very much flexible for better efficiency and performance of the organization. The existing system can provide service only to a limited number of users. There is very little room for change and hardly any scope for expansion. The scalability of the proposed system will be inexhaustible as the storage capacity of the system can be increased as per requirement. This will provide a strong base for expansion. The new system will provide a high level of flexibility.

## 4.2 Technical Feasibility:-

A large part of determining resources has to do with assessing technical feasibility. It considers the technical requirements of the proposed project. The technical requirements are then compared to the technical capability of the organization. The systems project is considered technically feasible if the internal technical capability is sufficient to support the project requirements.

The analyst must find out whether current technical resources can be upgraded or added to in a manner that fulfils the request under consideration. This is where the expertise of system analysts is beneficial, since using their own experience and their contact with vendors they will be able to answer the question of technical feasibility.

The essential questions that help in testing the operational feasibility of a system include the following:

- Is the project feasible within the limits of current technology?
- Does the technology exist at all?
- Is it available within given resource constraints?
- Is it a practical proposition?
- Manpower- programmers, testers & debuggers
- Software and hardware
- Are the current technical resources sufficient for the new system?
- Can they be upgraded to provide to provide the level of technology necessary for the new system?
- Do we possess the necessary technical expertise, and is the schedule reasonable?
- Can the technology be easily applied to current problems?
- Does the technology have the capacity to handle the solution?
- Do we currently possess the necessary technology?

Automated library system deals with the modern technology system that needs the well efficient technical system to run this project. All the resource constrains must be in the favour of the better influence of the system. Keeping all this facts in mind we had selected the favourable hardware and software utilities to make it more feasible.

**Recommending the Hardware Part:-**

| Sr no. | Hardware used | Specification |
|---|---|---|
| **1.** | Monitor | LCD !5" screen (HP) |
| **2.** | Keyboard | Intex Wired |
| **3.** | Mouse | Intex Wired |
| **4.** | Hard drive | 40GB(gigabyte) hard drive |
| **5.** | Bar Code Reader | Iball |
| **6.** | Ram | 512 MB(mega byte) |
| **7.** | Processor | Pentium 3,665MHZ(mega hertz) |
| **8.** | Graphics: | On board graphics card,8MB(Megabyte of memory) |
| **9.** | System type | 1GHZ(gigahertz)32-bit(x86) |

**Recommended Software:-**

The Following software is used for the development of the System:-

1. Visual Studio 2008
2. MS Sql server
3. Ms Access
4. Ms word

And **Windows Xp** is used as an Operating System as it is more reliable and faster as compared to the other operating system.

## 4.3 Economic Feasibility:-

Economic analysis could also be referred to as cost/benefit analysis. It is the most frequently used method for evaluating the effectiveness of a new system. In economic analysis the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs. If benefits outweigh costs, then the decision is made to design and implement the system. An entrepreneur must accurately weigh the cost versus benefits before taking an action.

Possible questions raised in economic analysis are:

- Is the system cost effective?
- Do benefits outweigh costs?
- The cost of doing full system study
- The cost of business employee time
- Estimated cost of hardware
- Estimated cost of software/software development
- Is the project possible, given the resource constraints?
- What are the savings that will result from the system?
- Cost of employees' time for study
- Cost of packaged software/software development
- Selection among alternative financing arrangements (rent/lease/purchase)

The concerned business must be able to see the value of the investment it is pondering before committing to an entire system study. If short-term costs are not overshadowed by long-term gains or produce no immediate reduction in operating costs, then the system is not economically feasible, and the project should not proceed any further. If the expected benefits equal or exceed costs, the system can be judged to be economically feasible. Economic analysis is used for evaluating the effectiveness of the Proposed System. The economical feasibility will review the expected costs to see if they are in-line with the projected budget or if the project has an acceptable return on investment. At this point, the projected costs will only be a rough estimate. The exact costs are not required to determine economic feasibility. It is only required to determine if it is feasible that the project costs will fall within the target budget or return on investment. A rough estimate of the project schedule is required to determine if it would be feasible to complete the systems project within a required timeframe. The required timeframe would need to be set by the organization.

## Cost Benefits analysis:-

It is the process of analyzing the financial facts associated with the system development projects performed when conducting a preliminary investigation. The purpose of a cost/benefit analysis is to answer questions

Such as:

- Is the project justified (because benefits outweigh costs)?
- Can the project be done, within given cost constraints?
- What is the minimal cost to attain a certain system?
- What is the preferred alternative, among candidate solutions?

Following is the figure showing the approx. amount of cost and benefit to the system:

## TANGIBLE COST:-

| DEVELOPMENT COSTS | |
|---|---|
| **Windows Xp** | INR 1300 |
| **MS office** | INR |
| **Visual Studio** | INR |
| **Monitor** | INR 4000 |
| **Key Board** | INR 450 |
| **Mouse** | INR 200 |
| **Bar Code Reader** | INR 2500 |
| **Hard Drive** | INR 2000 |
| **Ram** | INR 600 |
| **Graphics** | INR 1500 |
| **Processor** | INR 2000 |
| **TOTAL DEVELOPMENT COST** | **INR 15000** |

## ITANGIBLE COST

OPERATIONAL COSTS

| | |
|---|---|
| **Software Upgrades** | INR 1000 |
| **Licensing for Software (After 1 year)** | INR 10000 |
| **Hardware Upgrades (1 PCs)** | INR 1000 |
| **User Training** | INR 1000 |
| **Network Technician + Computer Operator** | INR 50000 |
| **TOTAL OPERATIONAL COSTS** | **INR 62000** |

## 4.4 Schedule Feasibility:-

We may have the technology, but that doesn't mean we have the skills required to properly apply that technology. True, all information systems professionals can learn new technologies. However, that learning curve will impact the technical feasibility of the project, specifically, it will impact the schedule.

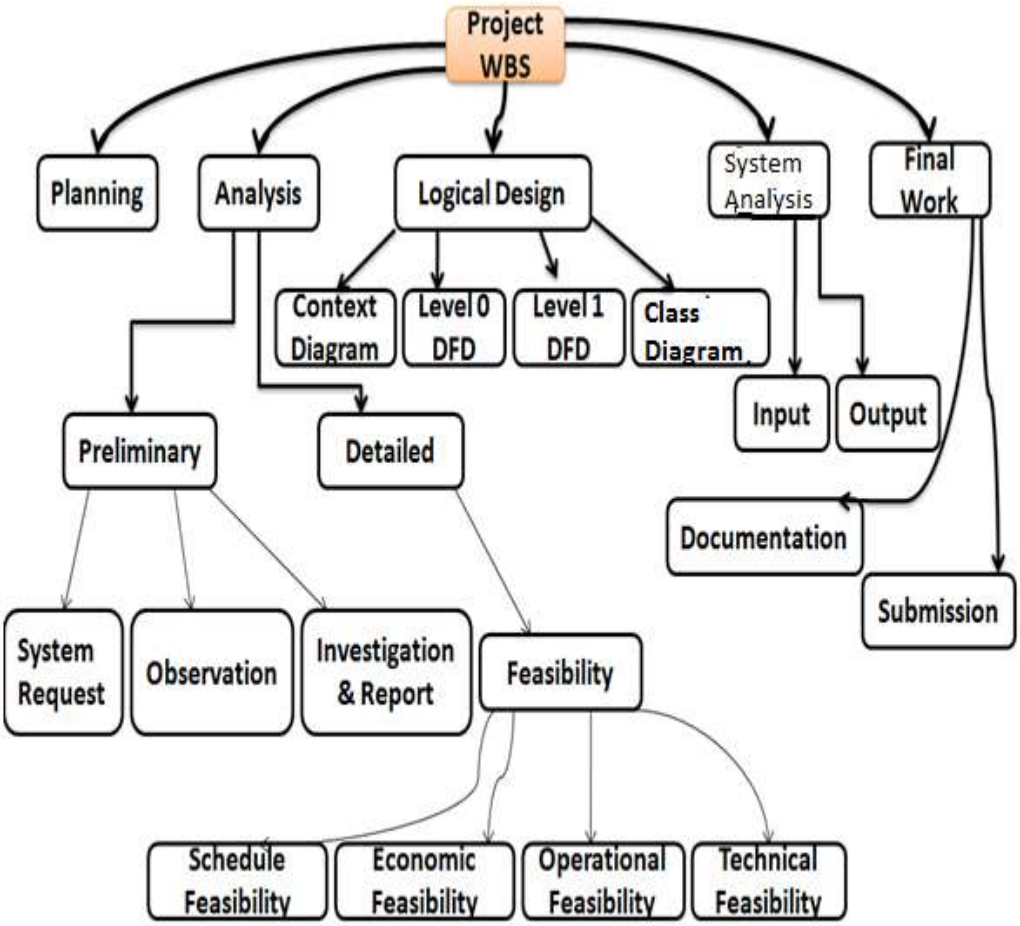
- Work load matrix
- Work Breakdown Structure
- Gantt chart
- Pert chart

## 4.4.1 Workload Matrix

| Group Components | | | | |
|---|---|---|---|---|
| **Component Name** | **Max Marks** | **Member 1** | **Member 2** | **Member 3** |
| Introduction | 5 | 70% | 10% | 20% |
| Feasibility report | 10 | 60% | 20% | 20% |
| Selection of Methodology | 5 | 25% | 50% | 25 % |
| Selection of investigation techniques | 10 | 50% | 25% | 25% |
| Analysis and logical design | 30 | 30% | 20% | 50% |
| Overall Documentation | 10 | 30% | 20% | 50% |

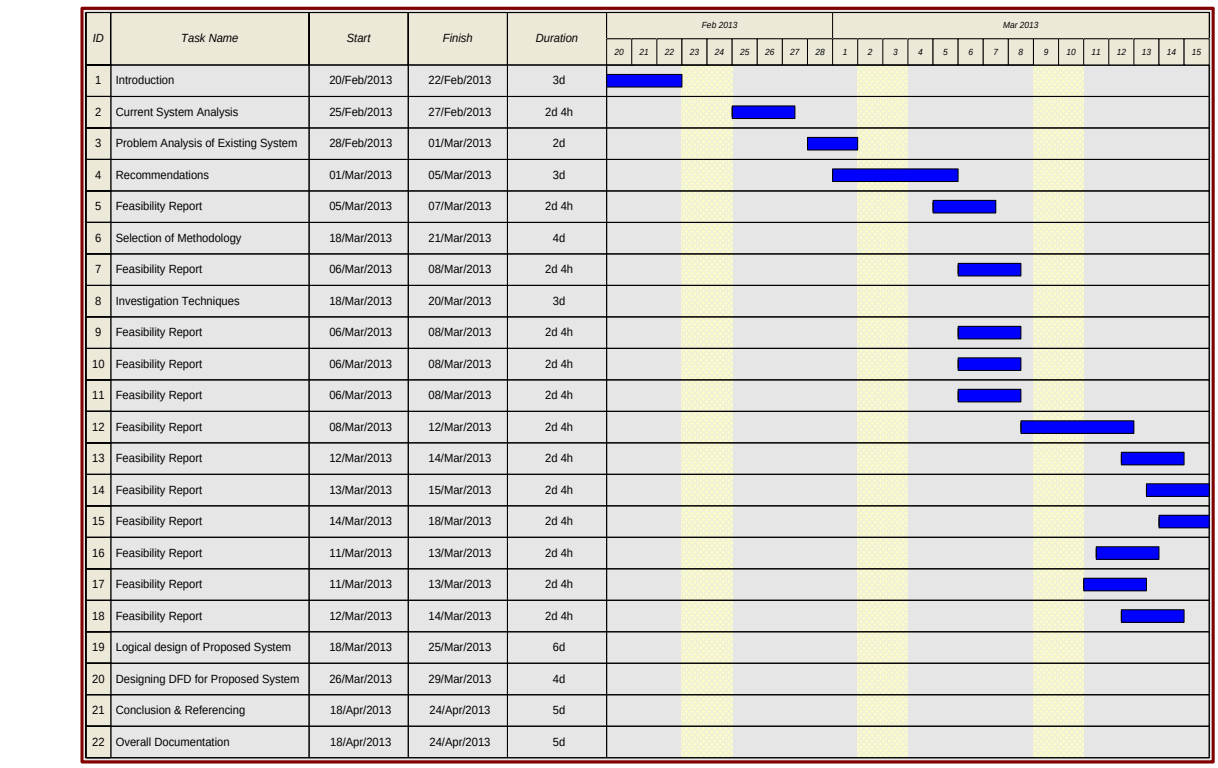
| Individual Components | | |
|---|---|---|
| **Member 1** | **Marks Allocated** | **Student Name** |
| Logical design | 10 | Avinash Verma (PT1181128) |
| Critical analysis of design | 5 | |
| **Member 2** | | |
| Logical design | 10 | Rakesh Verma (PT1181130) |
| Critical analysis of design | 5 | |
| **Member 3** | | |
| Logical design | 10 | Kumar Abhishek (PT1181106) |
| Critical analysis of design | 5 | |

## 4.4.2 Work Breakdown Structure

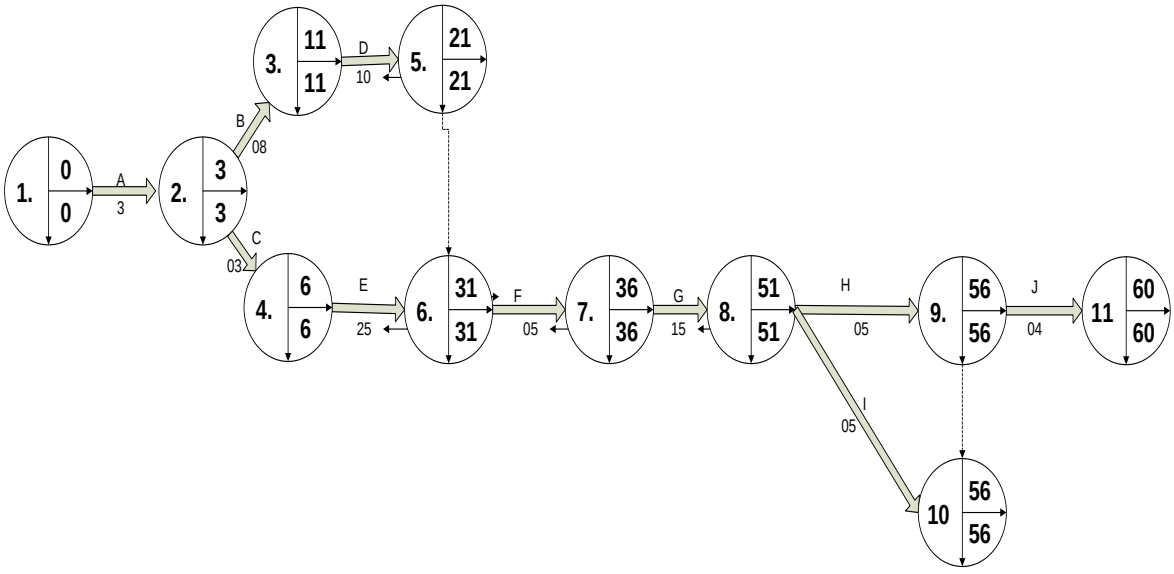


## 4.4.3 Gantt chart

| ID | Task Name | Start | Finish | Duration |
|---|---|---|---|---|
| 1 | Introduction | 20/Feb/2013 | 22/Feb/2013 | 3d |
| 2 | Current System Analysis | 25/Feb/2013 | 27/Feb/2013 | 2d 4h |
| 3 | Problem Analysis of Existing System | 28/Feb/2013 | 01/Mar/2013 | 2d |
| 4 | Recommendations | 01/Mar/2013 | 05/Mar/2013 | 3d |
| 5 | Feasibility Report | 05/Mar/2013 | 07/Mar/2013 | 2d 4h |
| 6 | Selection of Methodology | 18/Mar/2013 | 21/Mar/2013 | 4d |
| 7 | Feasibility Report | 06/Mar/2013 | 08/Mar/2013 | 2d 4h |
| 8 | Investigation Techniques | 18/Mar/2013 | 20/Mar/2013 | 3d |
| 9 | Feasibility Report | 06/Mar/2013 | 08/Mar/2013 | 2d 4h |
| 10 | Feasibility Report | 06/Mar/2013 | 08/Mar/2013 | 2d 4h |
| 11 | Feasibility Report | 06/Mar/2013 | 08/Mar/2013 | 2d 4h |
| 12 | Feasibility Report | 08/Mar/2013 | 12/Mar/2013 | 2d 4h |
| 13 | Feasibility Report | 12/Mar/2013 | 14/Mar/2013 | 2d 4h |
| 14 | Feasibility Report | 13/Mar/2013 | 15/Mar/2013 | 2d 4h |
| 15 | Feasibility Report | 14/Mar/2013 | 18/Mar/2013 | 2d 4h |
| 16 | Feasibility Report | 11/Mar/2013 | 13/Mar/2013 | 2d 4h |
| 17 | Feasibility Report | 11/Mar/2013 | 13/Mar/2013 | 2d 4h |
| 18 | Feasibility Report | 12/Mar/2013 | 14/Mar/2013 | 2d 4h |
| 19 | Logical design of Proposed System | 18/Mar/2013 | 25/Mar/2013 | 6d |
| 20 | Designing DFD for Proposed System | 26/Mar/2013 | 29/Mar/2013 | 4d |
| 21 | Conclusion & Referencing | 18/Apr/2013 | 24/Apr/2013 | 5d |
| 22 | Overall Documentation | 18/Apr/2013 | 24/Apr/2013 | 5d |




## 4.4.4 Pert chart



| ACTIVITY | PREDECESSOR | DURATION(days) |
|---|---|---|
| **A** – Introduction | - | 03 |
| **B** – System Analysis | A | 08 |
| **C** – Problem found | B | 03 |
| **D** – Recommendations | B | 10 |
| **E** – Selection of Methodology | C | 25 |
| **F** – Feasibility Report | E | 05 |
| **G** – Logical Design for System | F | 15 |
| **H** –DFD for System | G, D | 06 |
| **I** – Context Diagram | J | 05 |
| **J** – Overall Documentation | I,H | 04 |

# 5.Selection of Methodology

As per the project management there should be a proper selection of the methodology so on that contrast we have to select the methodology for our project i.e. Library Management System. Basically there are two types of methodology used for the projects Structured System Analysis and Design Methodology and Object Oriented Methodology. We have chosen Object Oriented Methodology.

## 5.1 Problems found in Structured Programming

Structured programming can be defined as a Software application programming technique that follows a top down design approach with block oriented structures. This style of programming is characterized by the programmer's tendency to divide his program source code into logically structured blocks which would normally consist of conditional statements, loops and logic blocks. This style of programming has the implementation of the source code being processed in the order in which bits of the code have been typed in.

## 5.2 Disadvantages of Structured Programming

- **Problem: Lack of Encapsulation:**

But while the encapsulation concept is a powerful working tool, its lack of availability in structured programming means that programs will be longer. The same or similar code will appear in more than one location. This also means that the programs will have a greater chance of errors. The testing will be lengthy as well since every piece of code will have to be tested. Even if the code is without errors in one place, the same piece of code may appear in a different part of the program and could have problems there.

- **Problem: Same Code Repetition:**

Because the code that is written may appear in different parts of the program, it can be vulnerable to different problems because of its location. Programs have variables, which mean that they can take on different values at different parts of the program. So the testing that is necessary to develop an error-free program can be time consuming.

- **Lack of Information Hiding:**

Information hiding involves isolating design decisions in a computer program that have the greatest chance to change. This protects other parts of the program from modifications if the design decision is changed. The protection involves providing a stable interface (a point of interaction between components, either hardware or software) which protects the rest of the program from the details that are most likely to change.

However, structured programming has no such control. The possibility of spill over from the effects of coding to other areas is easily possible. For example, once code is executed in one part of the program, variables that have a value may clash with the same variable in another part of the program. The possibility that the appearance of the first variable will dominate the second appearance may cause serious errors. Worse, the debugging efforts might be stymied since the code will look correct. You cannot hide the results from one part of the program as they may influence another part.

- **Time and Money:**

The biggest problem with the SSADM system is that it takes a great deal of time. When a business takes so much time to analyze the project, it may make it difficult to create the

information system by a desired end date. There is a large delay between the inception of the project and the delivery of the system. If any employees of a company are not trained in the SSADM techniques, the company will need to spend even more time and money training them in this difficult system.

## 5.3 Reasons for selection of Methodology

- **Object Oriented Methodology:**

Object-oriented approach combines data and processes (called methods) into single entities called objects. Objects usually correspond to the real things an information system deals with, such as customers, suppliers, contracts, and rental agreements. Object-oriented model is able to thoroughly represent complex relationships and to represent data and data processing with a consistent notation, which allows an easier blending of analysis and design in an evolutionary process. The goal of object-oriented approach is to make system elements more reusable, thus improving system quality and the productivity of systems analysis and design (Hoffer et al. 2002). Though systems analysis is closed associated with design, this paper tries to focus on analysis part of the methodology.

- **Mechanism of Object-oriented Approach:**

The principals of objects, encapsulation, inheritance, and polymorphism are the foundation for object-oriented systems development. To understand and express the essential and interesting features of an application in the complex real world, an object-oriented model is built around objects. An object encapsulates both data and behaviour, implying that analysts can use the object-oriented approach for both data modelling and process modelling.

Specific objects in a system can inherit characteristics from the global instance of an object. For example, many types of objects may have a name and a creation date. Specific objects can inherit these global characteristics from parent objects that include only global characteristics. Objects can inherit characteristics from more than one parent object. Inheritance attempts to avoid the redundant definition of similar characteristics that can be embodied at higher levels in the system (Cackowski 2000).

- **Unified Modelling Language:**

The Unified Modelling Language (UML) is an object-oriented language for specifying, visualizing, constructing, and documenting the artefacts' of software systems, as well as for business modelling (UML Document Set, 2001). The UML was developed by Rational Software and its partners. It is the successor to the modelling languages found in the Booch (Booch 1994), OOSE/Jacobson, OMT and other methods.

- **Use-case Modelling:**

First adopted by Jacobson et al. (1992), use-case modelling is developed in the analysis phase of the object-oriented system development life cycle. Use-case modelling is done in the early stages of system development to help developers gain a clear understanding of the functional requirement of the system, without worrying about how those requirements will be implemented.

A use-case is a representation of a discrete set of work performed by a use (or another system) using the operational system (). A use-case model consists of actors and use cases. An actor is an external entity that interacts with the system and a use case represents a sequence of related actions initiated by an actor to accomplish a specific goal (Hoffer et al. 2002).

- **Class Modelling:**

There are many new terms in object-oriented approach. Some have already been introduced above. An object is the most fundamental element in OO approach, which has a well-defined role in the application domain, and has state, behaviour, and identity. A class is a set of objects that share the same attributes, operations, methods, relationships, and semantics. A class may use a set of interfaces to specify collections of operations it provides to its environment.

Object modelling or class modelling is the key activity in object-oriented development. If the use cases contain errors, then all is not lost. If the class model contains errors then all may well be lost. The quality of the resulting system in object-oriented development is essentially a reflection of the quality of the class model. This is because the class model sets the underlying foundation upon which objects will be put to work. A quality class model should provide a flexible foundation upon which systems can be assembled in component-like fashion. A poor

class model results in a shaky foundation upon which systems will grind to a halt and buckle under the threat of change (Artisan 2001).

- **Object-Oriented Analysis:**

Object Orientation provides a way of representing the elements, behaviours and data of the business world as objects that interact with one another in support of a business function or process. The modular and self contained nature of object orientation helps to localise the impact of change across the system.

This fundamental change to software development will make the software systems that you design and build using Object principles and technologies far easier for your IT project teams and businesses to:

- Develop and deploy.
- Change and maintain.
- Understand and use by the business and operational communities.

## 5.4 Object-Oriented Design

This module on object oriented design describes the role of design activities in the development of object oriented systems. We describe the relationship between design activities and other parts of the development process. Outline a variety of issues that are faced in designing the system from the point of view of the architectural view.

We describe in some detail the techniques and mechanisms used for implementing the kind of requirements that you are likely to encounter in the development of object oriented systems.

## 5.5 Object Modelling Case Study

In this module we will work through the creation of a set of models using business and object modelling techniques for a fictional business problem. This sort of worked example is often called a Case Study.

We look at the background of a business and the problem to be solved – our example business is the Proteus Discount Warehouse, a no-frills business that sells well known brand goods at competitive prices in downtown and edge-of-town stores using an in-store catalog and through its internet web site store.

## 5.6 Benefits of Object-Oriented Approach:

Object-oriented databases make the promise of reduced maintenance, code reusability, real world modelling, and improved reliability and flexibility. However, these are just promises and in the real world some users find that the object-oriented benefits are not as compelling as they originally believed. For example, what is code reusability? Some will say that they can reuse much of the object-oriented code that is created for a system, but many say there is no more code reusability in object-oriented systems than in traditional systems. Code reusability is a subjective thing, and depends heavily on how the system is defined. The object-oriented approach does give the ability to reduce some of the major expenses associated with systems, such as maintenance and development of programming code. Here are some of the benefits of the object-oriented approach:

- Reduced Maintenance: The primary goal of object-oriented development is the assurance that the system will enjoy a longer life while having far smaller maintenance costs. Because most of the processes within the system are encapsulated, the behaviours may be reused and incorporated into new behaviours.
- Real-World Modelling: Object-oriented system tends to model the real world in a more complete fashion than do traditional methods. Objects are organized into classes of objects, and objects are associated with behaviours. The model is based on objects, rather than on data and processing.
- Improved Reliability and Flexibility: Object-oriented system promise to be far more reliable than traditional systems, primarily because new behaviours can be "built" from existing objects. Because objects can be dynamically called and accessed, new objects may be created at any time. The new objects may inherit data attributes from one, or many other objects. Behaviours may be inherited from super-classes, and novel behaviours may be added without effecting existing systems functions.
- High Code Reusability: When a new object is created, it will automatically inherit the data attributes and characteristics of the class from which it was spawned. The new object will also inherit the data and behaviours from all super classes in which it participates. When a user creates a new type of a widget, the new object behaves "wigitty", while having new behaviours which are defined to the system.

## 5.7 The following elements are used in OOP (Object Oriented Programming):

Classes - is a collection of related properties, methods, and events that are grouped in one collection. It contains the code which defines the data type, state, and behaviours of an object. A class is like a generalized blueprint for building an object.

Instances - is a specific object that can uses the properties and methods of a class.

Properties - characteristics that define an object.

Methods - actions that an object can perform.

Events - actions that can trigger the execution of a function, or instructions.

## 5.8 Benefits of Object Oriented Programming:

a. Modularity: The source code for a class can be written and maintained independently of the source code for other classes. Once created, an object can be easily passed around inside the system.

b. Information-hiding: By interacting only with an object's methods, the details of its internal implementation remain hidden from the outside world.

c. Code re-use: If a class already exists, you can use objects from that class in your program. This allows programmers to implement/test/debug complex, task-specific objects, which you can then use in your own code.

d. Easy Debugging: If a particular object turns out to be a problem, you can simply remove it from your application and plug in a different object as its replacement. This is analogous to fixing mechanical problems in the real world. If a bolt breaks, you replace it, not the entire machine.

## 5.9 Summary of Object-Oriented Concepts:

a. Everything is an object.

b. Computation is performed by objects communicating with each other, requesting that other objects perform actions. Objects communicate by sending and receiving messages. A message is a request for action, bundled with whatever arguments may be necessary to complete the tasks.

c. Each object has its own memory, which consists of other objects.

d. Every object is an instance of a class. A class simply represents a grouping of similar objects, such as Integers or lists.

e. The class is the repository for behaviour associated with an object. That is, that all objects that are instances of the same class can perform the same actions.

f. Classes are organized into a singly rooted tree structure, called the inheritance hierarchy. Memory and behaviour associated with instances of a class are automatically available to any class associated with a descendant in this tree structure.

# 6. Investigation Techniques

Only making the project is not only the task it requires removing the errors and making the project more efficient and flexible. After throwing the project to the market the information about the updation is only be retrieved by following some investigation technique.

Basically there are Four techniques by which information can be gathered they are as follows:-

- ✓ Observation
- ✓ Interview
- ✓ Document Analysis
- ✓ Questionnaire

Out of these four techniques, we had chosen the technique of interview and questionnaire for the development of our project. Since this all activity has its own features of finding the development facts but we have selected the technique i.e. Interview and Questionnaire that favours the economical and projects scheduled time. Following are reasons with advantage for selecting these techniques.

We had selected Interview and questionnaire as an investigation technique because it has more advantage over other techniques. Some of them are follows:-

## 6.1 Disadvantages of Observation Method

1. The most limiting factor in the use of observation method is the inability to observe such things such as attitudes, motivations, customers/consumers state of mind, their buying motives and their images.

2. It also takes time for the investigator to wait for a particular action to take place.
3. Personal and intimate activities, such as watching television late at night, are more easily discussed with questionnaires than they are observed.
4. Cost is the final disadvantage of observation method. Under most circumstances, observational data are more expensive to obtain than other survey data. The observer has to wait doing nothing, between events to be observed. The unproductive time is an increased cost.

## 6.2 Interviews

### 6.2.1 Reasons for using interviews

Interviews are a useful method to:

- Investigate issues in an in depth way
- Discover how individuals think and feel about a topic and why they hold certain opinions
- Investigate the use, effectiveness and usefulness of particular library collections and services
- Inform decision making, strategic planning and resource allocation
- Sensitive topics which people may feel uncomfortable discussing in a focus group
- Add a human dimension to impersonal data
- Deepen understanding and explain statistical data.

### 6.2.2 Advantages of interviews

The main advantages of interviews are:

- they are useful to obtain detailed information about personal feelings, perceptions and opinions
- they allow more detailed questions to be asked
- they usually achieve a high response rate
- respondents' own words are recorded
- ambiguities can be clarified and incomplete answers followed up
- precise wording can be tailored to respondent and precise meaning of questions clarified (e.g. for students with English as a Second Language)

- interviewees are not influenced by others in the group
- Some interviewees may be less self-conscious in a one-to-one situation.

### 6.2.3 Along with the advantages their also must be some negative aspects:-

The main disadvantages of interviews are:

- they can be very time-consuming: setting up, interviewing, transcribing, analyzing, feedback, reporting
- they can be costly
- Different interviewers may understand and transcribe interviews in different ways.

But this does not affect our analysis so have selected in our program, now comes the matter of consideration.

Following are the questions to be asked by the user and end user for collecting the information about the program:-

1. Have you face any problem regarding transaction of the book?
2. Is it showing the factual report about the books in the library?
3. Are you capable of doing the right calculation of the fine by the student?
4. Are you easily able to fetch the books availability?
5. Are you facing any problem with adding, deleting or updating the records of books details?
6. Are you facing any problem with adding, deleting or updating the records of member details?
7. Do you think that system should be needed for maintain the books transactions?
8. How do you calculate the late fine for the late return of books?

## 6.3 Questionnaire

### 6.3.1 The advantages of questionnaires:

1. Practical
2. Large amounts of information can be collected from a large number of people in a short period of time and in a relatively cost effective way
3. Can be carried out by the researcher or by any number of people with limited affect to its validity and reliability

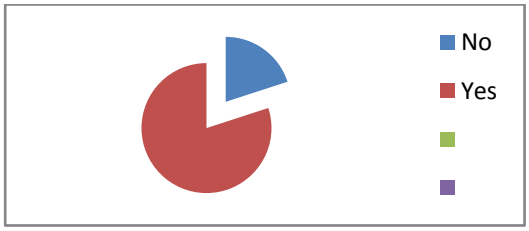
4. The results of the questionnaires can usually be quickly and easily quantified by either a researcher or through the use of a software package
5. Can be analyzed more 'scientifically' and objectively than other forms of research
6. When data has been quantified, it can be used to compare and contrast other research and may be used to measure change
7. Positivists believe that quantitative data can be used to create new theories and / or test existing hypotheses

To complete our research work for the system "Library Management System", we are collecting the information from the admin and others who all belong to the system via this questionnaire. Your input concerning the system would be very valuable and would help us to make several changes which are to be required and it would certainly increase our productivity and efficiency of the system also. We greatly appreciate it if you would complete the following questionnaire and return it.

1. Have you developed any system to the keep records books Transaction?

☐ No

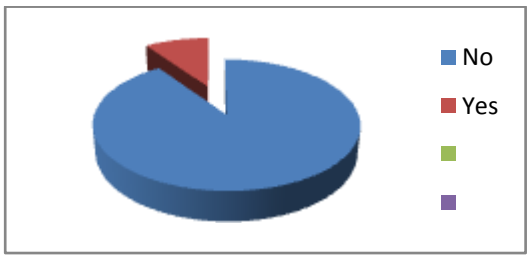
☐ Yes




2. Have you developed any system to the keep records borrowers?

☐ No

☐ Yes



3. Do you maintain the record details for the issued book?

☐ No

☐ Yes

4. What is the method to maintain the record?

☐ Computerized

☐ Manually

5. Are you able to check the book availability in the time of issuing?

☐ No

☐ Yes

6. Are you facing problem in maintaining the books transaction?

☐ No

☐ Yes

7. How do you add books while arrival of new books to library?

☐ Computerized

☐ Manually

8. Do you feel that computerized library management system is best approach for transaction of book in the organization?

☐ Yes

☐ No

☐ Can't say

This question is common for both librarian and end user. We conducted a survey on this topic. Out of 20 librarians type of audience and 18 people were saying that computerized library management system is best approach.

9. What will you suggest about the working of your current library management system?

☐ Extraordinary

☐ Very Satisfactory

☐ Satisfactory

☐ Poor

The question is common for both librarian and end user. Developer has conducted a survey on this topic. Out of 30 people from different background almost 57% were unsatisfied on their current system.31% were satisfied,10 were over satisfied and 2% were saying, it is extraordinary so we understands, it is necessary to include such a secure system.

10. Do you feel that your system is suffering from security and other massive threat related to loss of confidential data?

☐ Yes

☐ No

☐ Can't say

75% were saying their present system is suffering information theft they are suffering different kind security related issues.15% were saying their system is secure somehow.10% don't know whether they are secure or not. So we came to conclusion about developing system with no security issue.

11. Rate your difficulty facing to perform various books and student related operation?

☐ Extremely difficult

☐ Satisfactory

☐ Somewhat difficult

Librarian can't check each and every user.60% was agreed on saying extremely difficult, 30% have agreed on somewhat difficult and 10% were satisfied on their performance.

12. Is there any need for centralized database for controlling all the function of system?

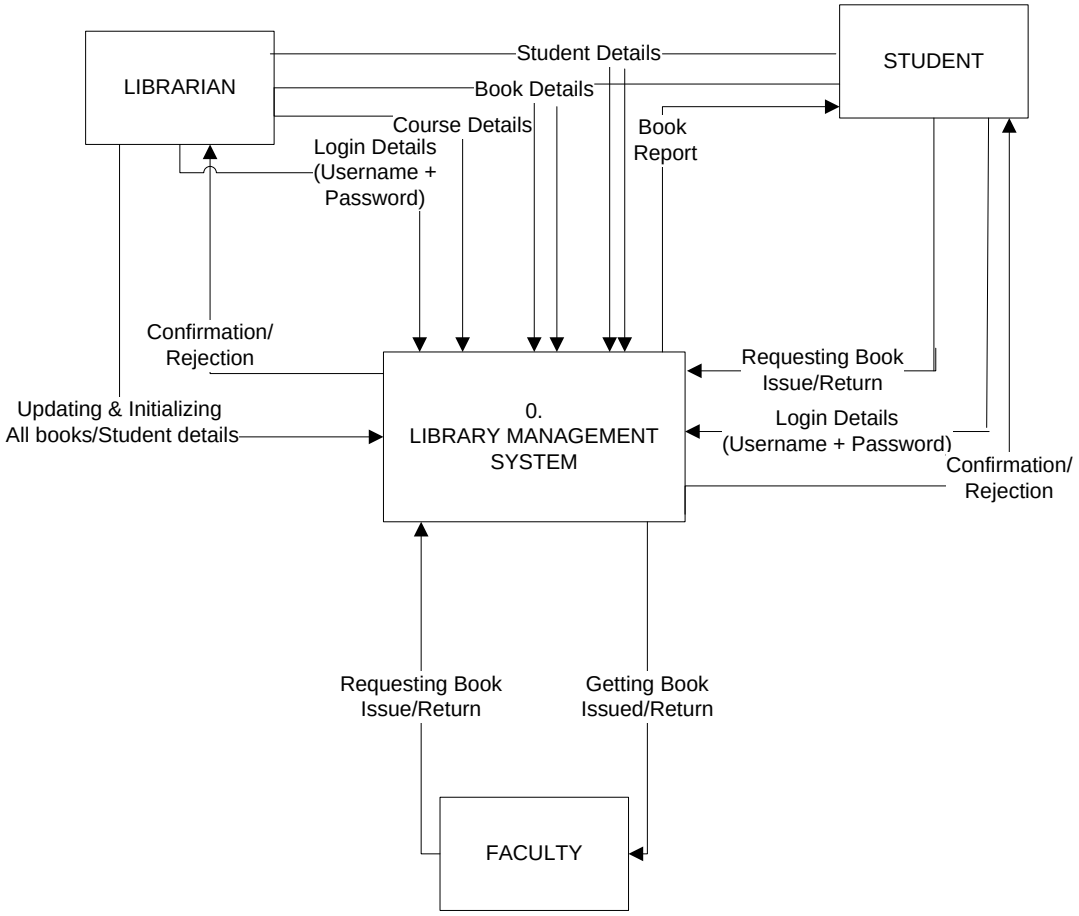
☐ Yes

☐ No

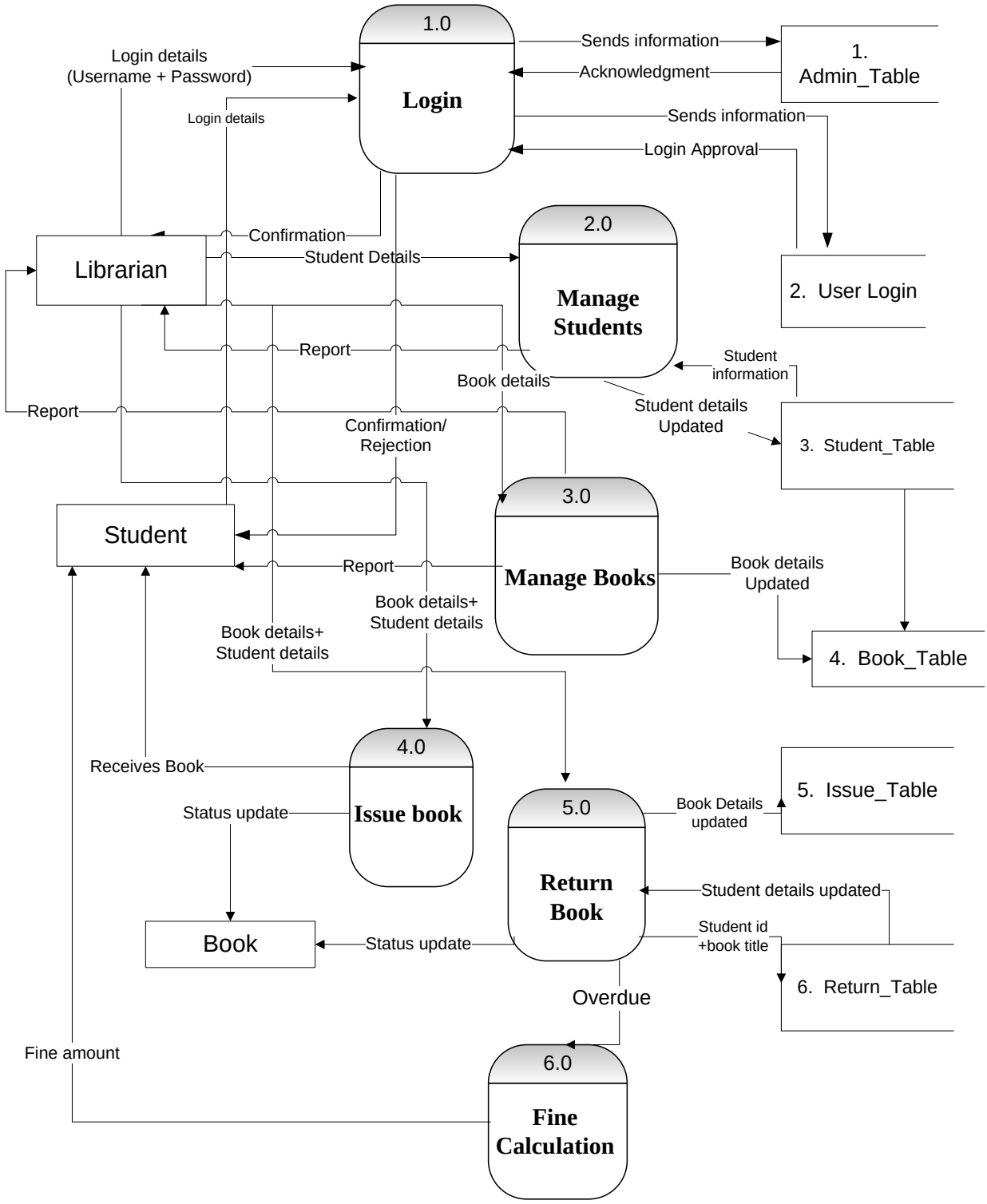
For this analysis, 85% administrator people agreed on there must be a centralized database for monitoring all activity. Others are still believed in manual controlling.

# 7. Data Flow Diagram

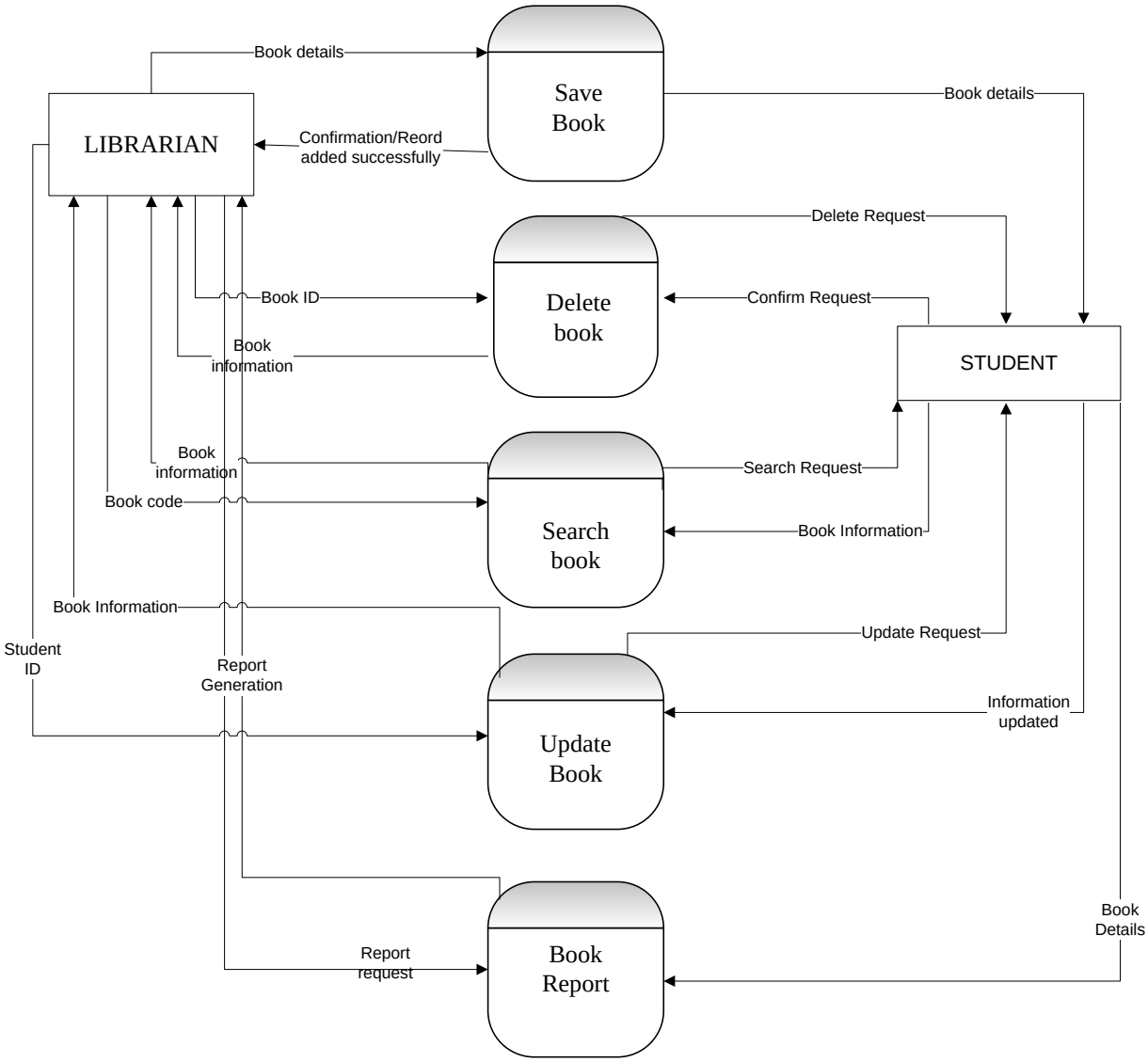
## 7.1 Context Diagram



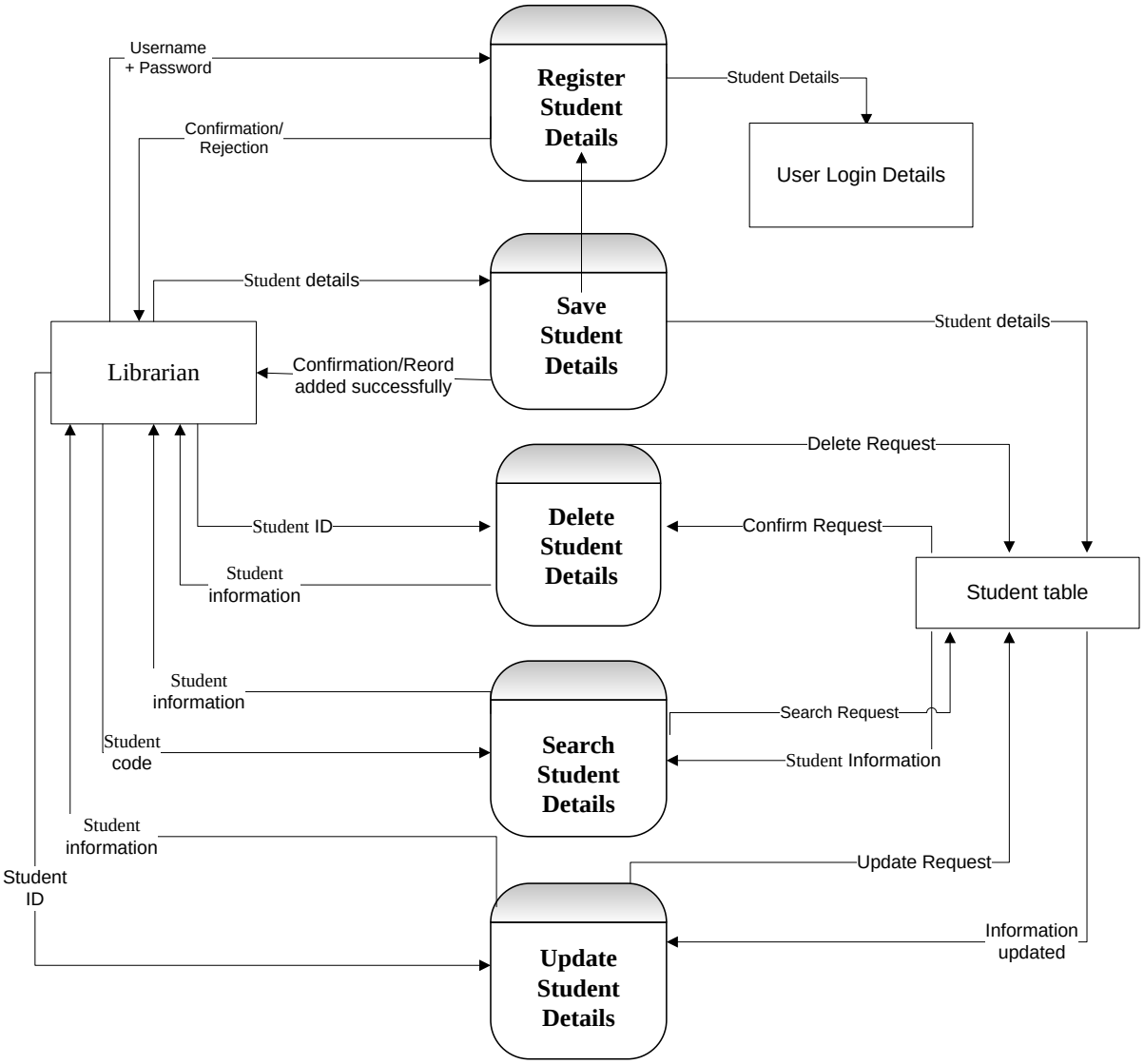
## 7.2 Level 0 DFD



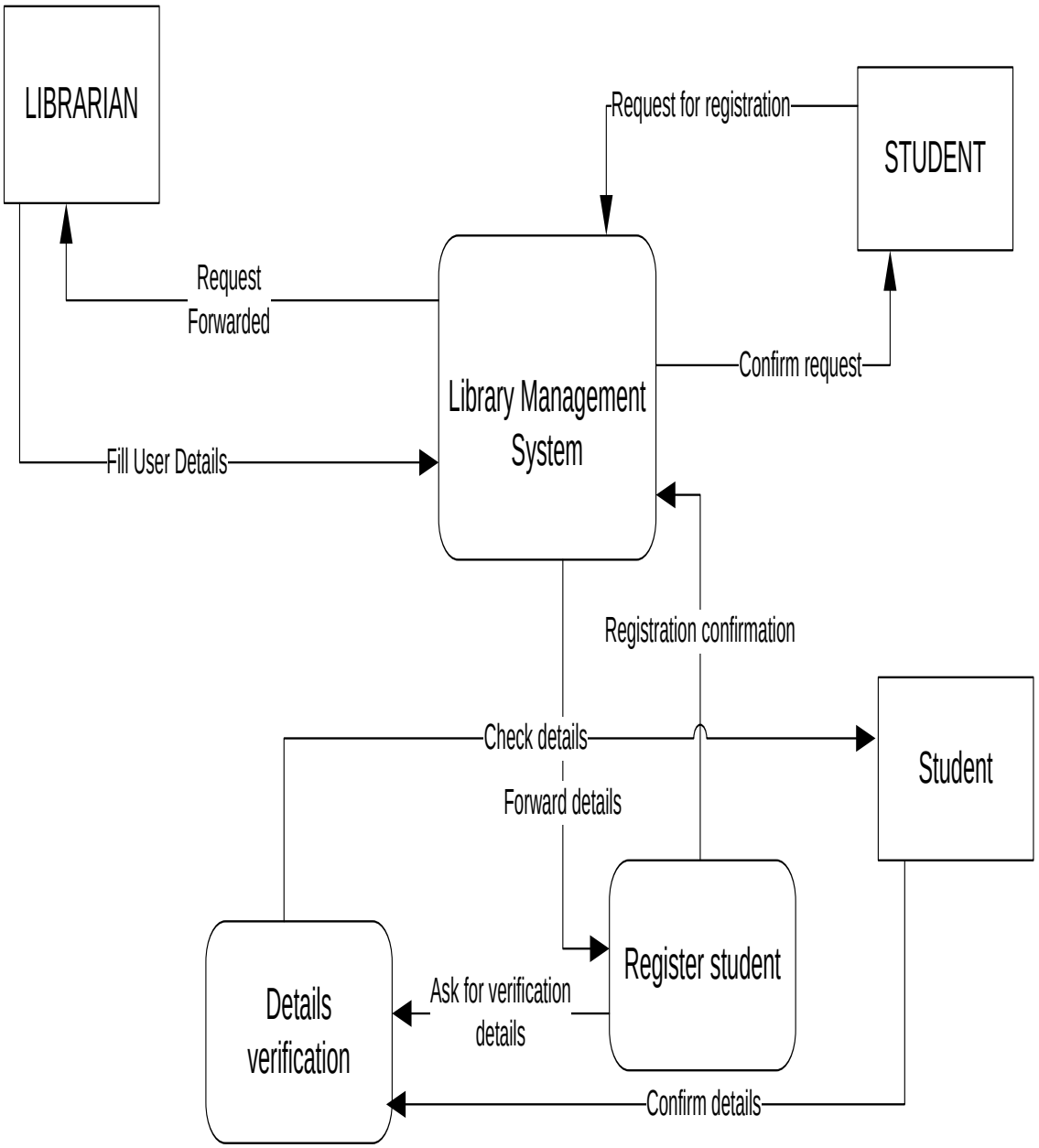
## 7.3 Level 1 DFD (Book)



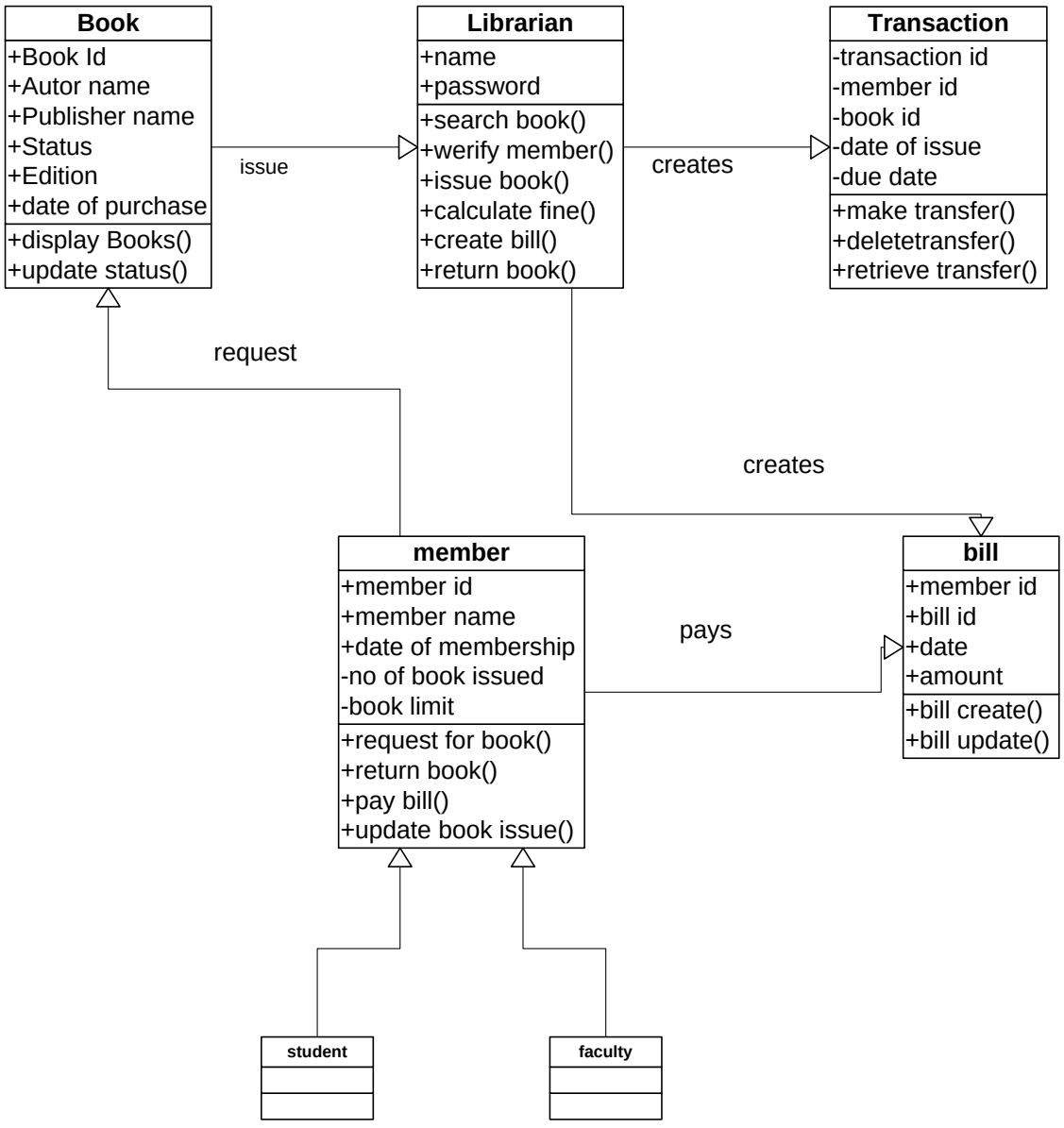
## 7.4 Level 1 DFD (Student)



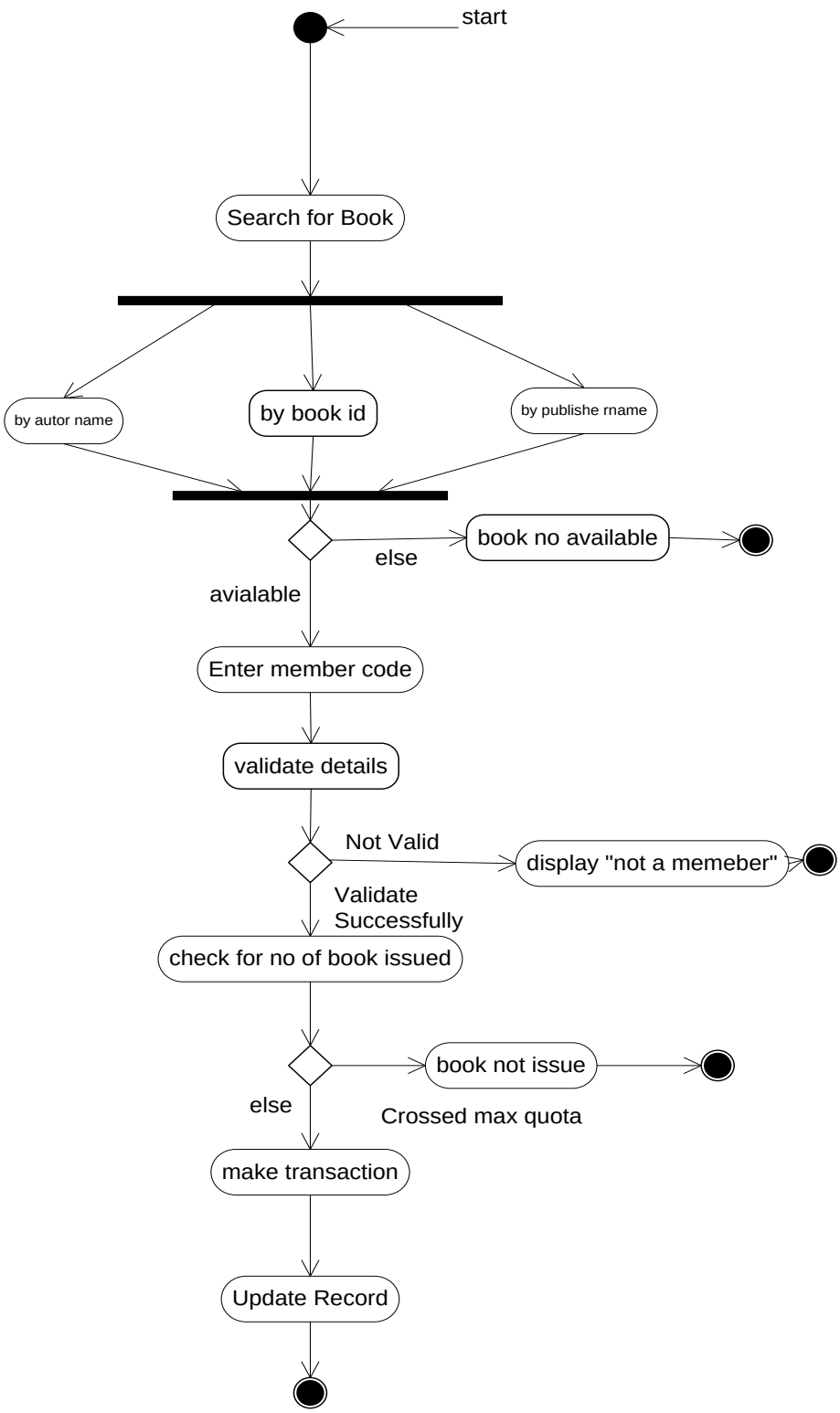
## 7.5 Level 2 DFD



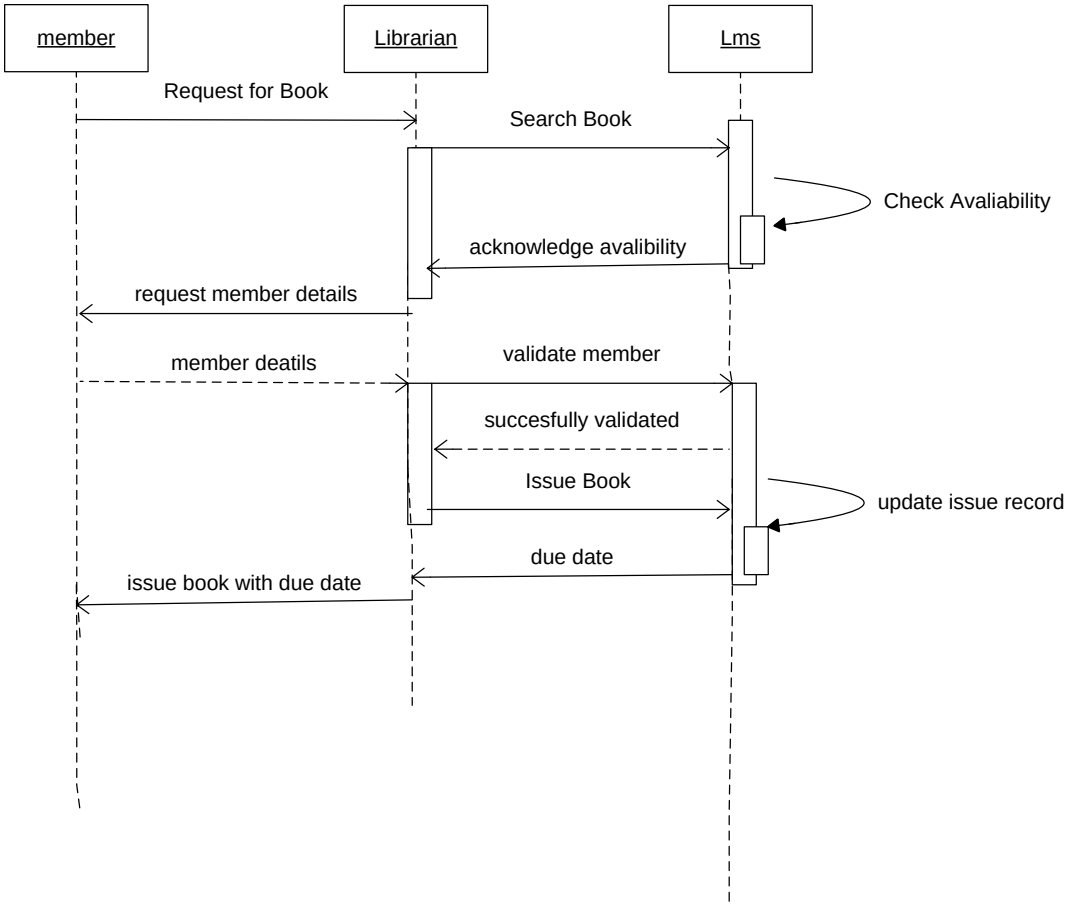
## 7.6 Class Diagram



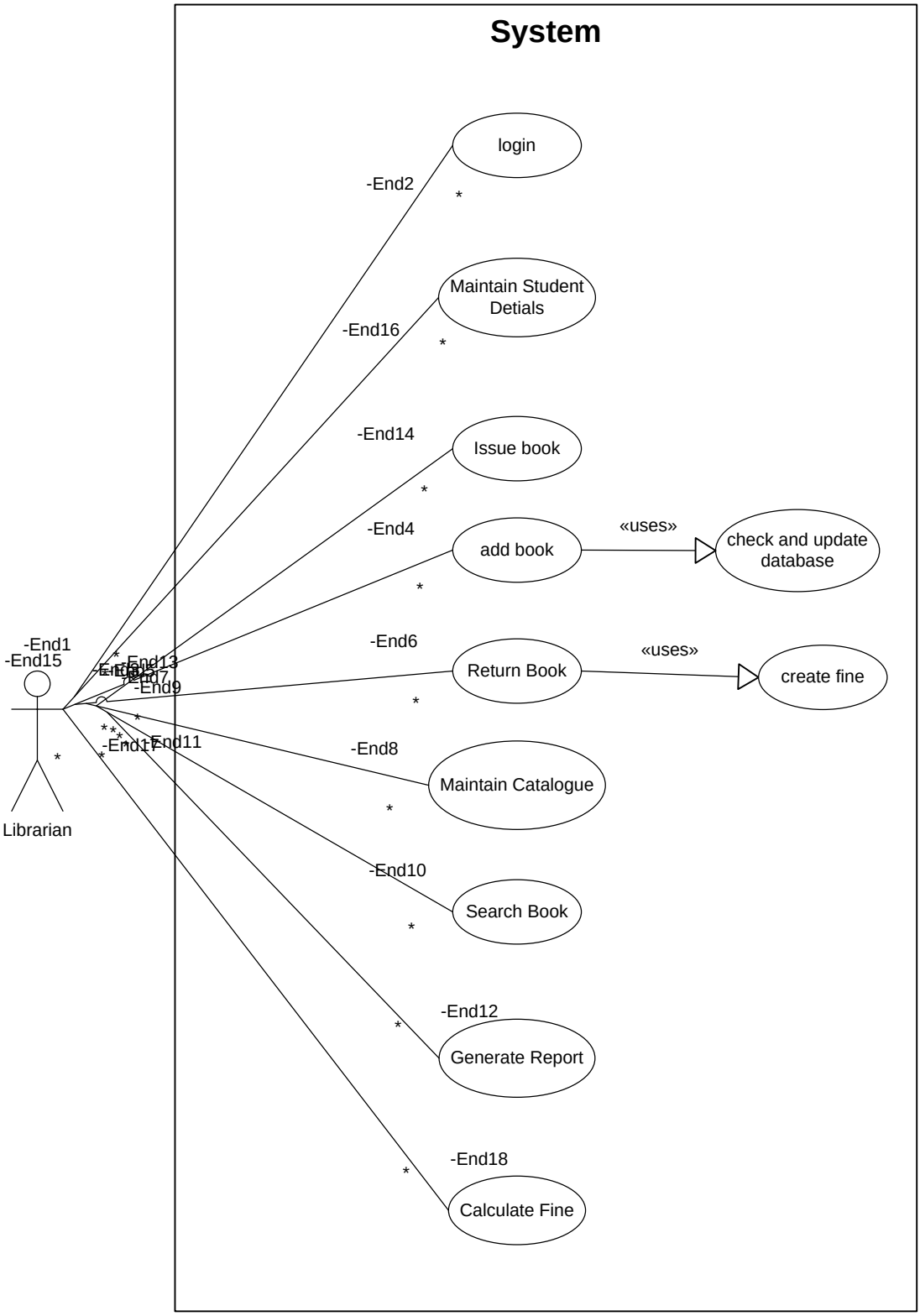
## 7.7 Activity Diagram



## 7.8 Sequence Diagram



## 7.9 Use Case Diagram



## 7.10 Entity Relationship Diagram

*There are basically 3 things which we consider while making ERD.*

### ENTITY

An entity is something, real or abstract, about which we store information. *For our system there are basically these 3 entities:*

1. Librarian
2. Student
3. Book

### RELATIONSHIP

A relationship is an association that exists among entities. *For our system we have following relationships among 3 specified entities:*

- One Librarian can register many Students (0:N)
- One Librarian can add many Students (0:N)
- One Librarian can search many Students (0:N)
- One Librarian can delete many Students (0:N)
- One Librarian can edit information of many Students (0:N)
- One Student can search many books(1:N)
- One Librarian can add many books (0:N)
- One Librarian can search many books (0:N)
- One Librarian can delete many Students (0:N)
- One Librarian can edit information of many Students (1:N)
- One Librarian can issue/return 3 books (1:3)

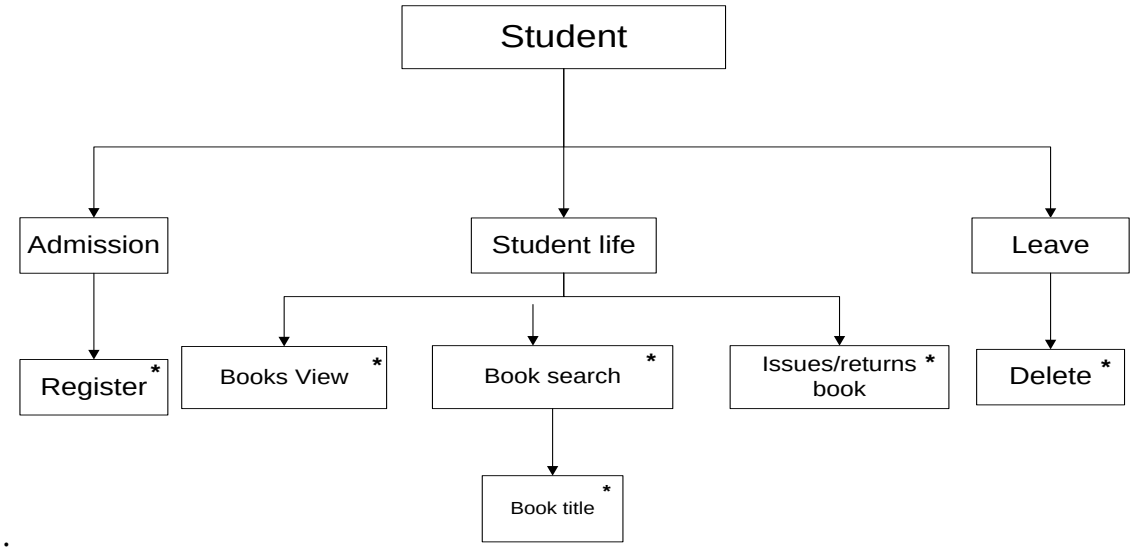
### ATTRIBUTES

A property of an entity or a relationship type, *for our system we have following attributes of 3 specified entities:*

**Student**: Id of Student, Name of Student, Course, Code of Book Issued, Issue date, Return date, Fine

**Librarian:** Username and password.

**Book**: Book code no, Book title, Author of book, No of copies/quantity of books, book status, book price

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# 8. References


- ✓ http://www.gobookee.com/library-management-system-er-diagram-and-dfd/ Last Accessed on 2nd March 2013
- ✓ http://www.gobookee.com/get_book.php?u=aHR0cDovL3d3dy5rZGQudW5jYy5lZHUvQ3ludGhpYS8zMTYwUHJvai9SZXBvcnRfRmluYWwucGRmCkxJQlJBUlkgTUFOQUdFTUVOVCBTWVNURU06IERFU0lHTiBBTkQgSU1QTEVNRU5UQVRJT04= Last Accessed on 10th March 2013
- ✓ http://www.scribd.com/doc/24051771/UML-DIAGRAM-OF-LIBRARY-MANAGEMENT-SYSTEM Last Accessed on 12nd March 2013
- ✓ http://www.evalued.bcu.ac.uk/tutorial/4c.htm Last Accessed on 20th March 2013
- ✓ SOFTWARE ENGINEERING (third edition) by K.K Agrawal, Yogesh Singh.
- ✓ http://wiki.answers.com/Q/What_are_the_advantages_and_disadvantages_of_observations
- ✓ http://www.softaiminnovations.com/web/index.php?option=com_content&view=article&id=8&Itemid=9 Last Accessed on 22nd March 2013
- ✓ http://www.umsl.edu/~sauterv/analysis/488_f01_papers/wang.htm Last Accessed on 25th March 2013
- ✓ http://www.dba-oracle.com/t_object_oriented_approach.htm Last Accessed on 28th March 2013
- ✓ http://coursesweb.net/actionscript/oop-object-oriented-programming Last Accessed on 1st April 2013
- ✓ http://www.brighthub.com/internet/web-development/articles/73920.aspx?cid=parsely_rec Last Accessed on 10th April 2013
- ✓ http://www.ehow.com/list_6781448_advantages-disadvantages-ssadm.html Last Accessed on 15th April 2013
- ✓ http://www.selectbs.com/video/oo-methods Last Accessed on 18th April 2013
- ✓ http://www.ctp.bilkent.edu.tr/~russell/java/LectureNotes/1_OOConcepts.htm Last Accessed on 20th April 2013
- ✓ http://www.samplequestionnaire.com/library-user-questionnaire.html Last Accessed on 23rd April 2013

# 9.Self Evaluation Forms

## ASIA PACIFIC INSTITUTE OF INFORMATION TECHNOLOGY

### CE00308-1 System Analysis & Deisgn

**Please List Team Members' Names Here**

Student Name : A Avinash Verma

Student Name : B Rakesh Verma

Student Name : C Kumar Abhishek

**Part B : Peer to Peer Evaluation**

| **1. Do you feel that the distribution of the tasks was fair? Please explain.** |
|---|
| According to me, I think the distribution of the tasks between the group members was fair. |
| Because all the three members was good on each and every topics asked in the assignment. |
| They showed their hard work on the topics given in the group meetings. |

| **Please assess using the scale** | **[1] Never** | **[2] Rarely** | **[3] Sometimes** | **[4] Usually** | **[5] Always** |
|---|---|---|---|---|---|
| Has he / she made a serious effort at assigned work before group meetings? | | | | | |
| Student Name B :Rakesh | | | YES | | |
| Student Name C: Abhishek | | | YES | | |
| Has he / she attempted to make contributions in group meetings? | | | | | |
| Student Name B :Rakesh | | | | YES | |
| Student Name C : Abhishek | | | | YES | |
| Has he / she cooperated with the group effort? | | | | | |
| Student Name B :Rakesh | | | | | YES |
| Student Name C: Abhishek | | | | | YES |

Sign :Avinash Verma

**Please List Team Members' Names Here**

Student Name : A Avinash Verma

Student Name : B Rakesh Verma

Student Name : C Kumar Abhishek

**Part B : Peer to Peer Evaluation**

| **1. Do you feel that the distribution of the tasks was fair? Please explain.** |
|---|
| According to me, I think the distribution of the tasks between the group members was fair. |
| Because all the three members was good on each and every topics asked in the assignment. |
| |

| **Please assess using the scale** | **[1] Never** | **[2] Rarely** | **[3] Sometimes** | **[4] Usually** | **[5] Always** |
|---|---|---|---|---|---|
| Has he / she made a serious effort at assigned work before group meetings? | | | | | |
| Student Name A:Avinash | | | YES | | |
| Student Name C: Abhishek | | | YES | | |
| Has he / she attempted to make contributions in group meetings? | | | | | |
| Student Name A:Avinash | | | | | Yes |
| Student Name C: Abhishek | | | | | Yes |
| Has he / she cooperated with the group effort? | | | | | |
| Student Name A:Avinash | | | | | Yes |
| Student Name C: Abhishek | | | | | Yes |

Sign : Rakesh Verma

**Please List Team Members' Names Here**

Student Name : A Avinash Verma

Student Name : B Rakesh Verma

Student Name : C Kumar Abhishek

**Part B : Peer to Peer Evaluation**

| **1. Do you feel that the distribution of the tasks was fair? Please explain.** |
|---|
| According to me, I think the distribution of the tasks between the group members was fair. |
| Because all the three members was good on each and every topics asked in the assignment. |
| They showed their hard work on the topics given in the group meetings. |

| **Please assess using the scale** | **[1] Never** | **[2] Rarely** | **[3] Sometimes** | **[4] Usually** | **[5] Always** |
|---|---|---|---|---|---|
| Has he / she made a serious effort at assigned work before group meetings? | | | | | |
| Student Name A:Avinash | | | | YES | |
| Student Name B: Rakesh | | | YES | | |
| Has he / she attempted to make contributions in group meetings? | | | | | |
| Student Name A:Avinash | | | | | YES |
| Student Name B:Rakesh | | | | YES | |
| Has he / she cooperated with the group effort? | | | | | |
| Student Name A:Avinash | | | | | YES |
| Student Name B:Rakesh | | | | | YES |

Sign : Kumar Abhishek

***Group No :*** *GROUP 2*
**Name :** Avinash Verma
**Student ID :** PT1181128

**Part A : Self Evaluation**

| **1. What was your contribution to the project?** | **% contribution** |
|---|---|
| Example : Prepared Gantt Chart | 100 |
| a. Introduction | 40 |
| b. Feasibility Report | 60 |
| c. Selection of Methodology | 25 |
| d. Selection of Investigation Techniques | 25 |
| e. Analysis & Logical Design | 20 |
| f. Overall Documentation | 30 |

| **2. Total amount of time spent in group meetings:** | **9.30 hrs** |
|---|---|

| **3. How many group meetings were held?** | **5** |
|---|---|

| **4. How many group meetings have you attended?** | 5 |
|---|---|

| **5. List reasons for not attending meetings, if any.** |
|---|

| **Please assess using the scale** | **[1] Never** | **[2] Rarely** | **[3] Sometimes** | **[4] Usually** | **[5] Always** |
|---|---|---|---|---|---|
| I have made a serious effort at assigned work before group meetings | | | | YES | |
| I have attempted to make contributions in group meetings | | | | | YES |
| I have cooperated with the group effort | | | | | YES |

***Group No :*** *GROUP 2*
**Name :** Rakesh Verma
**Student ID :** PT1181130

**Part A : Self Evaluation**

| **1. What was your contribution to the project?** | **% contribution** |
|---|---|
| Example : Prepared Gantt Chart | 100 |
| a. Introduction | 30 |
| b. Feasibility Report | 20 |
| c. Selection of Methodology | 50 |
| d. Selection of Investigation Techniques | 50 |
| e. Analysis & Logical Design | 20 |
| f. Overall Documentation | 30 |

| **2. Total amount of time spent in group meetings:** | **7.00 hrs** |
|---|---|

| **3. How many group meetings were held?** | **5** |
|---|---|

| **4. How many group meetings have you attended?** | 4 |
|---|---|

| **5. List reasons for not attending meetings, if any.** | **Not Feeling well.** |
|---|---|

| **Please assess using the scale** | **[1] Never** | **[2] Rarely** | **[3] Sometimes** | **[4] Usually** | **[5] Always** |
|---|---|---|---|---|---|
| I have made a serious effort at assigned work before group meetings | | | YES | | |
| I have attempted to make contributions in group meetings | | | | YES | |
| I have cooperated with the group effort | | | | | YES |

***Group No :*** *GROUP 2*
**Name :** Kumar Abhishek
**Student ID :** PT1181106

**Part A : Self Evaluation**

| **1. What was your contribution to the project?** | **% contribution** |
|---|---|
| Example : Prepared Gantt Chart | 100 |
| a. Introduction | 30 |
| b. Feasibility Report | 20 |
| c. Selection of Methodology | 25 |
| d. Selection of Investigation Techniques | 25 |
| e. Analysis & Logical Design | 60 |
| f. Overall Documentation | 40 |

| **2. Total amount of time spent in group meetings:** | **7.00 hrs** |
|---|---|

| **3. How many group meetings were held?** | **5** |
|---|---|

| **4. How many group meetings have you attended?** | 4 |
|---|---|

| **5. List reasons for not attending meetings, if any.** | **Went home for Holi Celebration** |
|---|---|

| **Please assess using the scale** | **[1] Never** | **[2] Rarely** | **[3] Sometimes** | **[4] Usually** | **[5] Always** |
|---|---|---|---|---|---|
| I have made a serious effort at assigned work before group meetings | | | YES | | |
| I have attempted to make contributions in group meetings | | | | | YES |
| I have cooperated with the group effort | | | | | YES |

# 10. G2- Weekly Reports

## 10.1 Weekly Reports 1

Dated: - 28th February, 2013

Group Members: - 1) Avinash Verma PT1181128

2) Rakesh Verma PT1181130

3) Kumar Abhishek PT1181106

*Sir,*

*We have done the following report during our group project.*

- **What have we done?**

We have studied the assignment and analyzed it extensively, discussed about various aspects involved in the project of "Automated Library Management System". We had a collection of ideas from the different group members.

- **What are we doing?**

We are working on the various ideas suggested by the group members and looking forward to impose the most feasible idea to make our project a real success. We are also searching for materials on the World Wide Web and comparing it with our project, to involve that thing in our project.

- **What are we planning to do?**

Each individual member has started working on the areas given to him. We are doing more of research work so that our project outshines the others.

**Mr. Manoj Sharma**

**(MODULE LECTURER)**

# 10.2 Weekly Reports 2

Dated: - 15th March, 2013

Group Members: - 1) Avinash Verma PT1181128

2) Rakesh Verma PT1181130

3) Kumar Abhishek PT1181106

*Sir,*

*We have done the following report during our group project.*

- **What have we done?**

  Each individual member has started working on the areas given to him. We are doing more of research work so that our project outshines the others.

- **What are we doing?**

  We are working on the various ideas based on the research work done by our group members.We have started with the feasibility report and the various aspects of it.We have also completed the system analysis part and doing our work accordingly.Side by side we have also started with the documentation.

**Mr. Manoj Sharma**

**(MODULE LECTURER)**

# 10.3 Weekly Reports 3

Dated: - 29th March, 2013

Group Members: - 1) Avinash Verma PT1181128

2) Rakesh Verma PT1181130

3) Kumar Abhishek PT1181106

*Sir,*

*We have done the following report during our group project.*

- **What have we done?**

We have completed with our feasibility report and the gantt chart and also given a detailed presentation explaining all the necessary things.We also visited to other colleges and schools in the city to know how things are done for issue and update of various stuff in the library system.We came across many interesting things which can be inculcated in our assignment for a realistic approach.

- **What are we doing?**

We are working on the various ideas based on the research work done by our group members.We are working on the various drawbacks and loopholes that we found during our visit to the various colleges and schools.Along with it ,side by side we are also completing our documentation.

**Mr. Manoj Sharma**

**(MODULE LECTURER)**

# 10.4 Weekly Reports 4

Dated: - 11th April, 2013

Group Members: - 1) Avinash Verma PT1181128

2) Rakesh Verma PT1181130

3) Kumar Abhishek PT1181106

*Sir,*

*We have done the following report during our group project.*

- **What have we done?**

We completed our work of studying the various loopholes and provided a solution for the same.We are trying to give the best possible solution for the problems found in the system.

- **What are we doing?**

We have started with the making of the DFD's and other data flow diagrams.A detailed study regarding the problems and their solutions is being done.Documentation is covered side by side.

**Mr. Manoj Sharma**

**(MODULE LECTURER)**

# 10.5 Weekly Reports 5

Dated: - 23rd April, 2013

Group Members: - 1) Avinash Verma PT1181128

2) Rakesh Verma PT1181130

3) Kumar Abhishek PT1181106

*Sir,*

*We have done the following report during our group project.*

- **What have we done?**

  We completed our work of DFD's and data flow diagrams.We are now on the verge of completion of our work.

- **What are we doing?**

  We are doing the remaining part of the documentation so that we complete our assignment on time.Final touch up is given by all the group members so as to shape the assignment in best possible way.

**Mr. Manoj Sharma**

**(MODULE LECTURER)**

# 11. Minutes of Meeting

**MEETING 1**:

| | |
|---|---|
| VENUE | Library |
| DATE AND TIME | 1st march. 2013,1:30 pm |
| MEMBERS PRESENT | All |
| TOPIC DISCUSSED | Read the assignment completely and divided our tasks |
| DECISION TAKEN | Analysis of the given scenario was to be done |

**MEETING 2**:

| | |
|---|---|
| VENUE | Syndicate Room |
| DATE AND TIME | 13th March 2013, 3:30 pm |
| MEMBERS PRESENT | All |
| TOPIC DISCUSSED | System design and feasibility study |
| DECISION TAKEN | Feasibility study was to be done |

**MEETING 3**:

| | |
|---|---|
| VENUE | Library |
| DATE AND TIME | 22th March 2013, 2:45pm |
| MEMBERS PRESENT | Avinash Verma , Rakesh Verma |
| TOPIC DISCUSSED | Feasibility study, problems in current scenario and their recommendations |
| DECISION TAKEN | Selection Of methodology and investigation technique to be used. |

**MEETING 4**:

| | |
|---|---|
| VENUE | Syndicate Room |
| DATE AND TIME | 5th April,2013 , 3:00 pm |
| MEMBERS PRESENT | Avinash Verma, Kumar Abhishek |
| TOPIC DISCUSSED | System's logical and physical design, gantt charts and Data Flow Diagrams |

| | |
|---|---|
| DECISION TAKEN | Data flow and data store concept based works should be completed soon. |

**MEETING 5**:

| | |
|---|---|
| VENUE | College library |
| DATE AND TIME | 18 April 2013, 3.30 pm |
| MEMBERS PRESENT | All |
| TOPIC DISCUSSED | Whole system in brief, works that are completed and remaining topics that is to be covered including conclusions |
| DECISION TAKEN | By the next week, all topics should be covered and final documentation will be started by Avinash Verma, Kumar Abhishek. |