



A Project Report on
Library Management for Stock Verification
Submitted to
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**In partial fulfillment of the Degree of Bachelor of Engineering
In**

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BHOPAL**



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CERTIFICATE

This is to certify that Divya singh, Suchitra Pandey, sakshi jain, Varsha pawar has completed their project work, titled "**LIBRARY MANAGEMENT FOR STOCK**" as per the syllabus and has submitted satisfactory report on this project as a partial fulfillment towards the degree of **BACHELOR OF ENGINEERING in COMPUTER SCIENCE & ENGINEERING**.

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Abstract

This project is aimed at developing a Training and Placement Dept. of the college. The system is an online application that can be accessed throughout the organization and outside as well with proper login provided.

This system can be used as an application for the TPO of the college to manage the student information with regards to placement. Students logging should be able to upload their information in the form of a CV. Visitors/Company representatives logging in may also access/search any information put up by Students.

Introduction

Vision

The purpose of the Automation of Training and Placement Operations is this system can be used as an application for the TPO of the college to manage the student information with regards to placement. Students logging should be able to upload their information in the form of a CV.

Scope

The system scope includes the following:

Visitors/Company representatives logging in may also access/search any information put up by Students. Invitations are sent to company with relevant information and Job Notification Form (JNF) also available on the website. Companies are encouraged to send soft copy of their PPTs and Job Profile which will be uploaded on the internal site which can be seen only by the students.

Overview

Invitations are sent to company with relevant information and Job Notification Form (JNF) also available on the website. Companies are encouraged to send soft copy of their PPTs and Job Profile which will be uploaded on the internal site which can be seen only by the students.

The dates for campus interviews are allotted on basis of information provided in JNF. The company would confirm or seek a change of the dates with the TnP
Interested students register for a company online through the site

A link to the recruitment interface along with login information is sent to the company. Resumes of the applicants are made available for short listing online to the company concerned

The company visits the campus on the mutually agreed date and conducts Aptitude/Technical test/Personal Interviews/Group Discussion as a part of their preferred selection procedure

The company is expected to furnish the final list of selected students on the same day after the completion of the selection procedure

Once a student is selected in one company he/she will not be allowed to appear for other companies interviews as per Recruitment Policy

➤ **System Analysis**

Existing System

The Existing system is a computerized system but which is maintained at individual databases i.e in excel sheets, it's a time delay process. And maintaining all the records in Excel sheets is difficult. If they want any record they have to search all the records. It doesn't provide multiple user

accessibility and also doesn't have different user privileges. So the system is not accessible for all the employees of the organization.

Limitations in Existing System

Access single records from the entire database is very difficult.

Database is maintained at individual levels

The system is not an online system

Proposed System

The Proposed system is a browser which is completely related to internet browsing. The web enabled information management system designed to automate the entire operations of a modern. This maintains and controls the training and placement details and does online operations and generates various reports. This system allows multi-divisional, handling that includes various activities. In this system it gives the entire reports of the account and their details.

Advantages over Existing System

The proposed system is automated that is faster than the existing manually maintained system and can handle data easily.

Computerization of the details of the members and placement operations.

The System allows administrator to control all the activities hence identifying the roles and accessibility of other users.

Feasibility Study

Economic Feasibility

Economic feasibility attempts to weigh the costs of developing and implementing a new system, against the benefits that would accrue from having the new

system in place. This feasibility study gives the top management the economic justification for the new system.

A simple economic analysis which gives the actual comparison of costs and benefits are much more meaningful in this case. In addition, this proves to be a useful point of reference to compare actual costs as the project progresses.

There could be various types of intangible benefits on account of automation.

These could include increased customer satisfaction, improvement in product quality better decision making timeliness of information, expediting activities, improved accuracy of operations, better documentation and record keeping, faster retrieval of information, better employee morale.

Operational Feasibility

Proposed project is beneficial only if it can be turned into information systems that will meet the organizations operating requirements. Simply stated, this test of feasibility asks if the system will work when it is developed and installed. Are

there major barriers to Implementation? Here are questions that will help test the operational feasibility of a project:

Is there sufficient support for the project from management from users? If the current system is well liked and used to the extent that persons will not be able to see reasons for change, there may be resistance.

Are the current business methods acceptable to the user? If they are not, Users may welcome a change that will bring about a more operational and useful systems.

Have the user been involved in the planning and development of the project?

Early involvement reduces the chances of resistance to the system and in general and increases the likelihood of successful project.

SDLC METHODOLOGIES

Spiral Model:

The spiral model is similar to the incremental model, with more emphasis placed on risk analysis. The spiral model has four phases: Planning, Risk Analysis, Engineering and Evaluation. A software project repeatedly passes through these phases in iterations (called Spirals in this model). The baseline spiral, starting in the planning phase, requirements is gathered and risk is assessed. Each subsequent spiral builds on the baseline spiral. Requirements are gathered during the planning phase. In the risk analysis phase, a process is undertaken to identify risk and alternate solutions. A prototype is produced at the end of the risk analysis phase.

Software is produced in the engineering phase, along with testing at the end of the phase. The evaluation phase allows the customer to evaluate the output of the project to date before the project continues to the next spiral.

➤ Software Requirement Specification

SOFTWARE REQUIREMENTS

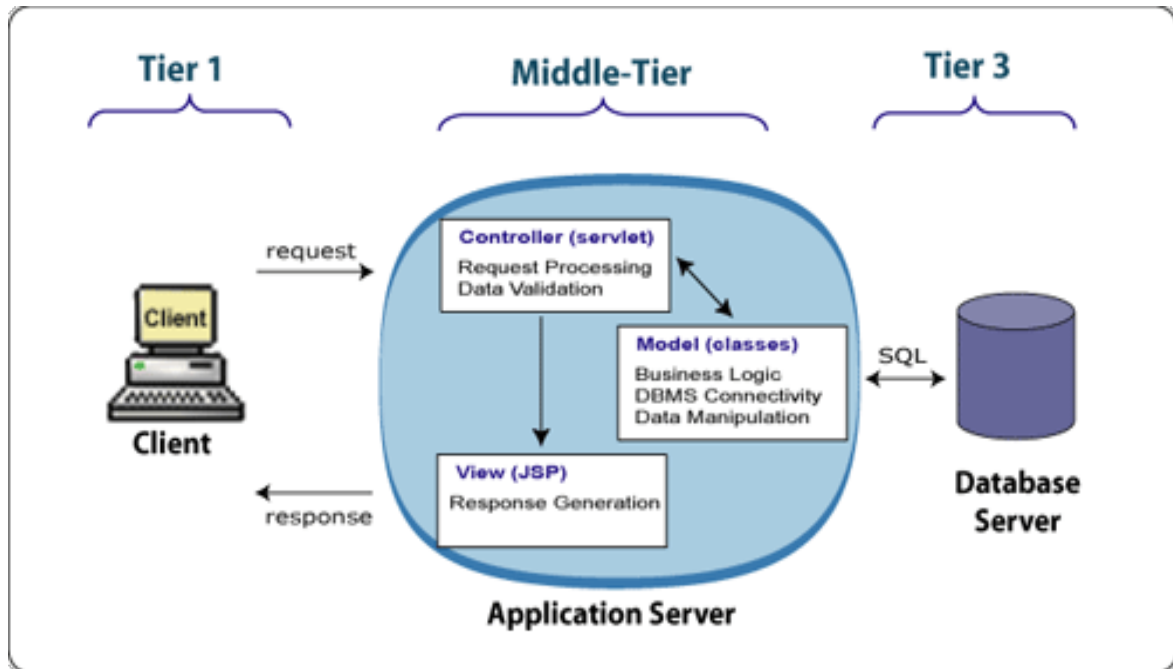
Operating System	:	Windows XP/or 2003 Linux
User Interface	:	Java
Client-side Scripting	:	JavaScript
Programming Language	:	Java
Web Applications	:	JDBC,
IDE/Workbench	:	NetBeans 8.2.0
Database	:	PhpMysql
Server Deployment	:	Tomcat 6.x/7.x

HARDWARE REQUIREMENTS

Processor	:	core2Duo
Hard Disk	:	160GB
RAM	:	1GB or more

System Design

Architecture Diagram



Authentication

Functional Description

Login to the system through the first page of the application.

Change the password after login to the application.

See his/her details and change it.

Help from the system.

Functional Description

The following are the basic functions supported by the system:

Following is a list of functionalities to be supported by the training and placement operations. More functionality can be added to this list. And, in places where the

description of functionality is not adequate, you can make appropriate assumptions and proceed.

A person should be able to

Access/Search CVs/information from the first page (only read access).

login to the system through the first page of the application

change the password after logging into the system

Upload his/her CV.

See/change his/her details.

Get help about the application on how to use the different features of the system.

An admin login should be present who can read as well as remove any uploads. Preferably it should be given to the TPO.

Modules:

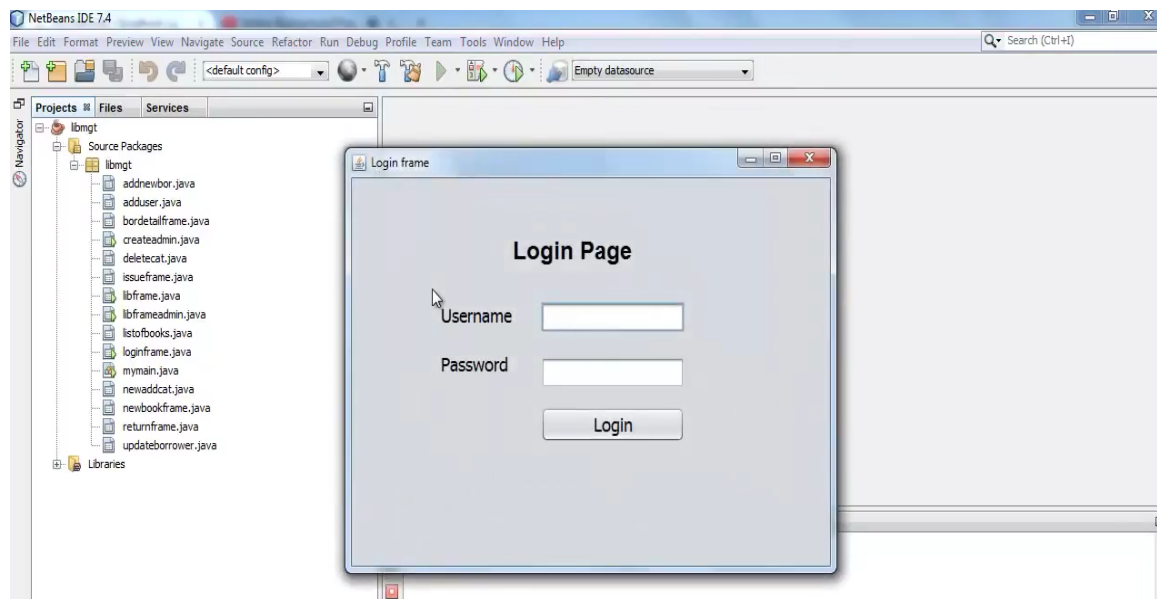
Admin users - Has full access to all the modules of this system. Responsible for creating, modifying and deleting a member and training and placement operations, admin can view the training and placement operations list and also generate the reports.

Reports:

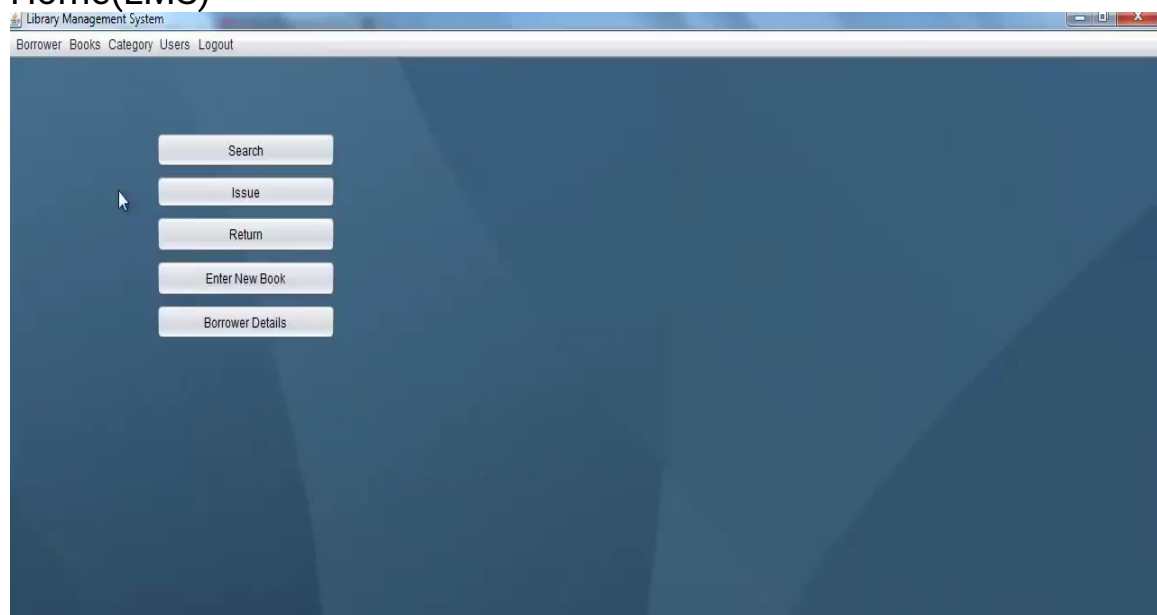
All frequently used reports at the click of a button

Project framework :

Loginpage(LMS)



Home(LMS)



Add New Student(LMS)

The screenshot shows a web application window titled "Library Management System" with a menu bar containing "Borrower", "Books", "Category", "Users", and "Logout". The main window is titled "LMS>Enter new Borrower". It features a form titled "Add New Borrower" with the following fields and controls:

- Borrower Id:
- Name:
- Mobile:
- Address:
- Gender: ☐ Male ☐ Female
- Save:
- Image upload area: A large empty box with a "Choose Pic from PC" button below it.

Update Old Entry(LMS)

The screenshot shows a web application window titled "Library Management System" with a menu bar containing "Borrower", "Books", "Category", "Users", and "Logout". The main window is titled "Updation". It features a form titled "Updation & Deletion" with the following fields and controls:

- Name: Search:
- Borrower ID: Search:
- Mobile No.:
- Address:
- Gender: ☐ Male ☐ Female
- Update:
- Delete:
- Image upload area: A large empty box with a "Choose Image from Pc" button below it.
- Table: A table with columns "Id", "Name", and "No. of booksi...".

Id	Name	No. of booksi...

UML Diagrams

Unified Modeling Language:

The Unified Modeling Language allows the software engineer to express an analysis model using the modeling notation that is governed by a set of syntactic semantic and pragmatic rules.

A UML system is represented using five different views that describe the system from distinctly different perspective. Each view is defined by a set of diagram, which is as follows.

User Model View

This view represents the system from the user's perspective.

The analysis representation describes a usage scenario from the end-users perspective.

Structural model view

In this model the data and functionality are arrived from inside the system.

This model view models the static structures.

Behavioral Model View

It represents the dynamic of behavioral as parts of the system, depicting the interactions of collection between various structural elements described in the user model and structural model view.

Implementation Model View

In this the structural and behavioral as parts of the system are represented as they are to be built.

Environmental Model View

In this the structural and behavioral aspects of the environment in which the system is to be implemented are represented.

UML is specifically constructed through two different domains they are:

UML Analysis modeling, this focuses on the user model and structural model views of the system.

UML design modeling, which focuses on the behavioral modeling, implementation modeling and environmental model views.

Use case Diagrams represent the functionality of the system from a user's point of view. Use cases are used during requirements elicitation and analysis to

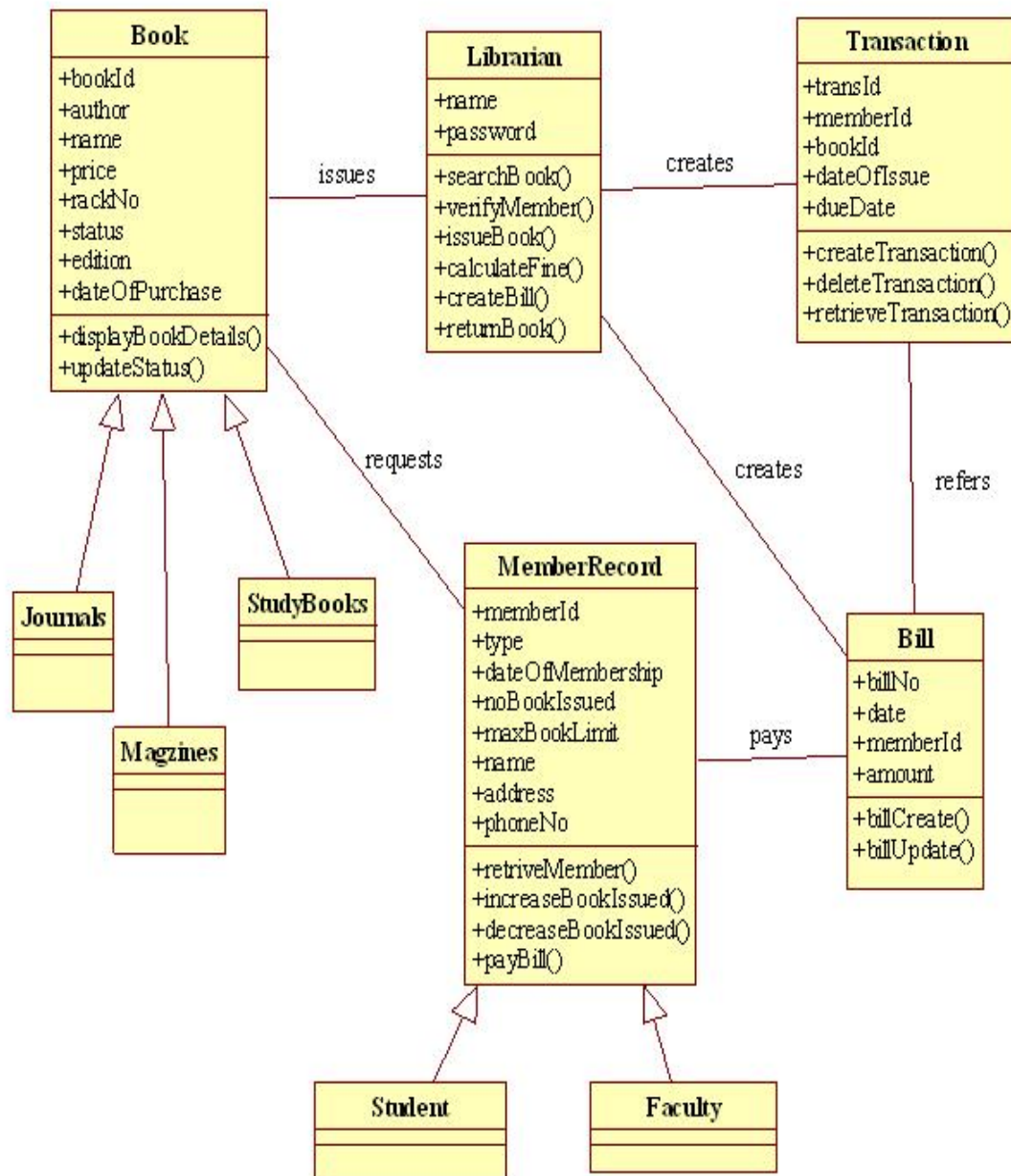
represent the functionality of the system. Use cases focus on the behavior of the system from external point of view.

Actors are external entities that interact with the system. Examples of actors include users like administrator, bank customer ...etc., or another system like central database.

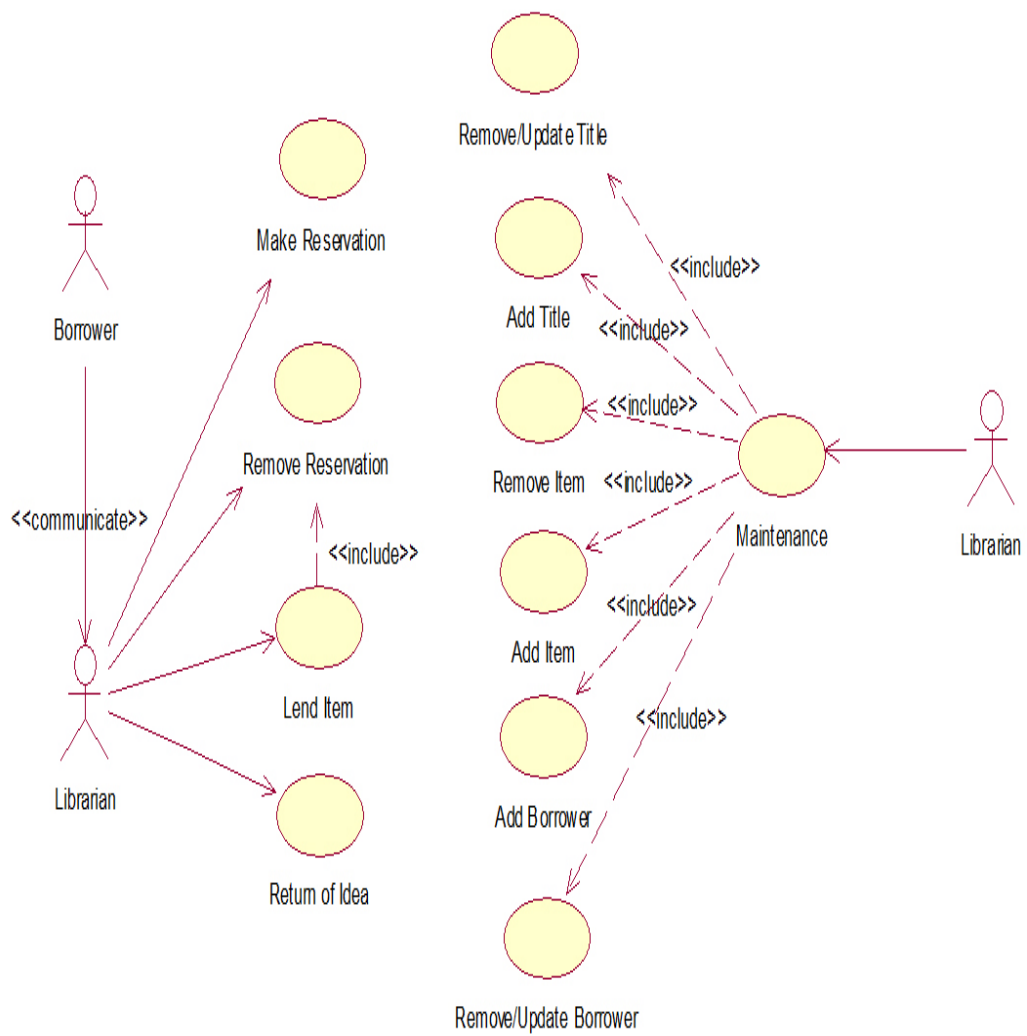
Class Diagram

Class diagrams are the backbone of almost every object-oriented method including UML. They describe the static structure of a system. Classes are used

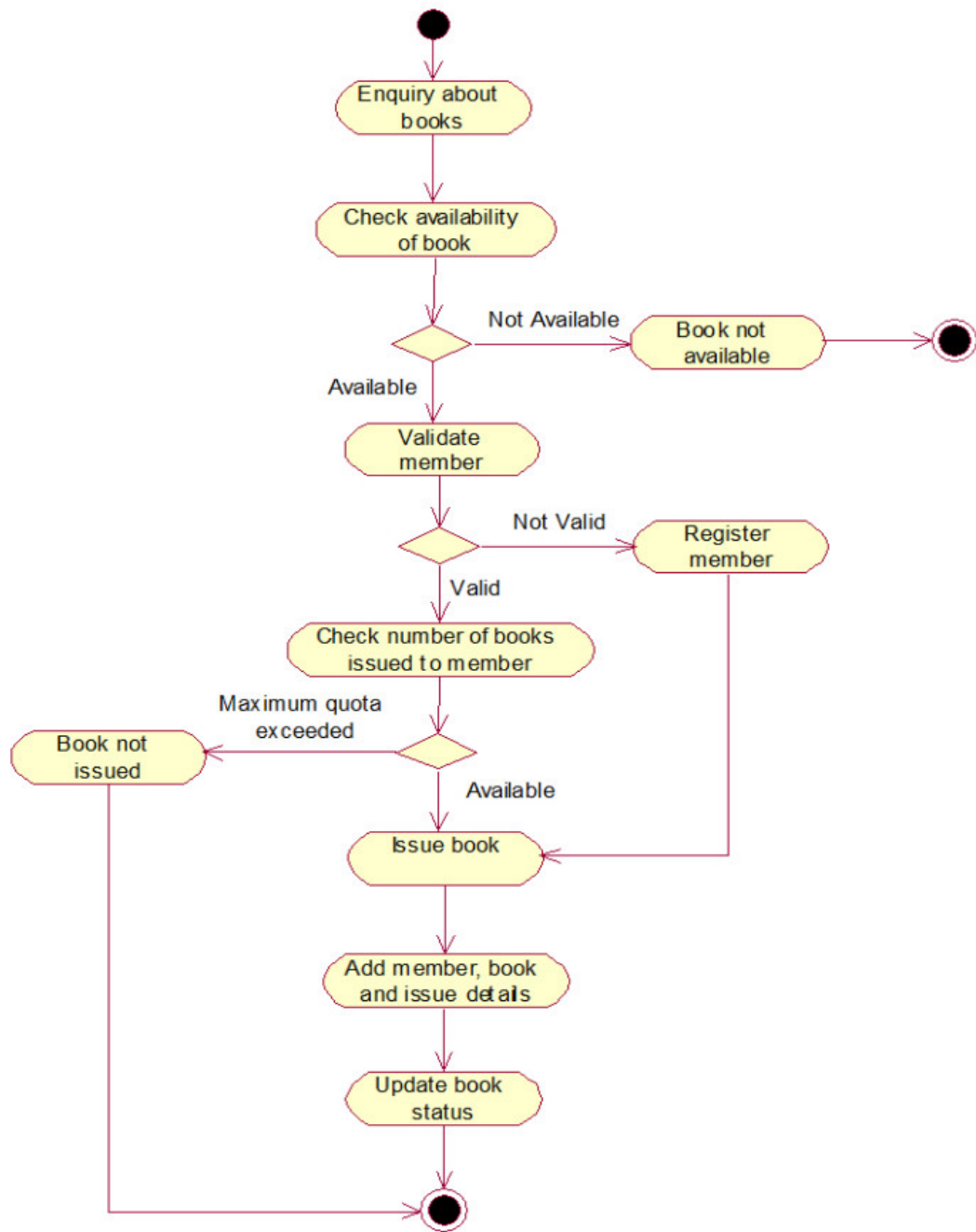
to represent objects. Objects can be anything having properties having properties and responsibility.



Use-case Diagram



Activity Diagram

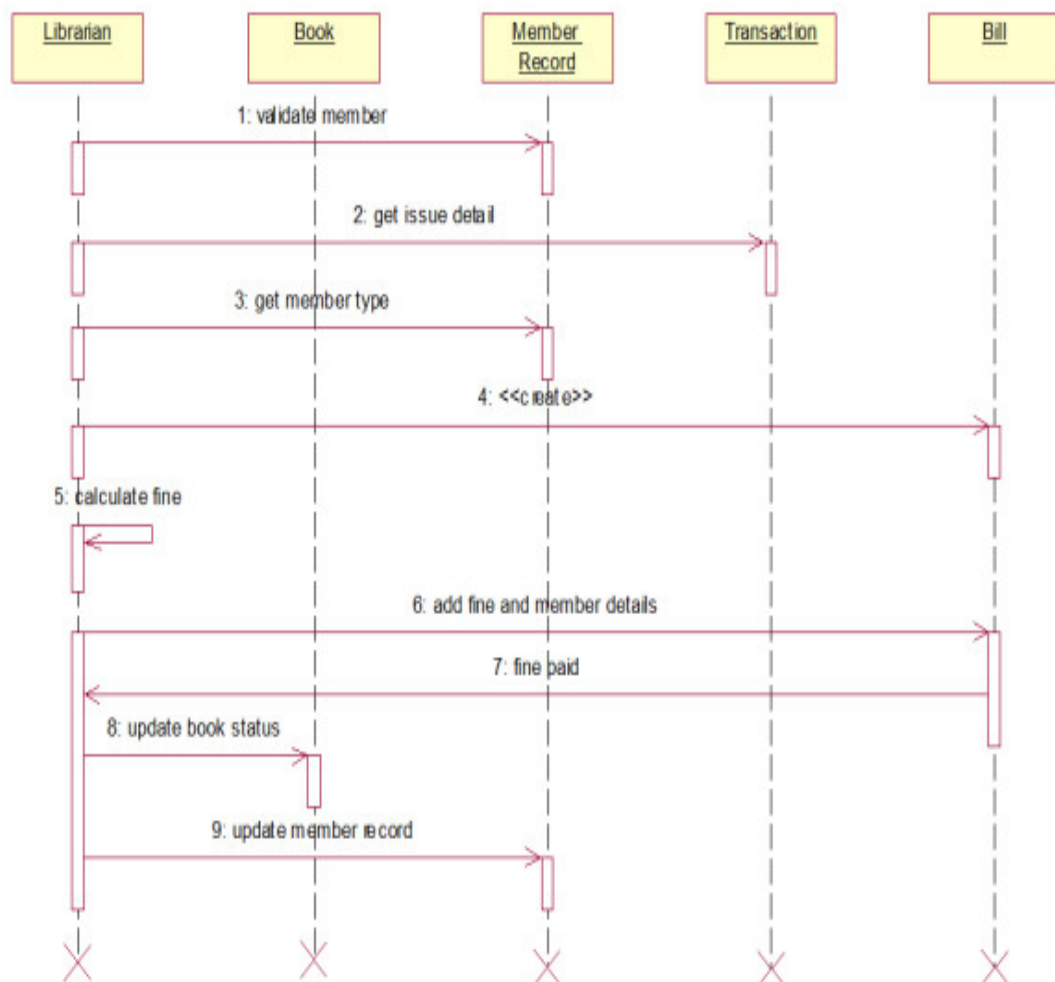


Sequence Diagrams

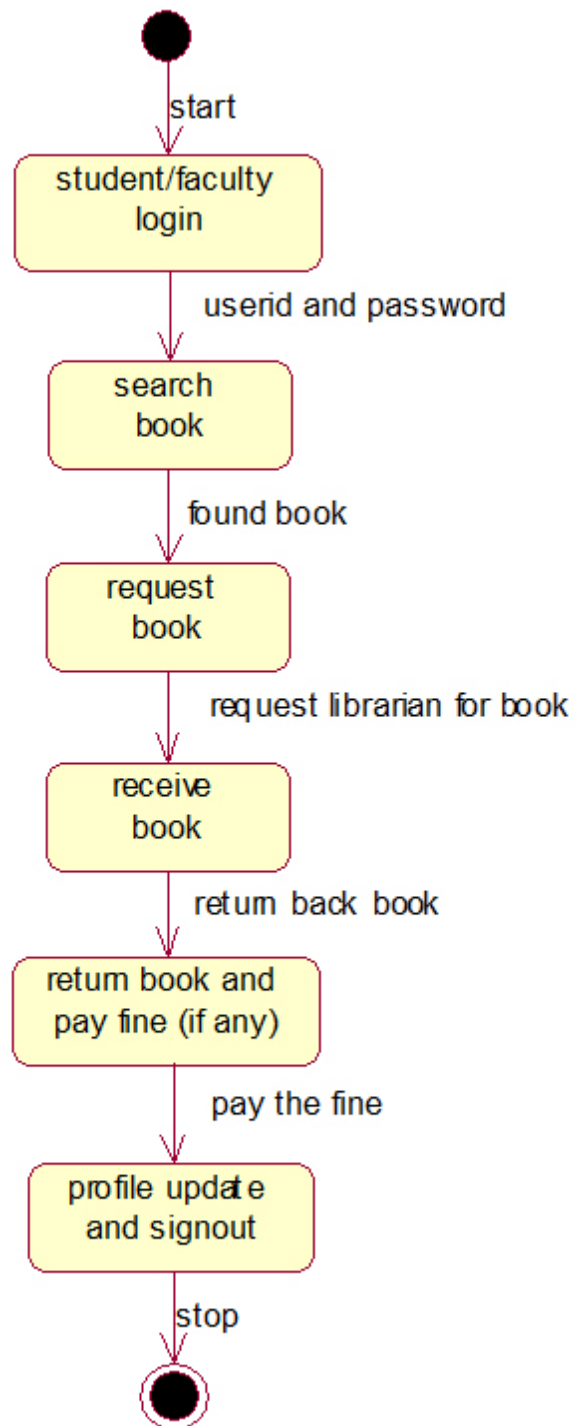
These diagrams explain the message exchanged between the various objects of the system.

For example if a agent login with uname and password , loginAction() method is called . if it executes successfully , next method is called or else , the loginAction() is called again .

TPO:



State Chart Diagrams



Coding & Implementation

Technologies Used

HTML

HTML, an initialization of Hypertext Markup Language, is the predominant markup language for web pages. It provides a means to describe the structure of text-based information in a document – by denoting certain text as headings, paragraphs, lists, and so on – and to supplement that text with interactive forms, embedded images, and other objects. HTML is written in the form of labels (known as tags), surrounded by angle brackets. HTML can also describe, to some degree, the appearance and semantics of a document, and can include embedded scripting language code which can affect the behavior of web browsers and other HTML processors.

HTML is also often used to refer to content of the MIME type text/html or even more broadly as a generic term for HTML whether in its XML-descended form (such as XHTML 1.0 and later) or its form descended directly from SGML.

JavaScript

JavaScript is a script-based programming language that was developed by Netscape Communication Corporation. JavaScript was originally called Live Script and renamed as JavaScript to indicate its relationship with Java.

JavaScript supports the development of both client and server components of Web-based applications. On the client side, it can be used to write programs that are executed by a Web browser within the context of a Web page. On the server

side, it can be used to write Web server programs that can process information submitted by a Web browser and then update the browser's display accordingly

Even though JavaScript supports both client and server Web programming, we prefer JavaScript at Client side programming since most of the browsers supports it. JavaScript is almost as easy to learn as HTML, and JavaScript statements can be included in HTML documents by enclosing the statements between a pair of scripting tags

Java Technology

Initially the language was called as "oak" but it was renamed as "Java" in 1995. The primary motivation of this language was the need for a platform-independent (i.e., architecture neutral) language that could be used to create software to be embedded in various consumer electronic devices.

Java is a programmer's language

Java is cohesive and consistent.

Except for those constraints imposed by the Internet environment, Java gives the programmer, full control.

Finally, Java is to Internet programming where C was to system programming.

Importance of Java to the Internet

Features of Java Security

Every time you that you download a "normal" program, you are risking a viral infection. Prior to Java, most users did not download executable programs frequently, and those who did scan them for viruses prior to execution. Most users still worried about the possibility of infecting their systems with a virus. In addition, another type of malicious program exists that must be guarded against. This type of program can gather private information, such as credit card numbers,

bank account balances, and passwords. Java answers both these concerns by providing a “firewall” between a network application and your computer.

When you use a Java-compatible Web browser, you can safely download Java applets without fear of virus infection or malicious intent.

Portability

For programs to be dynamically downloaded to all the various types of platforms connected to the Internet, some means of generating portable executable code is needed. As you will see, the same mechanism that helps ensure security also helps create portability. Indeed, Java’s solution to these two problems is both elegant and efficient.

The Byte code

The key that allows the Java to solve the security and portability problems is that the output of Java compiler is Byte code. Byte code is a highly optimized set of instructions designed to be executed by the Java run-time system, which is called the Java Virtual Machine (JVM). That is, in its standard form, the JVM is an interpreter for byte code.

Translating a Java program into byte code helps makes it much easier to run a program in a wide variety of environments. The

Test Cases

Unit testing tests the minimal software component and sub-component or modules by the programmers.

Integration testing exposes defects in the interfaces and interaction between integrated components (modules).

Functional testing tests the product according to programmable work.

System testing tests an integrated system to verify/validate that it meets its requirements.

Acceptance testing can be conducted by the client. It allows the end-user or customer or client to decide whether or not to accept the product. Acceptance testing may be performed after the testing and before the implementation phase. See also Development stage

Alpha testing is simulated or actual operational testing by potential users/customers or an independent test team at the developers' site. Alpha testing is often employed for off-the-shelf software as a form of internal acceptance testing, before the software goes to beta testing.

Beta testing comes after alpha testing. Versions of the software, known as beta versions, are released to a limited audience outside of the company. The software is released to groups of people so that further testing can ensure the product has few faults or bugs. Sometimes, beta versions are made available to

the open public to increase the feedback field to a maximal number of future users.

A sample testing cycle

Although testing varies between organizations, there is a cycle to testing:

Requirements Analysis: Testing should begin in the requirements phase of the software development life cycle.

During the design phase, testers work with developers in determining what aspects of a design are testable and under what parameter those tests work.

Test Planning: Test Strategy, Test Plan(s), Test Bed creation.

Test Development: Test Procedures, Test Scenarios, Test Cases, Test Scripts to use in testing software.

Test Execution: Testers execute the software based on the plans and tests and report any errors found to the development team.

Test Reports

Once testing is completed, testers generate metrics and make final reports on their test effort and whether or not the software tested is

Retesting the Defects

Not all errors or defects reported must be fixed by a software development team. Some may be caused by errors in configuring the test software to match the development or production environment. Some defects can be handled by a workaround in the production environment. Others might be deferred to future releases of the software, or the deficiency might be accepted by the business

user. There are yet other defects that may be rejected by the development team (of course, with due reason) if they deem it inappropriate to be called a defect.

Limitations and Scope for Future Enhancements

Limitations of the system:

Only the permanent employees can access the system.

System works in all platforms and its compatible environments.

Advanced techniques are not used to check the authorization.

Future Enhancements:

It is not possible to develop a system that makes all the requirements of the user.

User requirements keep changing as the system is being used. Some of the future enhancements that can be done to this system are:

As the technology emerges, it is possible to upgrade the system and can be adaptable to desired environment.

Because it is based on object-oriented design, any further changes can be easily adaptable.

Based on the future security issues, security can be improved using emerging technologies.

Attendance module can be added

sub admin module can be added

video conference can be added to our system

Project Summary

The Training and Placement Dept. of the college is a web-based application for primarily providing training to the employees who provide customized solutions to meet organizational needs.

This application software has been computed successfully and was also tested successfully by taking “test cases”. It is user friendly, and has required options, which can be utilized by the user to perform the desired operations.

The software is developed using Java as front end and Oracle as back end in Windows environment. The goals that are achieved by the software are:

- Instant access.
- Improved productivity.
- Optimum utilization of resources.
- Efficient management of records.
- Simplification of the operations.
- Less processing time and getting required information.
- User friendly.
- Portable and flexible for further enhancement.

Conclusion:

The purpose of the project is to decrease the time consumption of students and faculties during campus period. This software is developed to digitalize campus process. It will monitor companies and students more efficiently. This application will monitor whole campus process.