SCAD COLLEGE OF ENGINEERING & TECHNOLOGY

Recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Approved by AICTE Affiliated to Anna University, Chennai

Cheranmahadevi, Tirunelveli - 627414

# CCS356 - Object Oriented Software Engineering

## LAB RECORD

NAME: ….....

REGISTER NUMBER: ….....…

DEGREE&BRANCH: .....….

YEAR/SEMESTER: ….....……

SCAD COLLEGE OF ENGINEERING & TECHNOLOGY

Recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Approved by AICTE Affiliated to Anna University, Chennai

Cheranmahadevi, Tirunelveli - 627414

Certified that this is a bonafide record work done

By Selvan/Selvi.....

with Register No .....studying in III-year VI semester in Computer Science and Engineering branch of this Institution during the academic year 2024-2025 [ EVEN SEM]

**Staff in-charge** **Head of the Department**

Submitted for the Anna University practical examination held at SCAD College of Engineering and Technology, Cherranmahadevi on ……

**Internal Examiner** **External Examiner**

**INDEX**

| Ex. No. | Date | Title | Marks | Remarks |
|---|---|---|---|---|
| 01 | | Passport Automation System | | |
| 02 | | Book Bank | | |
| 03 | | Exam Registration System | | |
| 04 | | Stock Maintenance System | | |
| 05 | | Online Course Reservation System | | |
| 06 | | e – Ticketing | | |
| 07 | | Software Personnel Management System | | |
| 08 | | Credit Card Processing | | |
| 09 | | e – Book Management System | | |
| 10 | | Recruitment System | | |
| 11 | | Foreign trading system | | |
| 12 | | Conference Management System | | |
| 13 | | BPO Management System | | |
| 14 | | Library Management System | | |
| 15 | | Student Information System | | |

**Ex. No: 1**
**Date :**

# PASSPORT AUTOMATION SYSTEM

## PROBLEM STATEMENT:

To develop a Passport Automation System. The system developed should contain the following features:

1. Passport Automation System is used in the effective dispatch of passport to all of the applicants. This system adopts a comprehensive approach to minimize the manual work and schedule resources, time in a cogent manner.
2. The core of the system is to get the online registration form (with details such as name, address etc.,) filled by the applicant whose testament is verified for its genuineness by the Passport Automation System with respect to the already existing information in the database.
3. This forms the first and foremost step in the processing of passport application. After the first round of verification done by the system, the information is in turn forwarded to the regional administrator's (Ministry of External Affairs) office.
4. The application is then processed manually based on the report given by the system, and any forfeiting identified can make the applicant liable to penalty as per the law.
5. The system forwards the necessary details to the police for its separate verification whose report is then presented to the administrator. After all the necessary criteria have been met, the original information is added to the database and the passport is sent to the applicant.

.

## SOFTWARE REQUIRMENTS

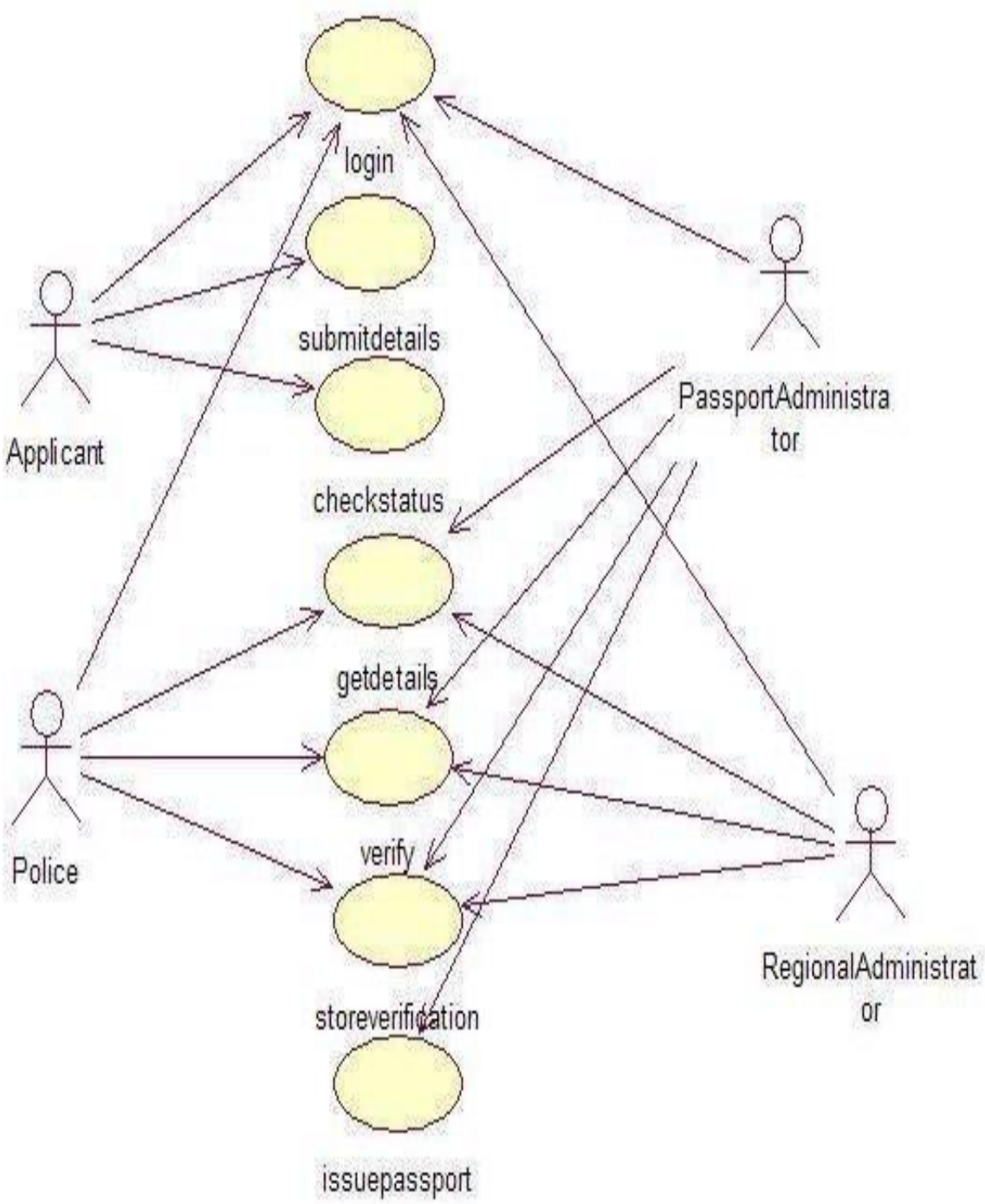
1. Microsoft Visual Basic 6.0
2. Rational Rose / Argo UML
3. Microsoft Access

## HARDWARE REQUIRMENTS

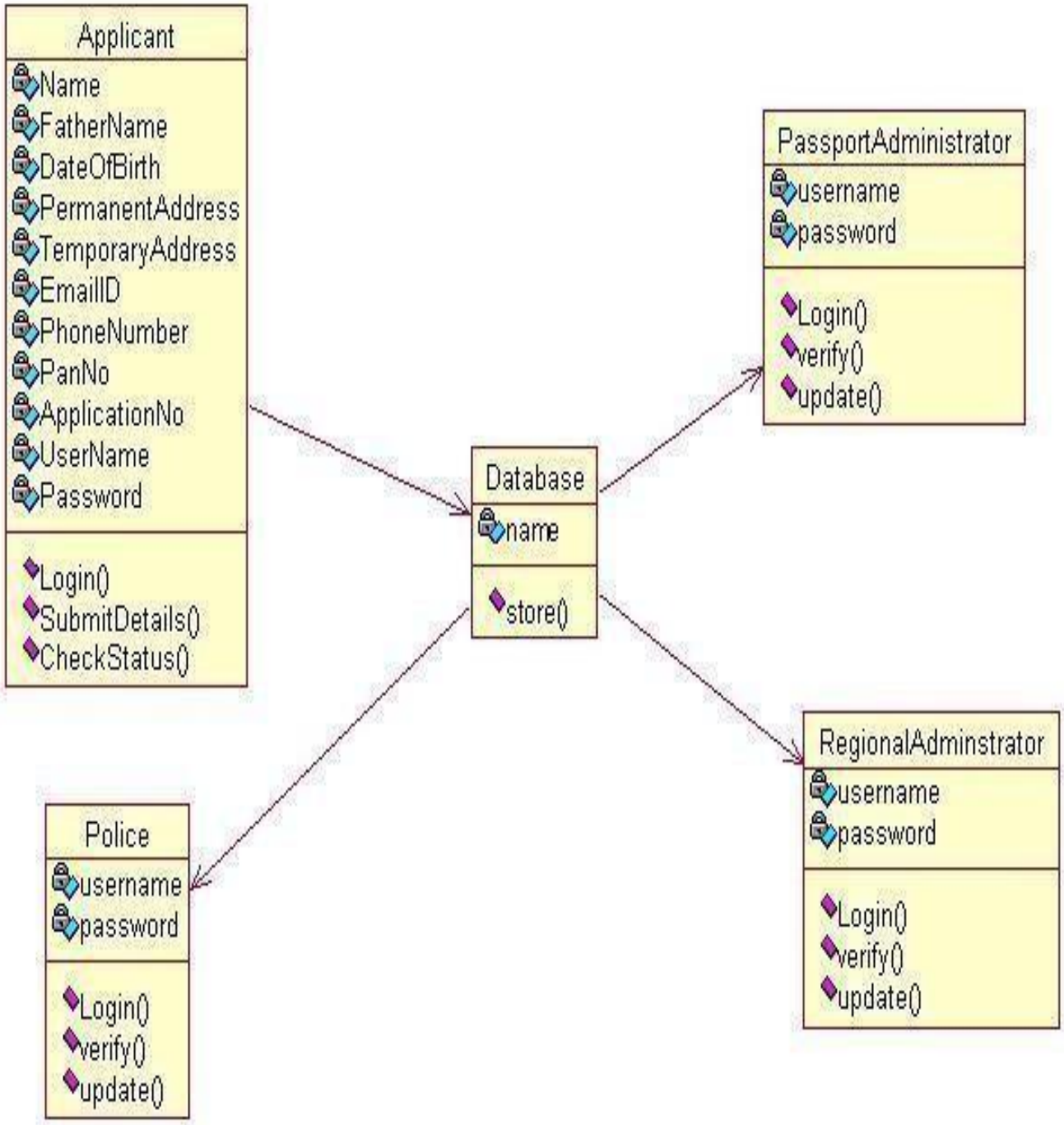
1.128MB RAM

2. Pentium III Processor

**USECASE DIAGRAM**

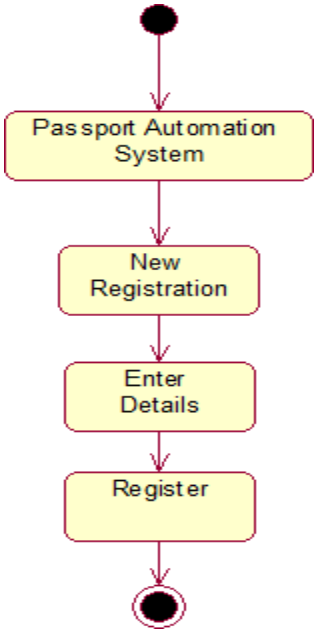


**CLASS DIAGRAM**

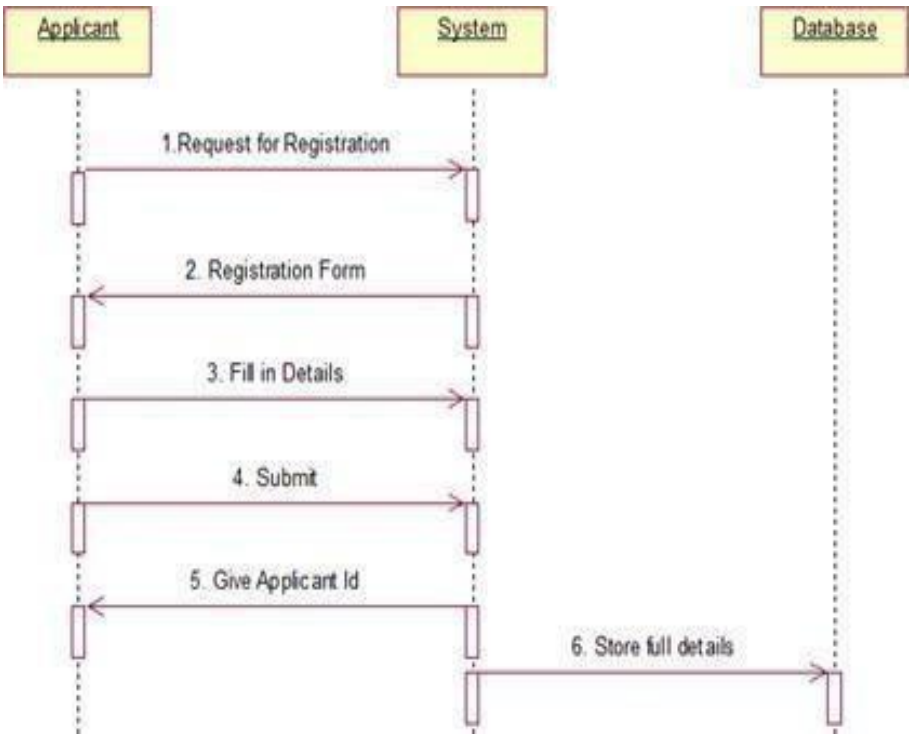


## NEW REGISTRATION

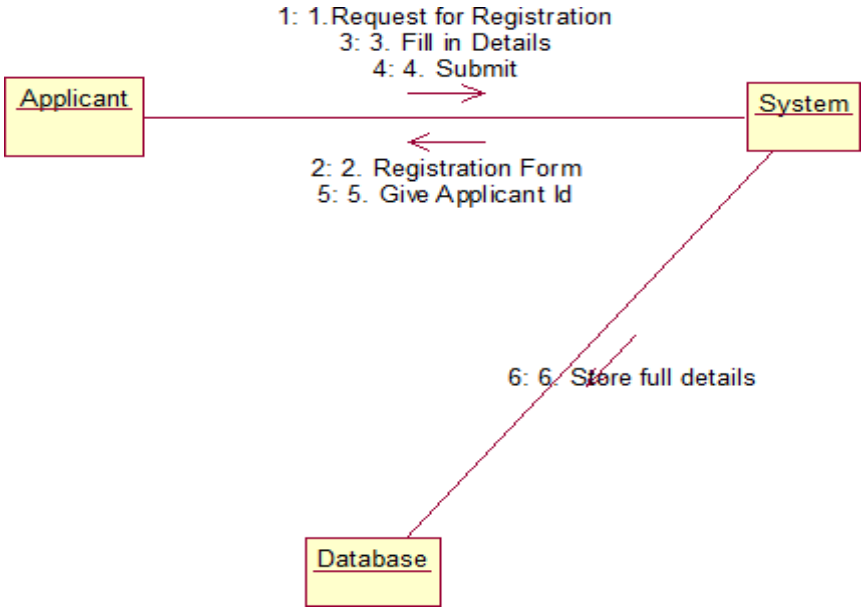
### ACTIVITY DIAGRAM




### SEQUENCE DIAGRAM

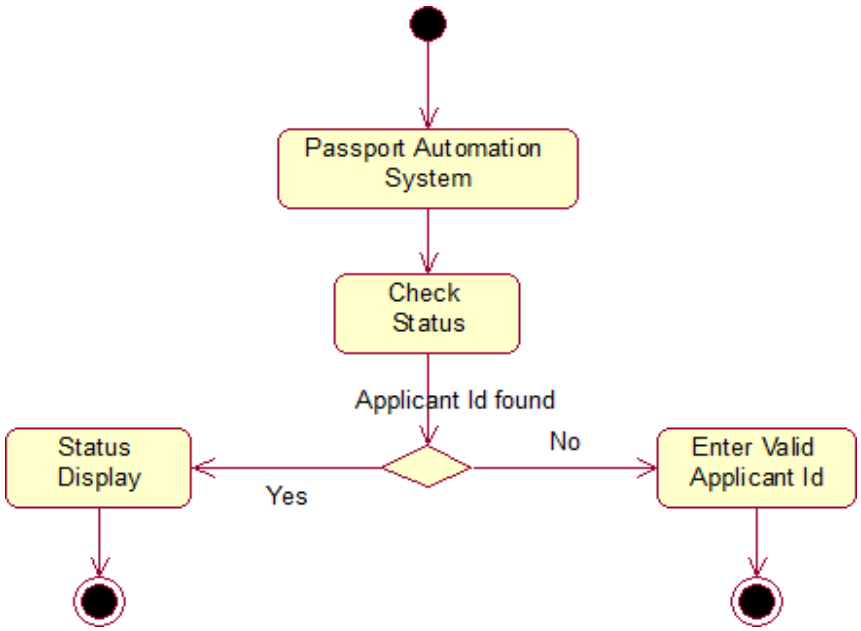


**COLLABORATION DIAGRAM**

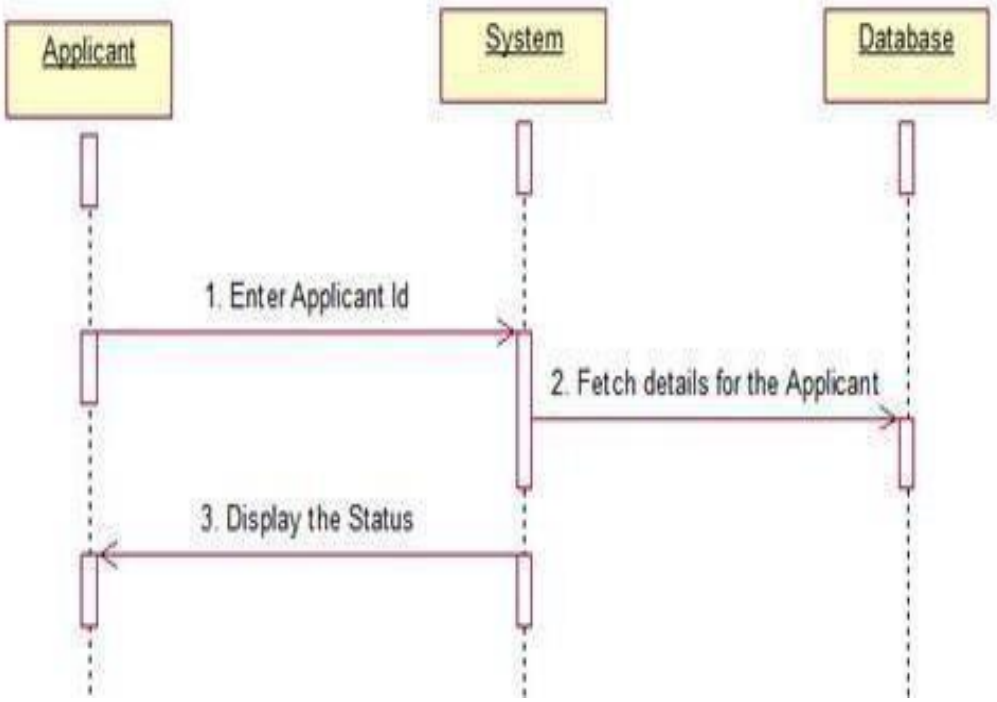



**CHECK STATUS**

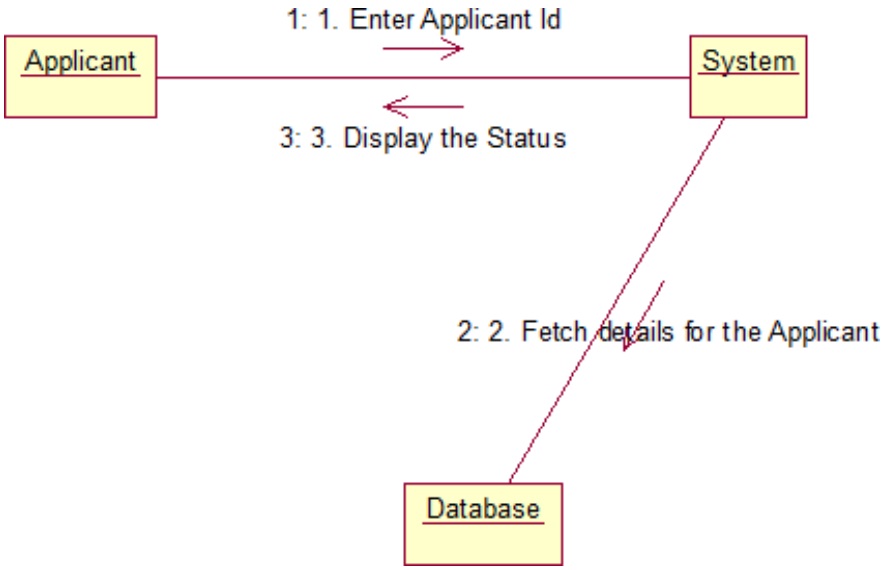
**ACTIVITY DIAGRAM**



**SEQUENCE DIAGRAM**

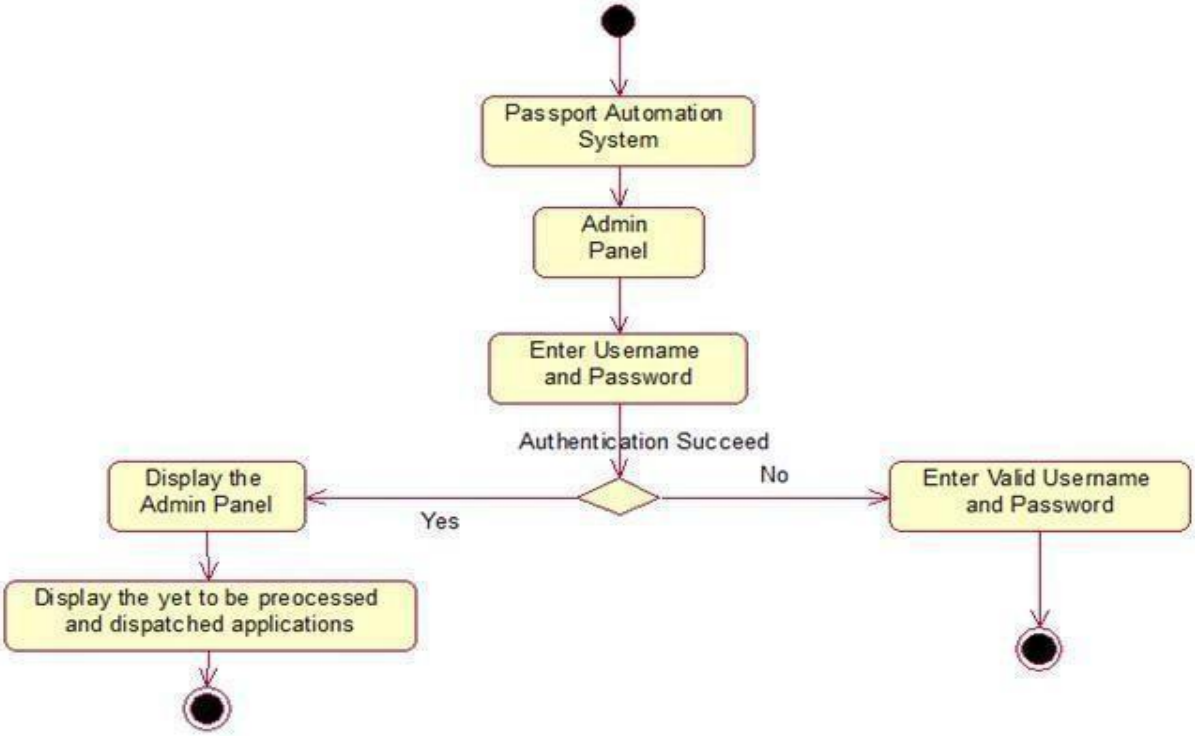



**COLLABORATION DIAGRAM**

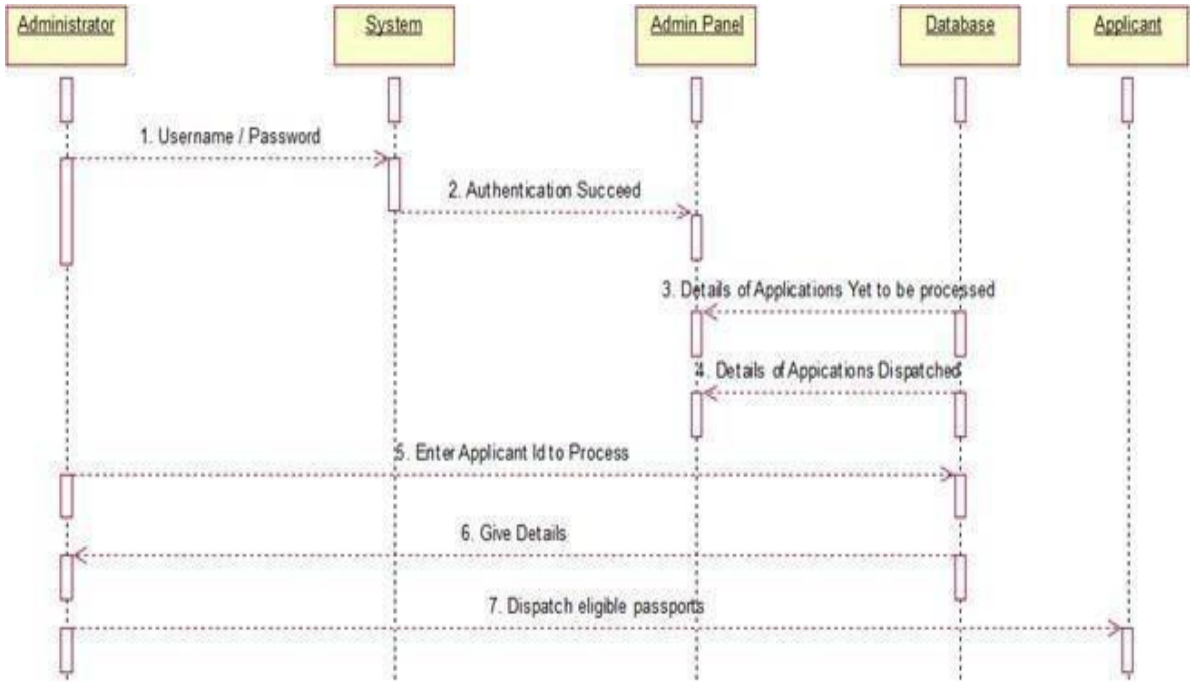


## ADMIN PANEL

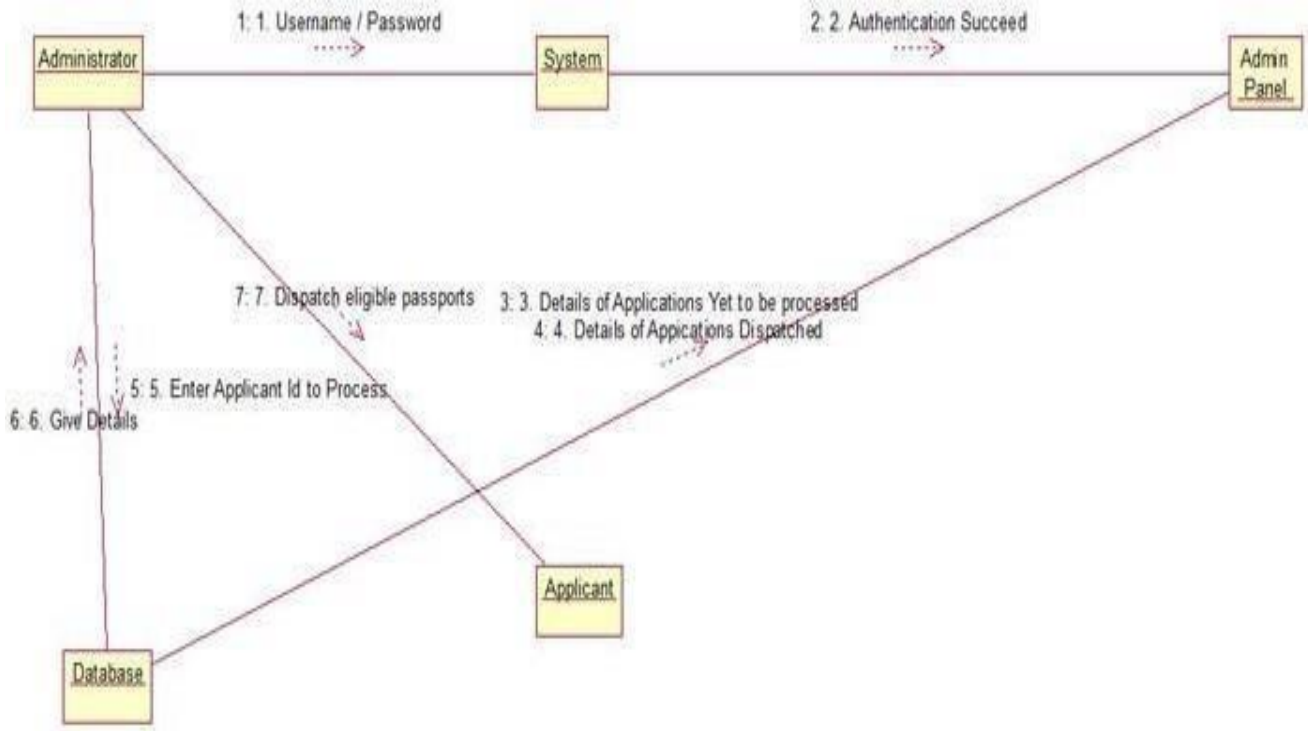
### ACTIVITY DIAGRAM



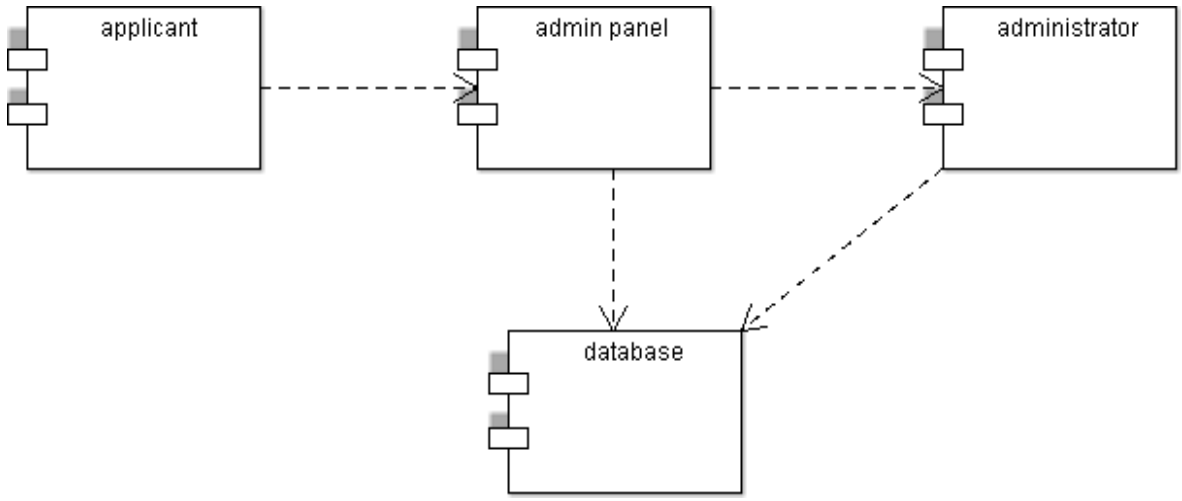

### SEQUENCE DIAGRAM



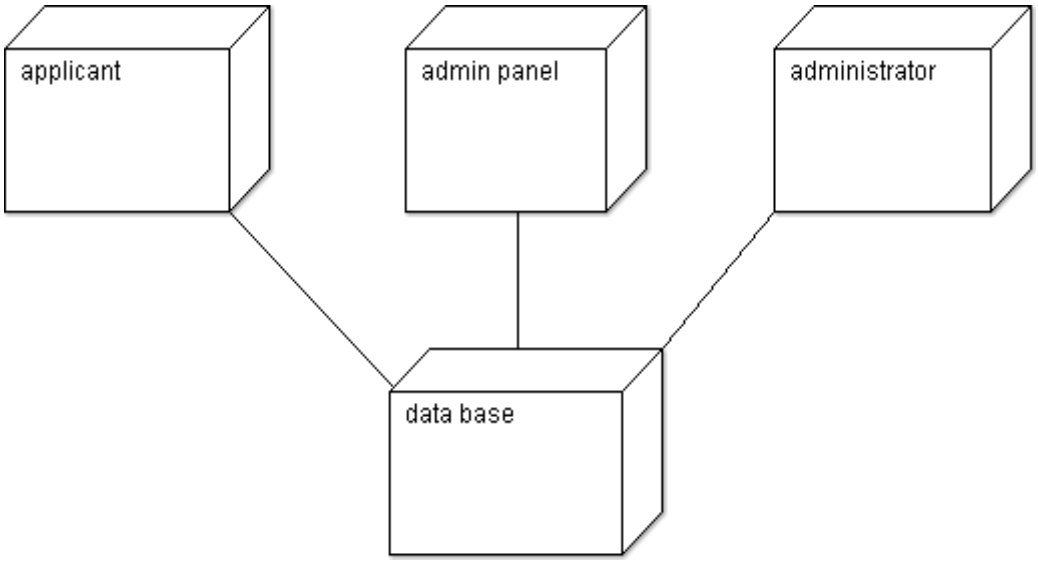
## COLLABORATION DIAGRAM




## COMPONENT DIAGRAM



**DEPLOYMENT DIAGRAM**




**Result:**

Thus the UML diagrams for Passport Automation System are drawn and code generated successfully.

**Ex. No: 2**
**Date :**

# BOOK BANK

## PROBLEM STATEMENT:

To develop a Book bank management system. The system developed should contain the following features:

- This system adopts a comprehensive approach to minimize the manual work and schedule.
- The administrator should enter into the system using his/her personal username and password.
- The administrator should provide query for outdated/damaged books/magazines etc.
- The system checks for any damage for the particular book.
- The system should display about the damaged books and also the outdated magazines.
- The administrator should check and provides the action like verify, borrow, reserve, return books, notification of books through the system.
- The library inventory involves the actions like add book and remove book.

## BOOK BANK MANAGING MODULE

This use case starts when the librarian enters the system using his/her username and password.

**Flow of Events:**

**Basic flow:**

- The use case starts when the librarian enters the system using his/her username and password to the system.
- The administrator should provide query for outdated/damaged books/magazines etc.
- The system checks for any damage for the particular book.
- The system should display about the damaged books and also the outdated magazines.
- The administrator should check and provides the action like verify,borrow,reserve,return books, notification of books through the system.
- The library inventory involves the provides the actions like add book and remove book

**Alternative flow:**

If the librarian doesn't provide the correct valid username and password, then he/she application will not be able to enter or access the system.

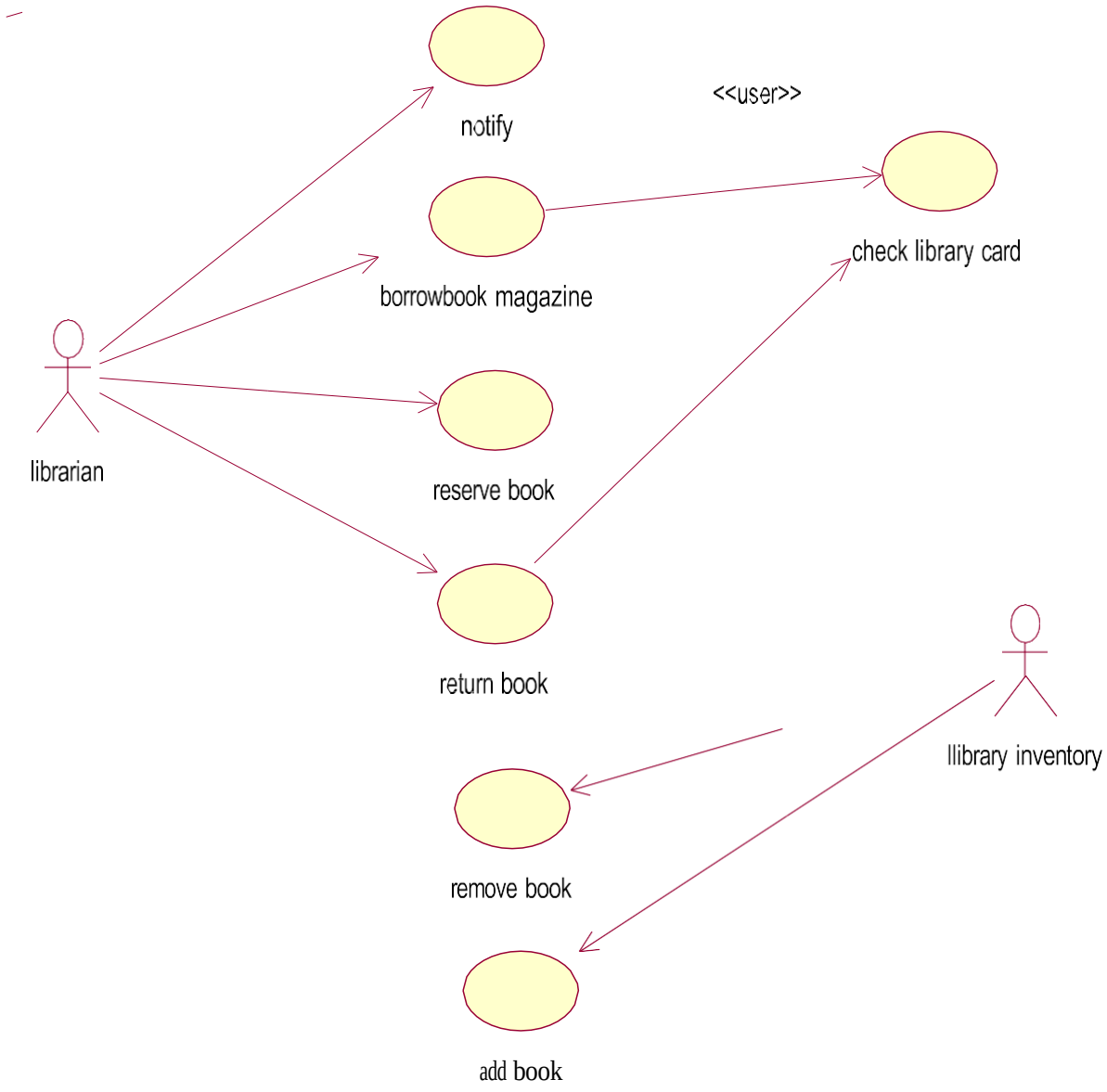
**Pre- condition:**

None

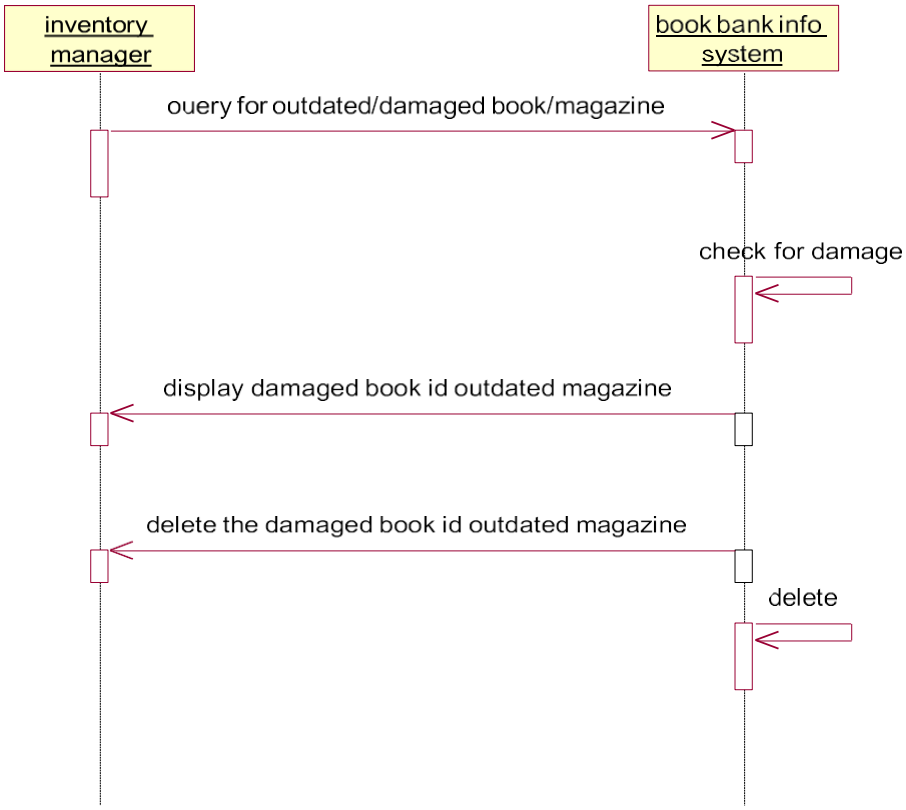
**Post- condition:**

After completion of this use case, the information of the book bank management will be maintained by the system and stored in the system's database.

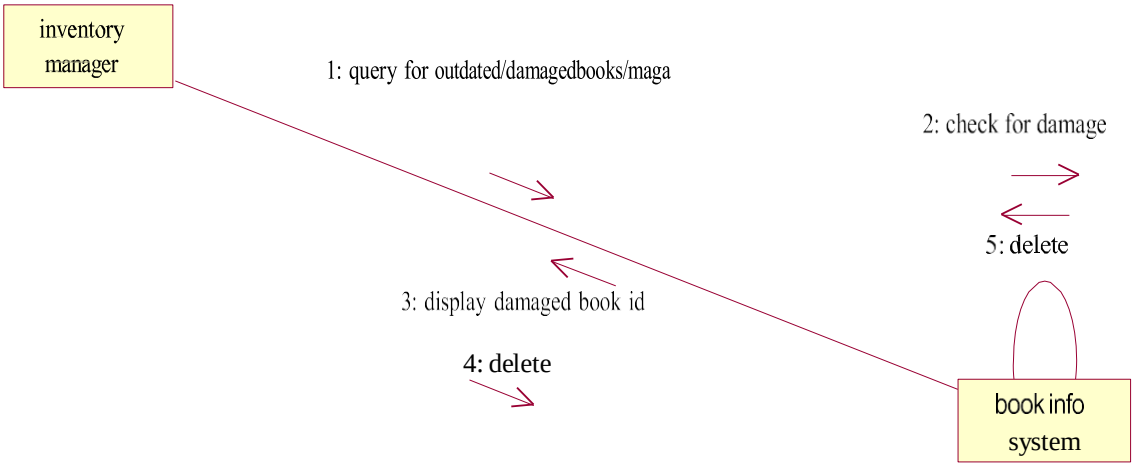
**USECASE DIAGRAM**



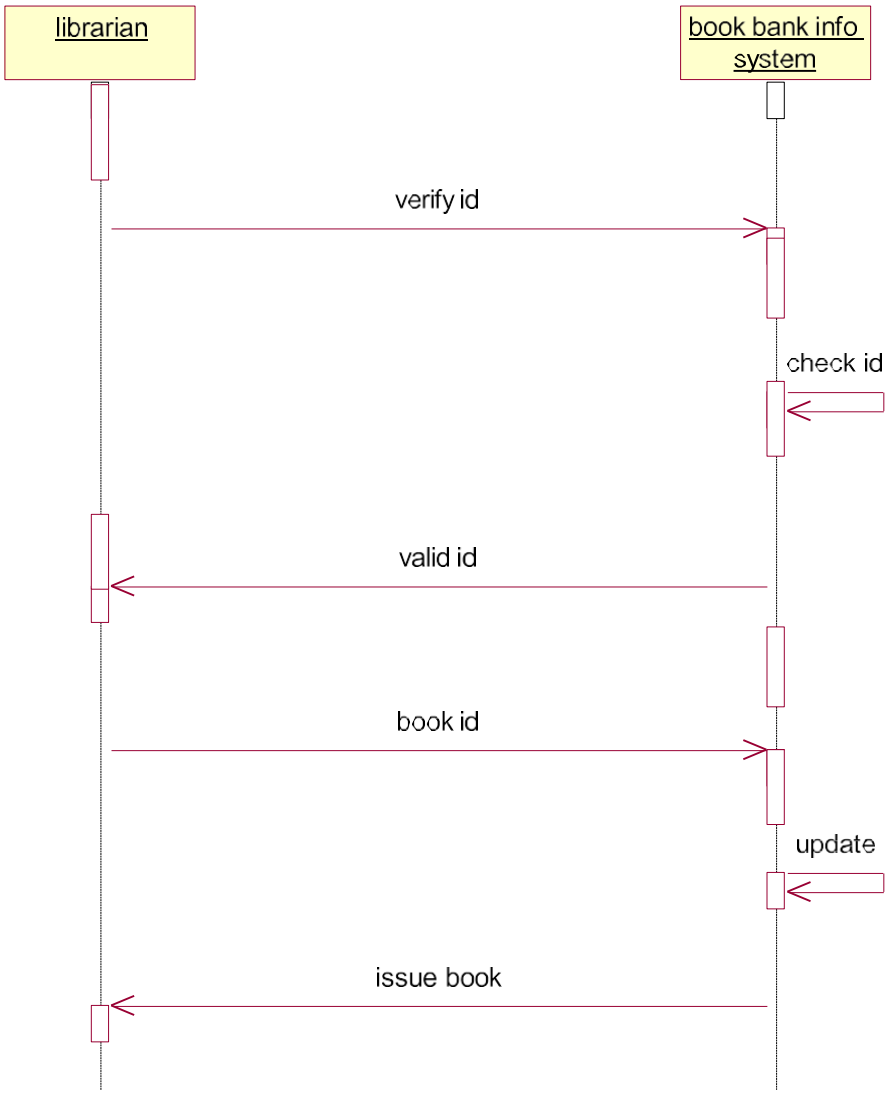
## SEQUENCE DIAGRAM

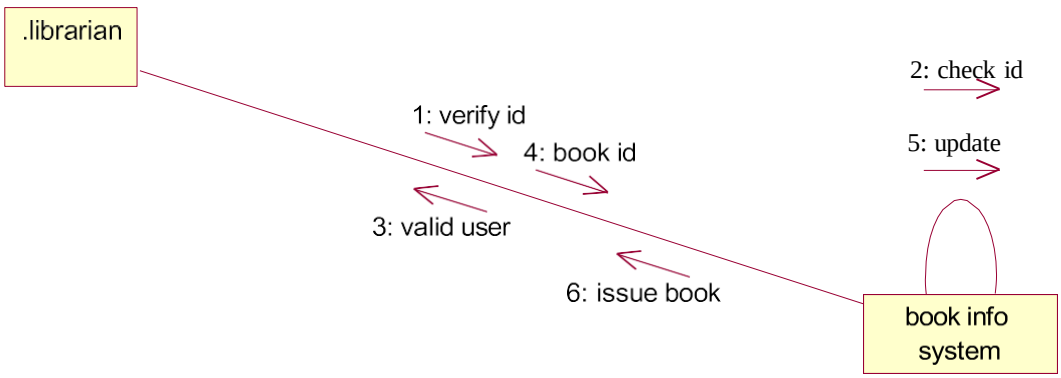



## COLOBRATION DIAGRAM

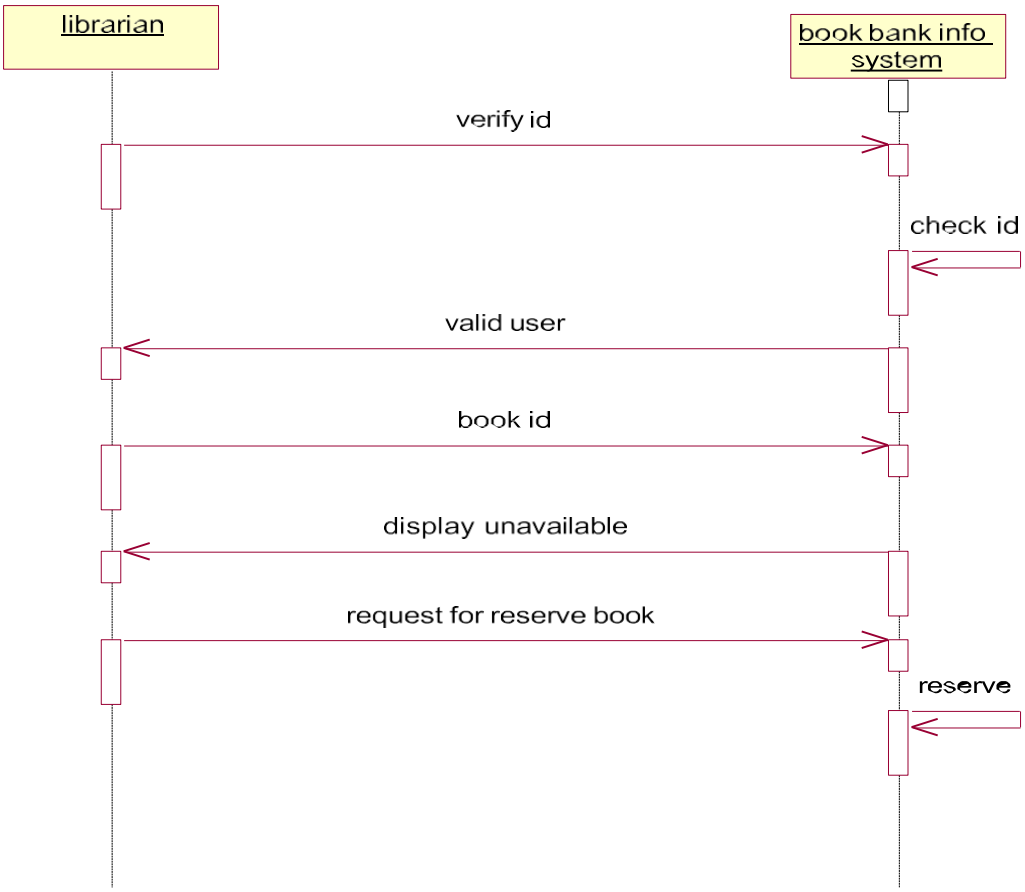


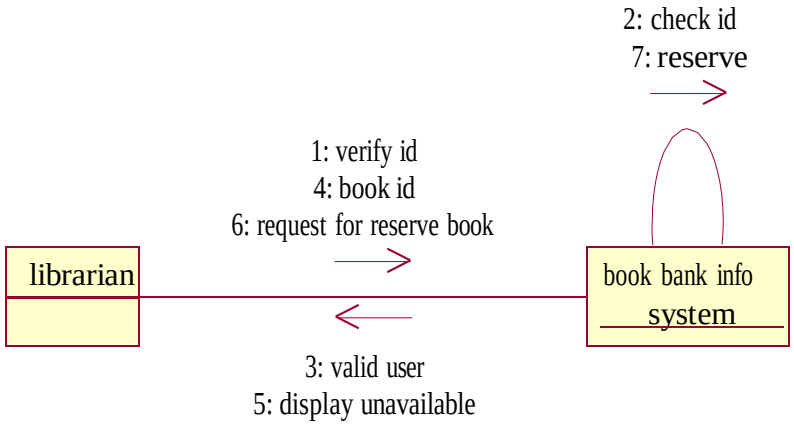
**BOOK ISSUE**


librarian
book bank info system
verify id
check id
valid id
book id
update
issue book

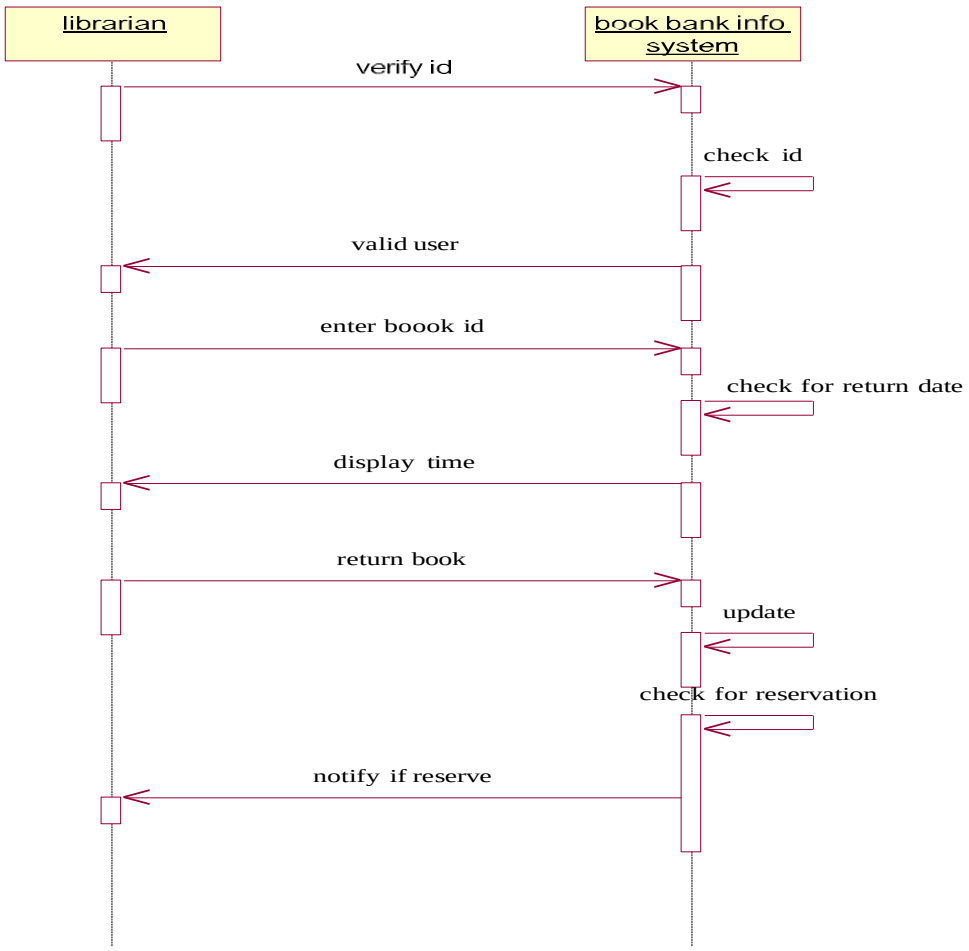

.librarian
2: check id
1: verify id
4: book id
5: update
3: valid user
6: issue book
book info system

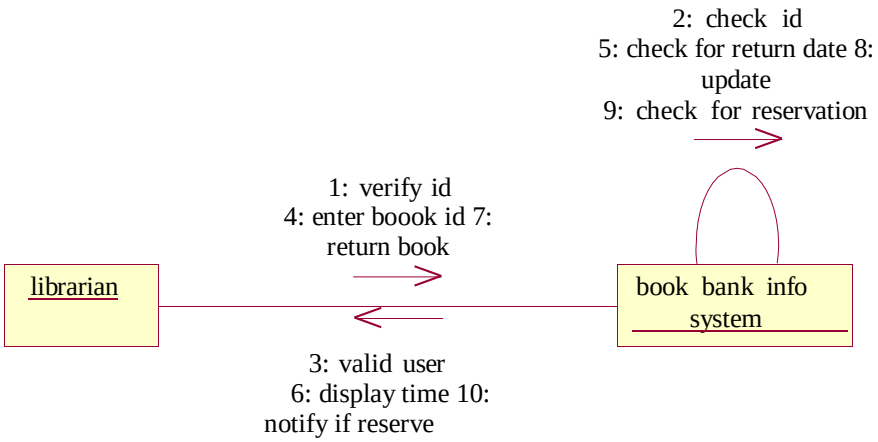
**BOOK RESERVATION**



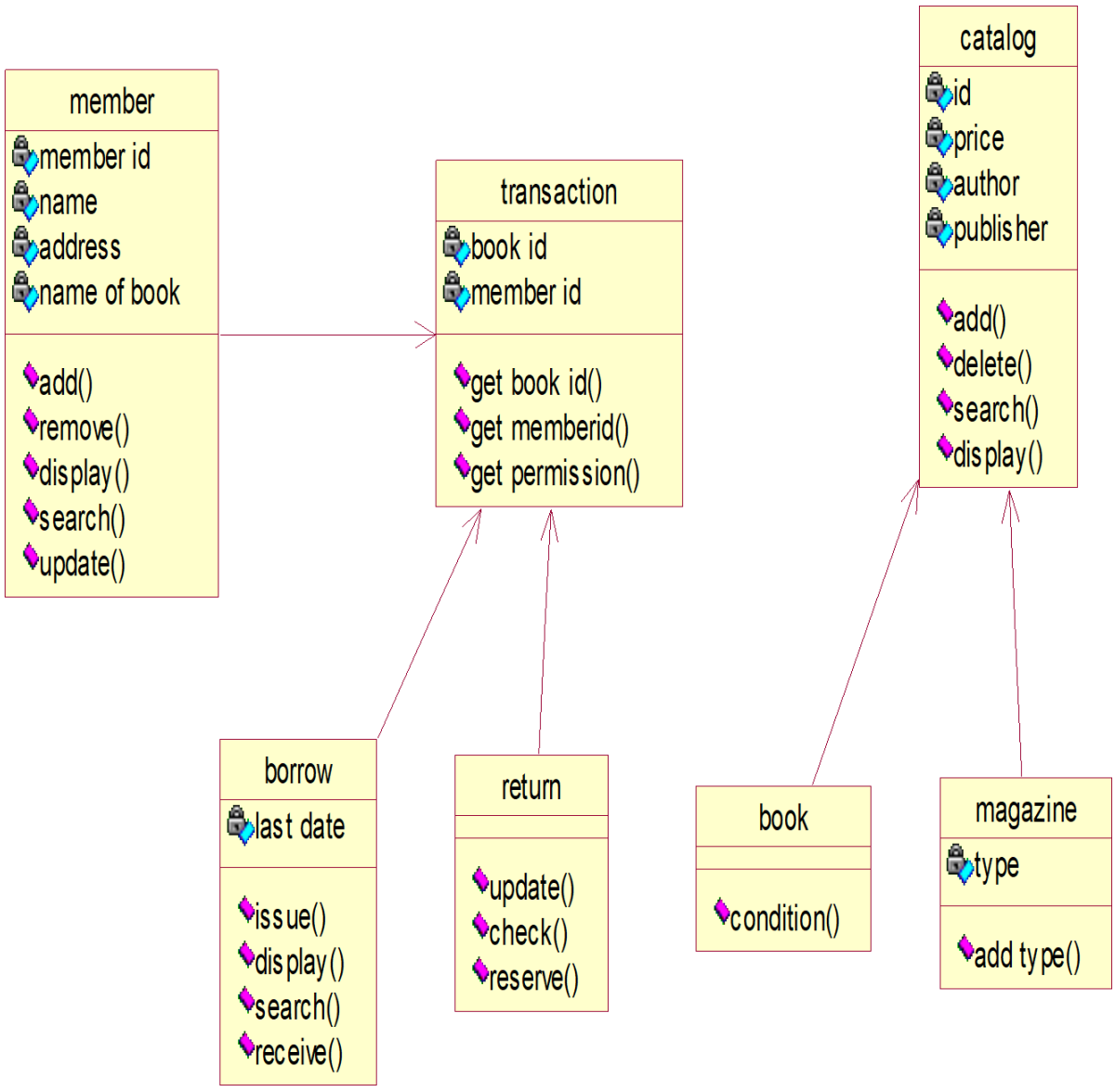



**BOOK RETURN**

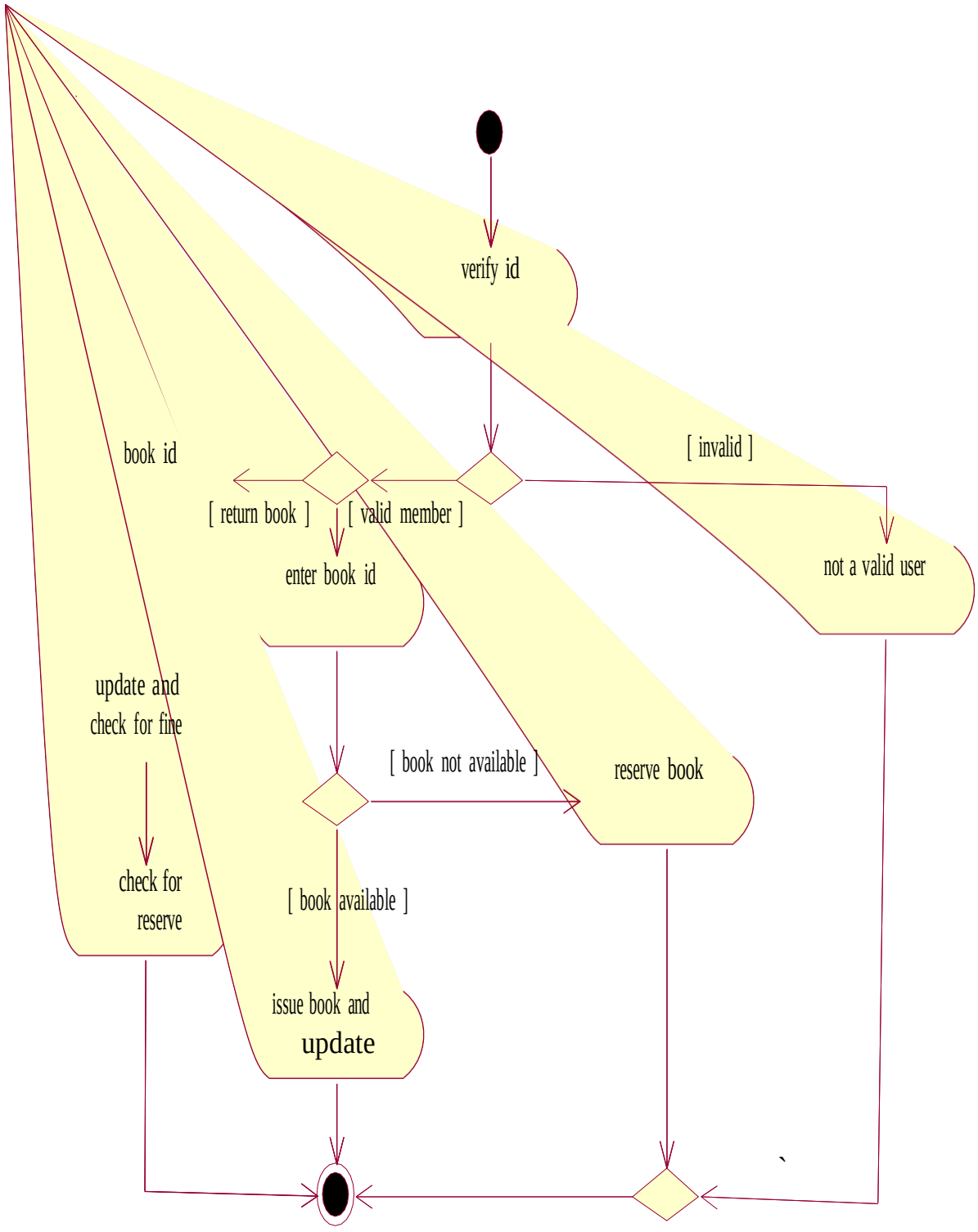

librarian
book bank info system
verify id
check id
valid user
enter boook id
check for return date
display time
return book
update
check for reservation
notify if reserve


2: check id
5: check for return date 8: update
9: check for reservation
1: verify id
4: enter boook id 7: return book
librarian
book bank info system
3: valid user
6: display time 10: notify if reserve

**CLASS DIAGRAM**

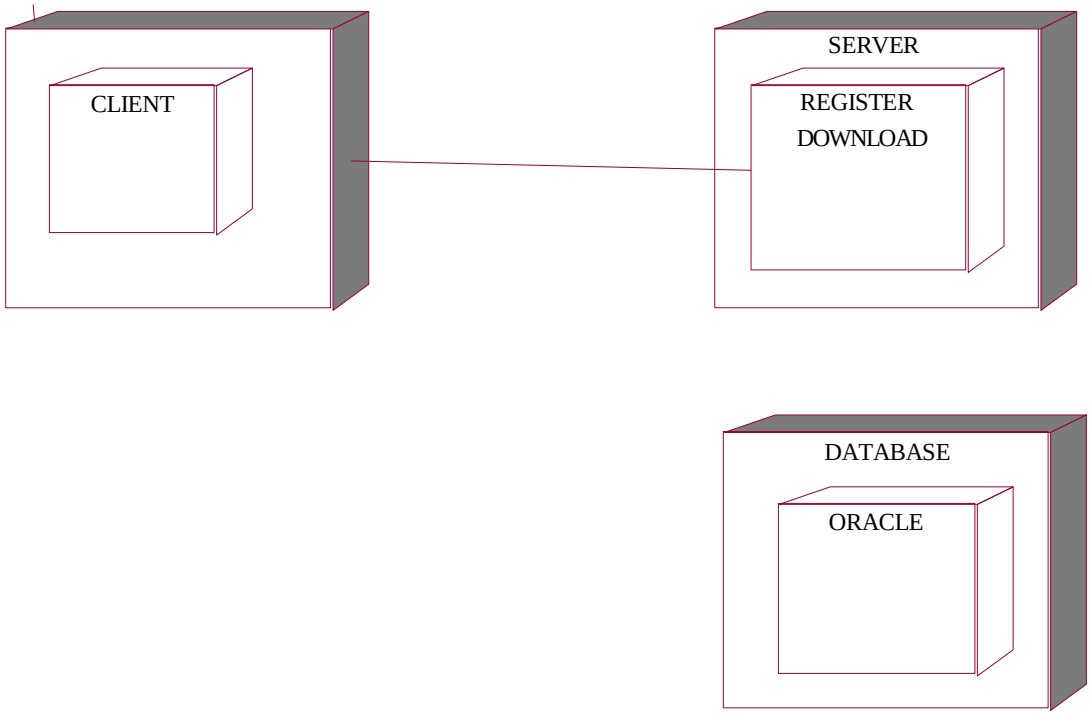


**ACTIVITY DIAGRAM**



**COMPONENT DIAGRAM**

**DEPLOYMENT DIAGRAM**




**Result:**

Thus the UML diagrams for Book Bank are drawn and code generated successfully.

**Ex.No:3**
**Date :**

# EXAM REGISTRATION

## 2. PROBLEM STATEMENT

To create an Exam registration software that will meet the needs of the applicant and help them in registering for the exam ,enquiry about the registered subject ,modification in database and cancellation for the registered project.

## 3. OVERALL DESCRIPTION

The Exam Registration System is an integrated system that has four modules as part of it.the four modules are

1. **Registration for the exam**
   In this module, the user can select the subject to register for the exam, Enquiry about the registered subject, Modification in the student database, canceling the registered subject
2. **Form for Registration**
   In this module the user can apply for the exam by giving the details about the candidate and selecting the subject for the registration.
3. **Modification in the Database**
   In this module the user can change the data's like the phone number, address can be done.
4. **Cancellation for the registered subject**
   In this module the user can cancel their name which is registered for the exam.

**SOFTWARE REQUIRMENTS**

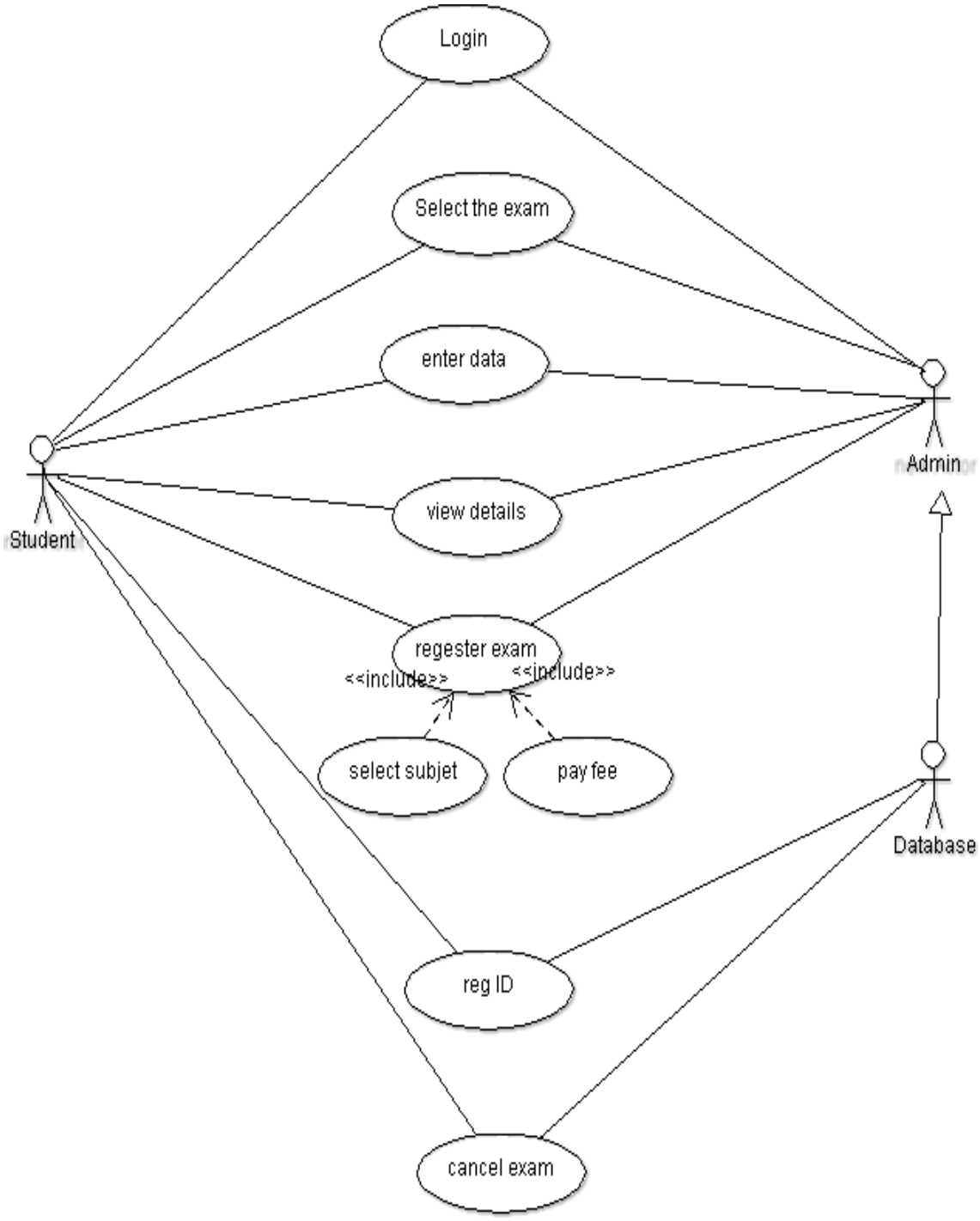
4. Microsoft Visual Basic 6.0
5. Rational Rose
6. Microsoft Access

**HARDWARE REQUIRMENTS**

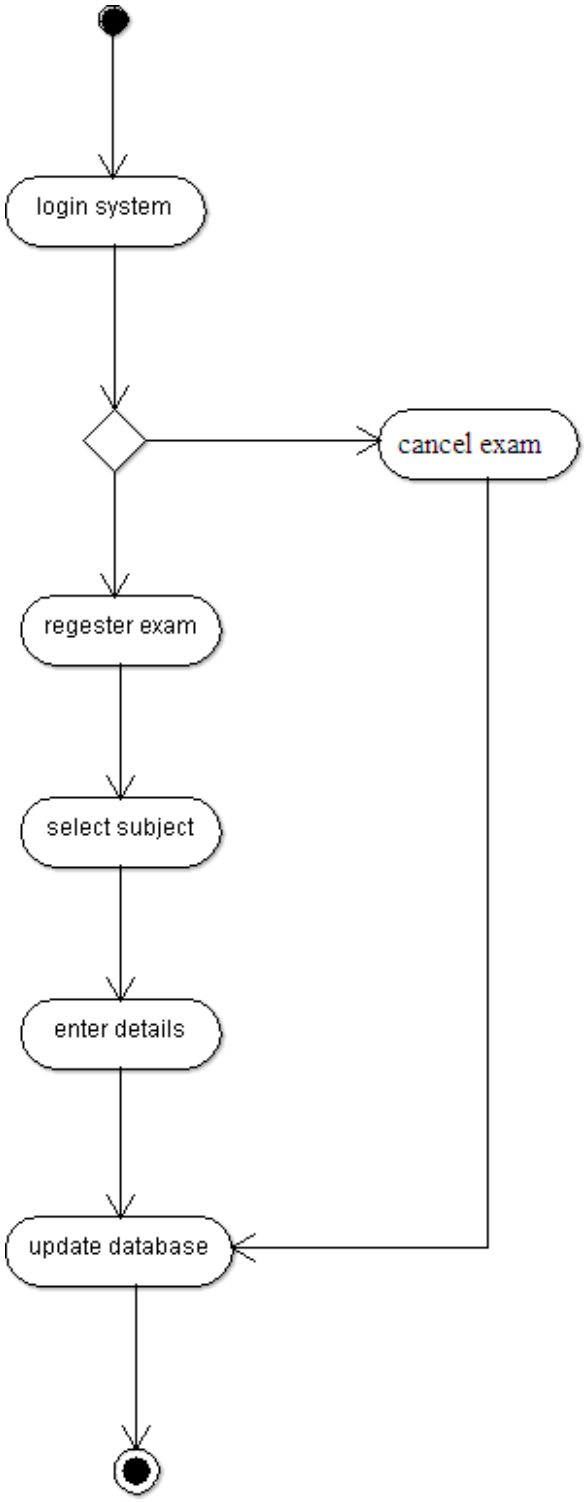
1.128MB RAM

2. Pentium III Processor

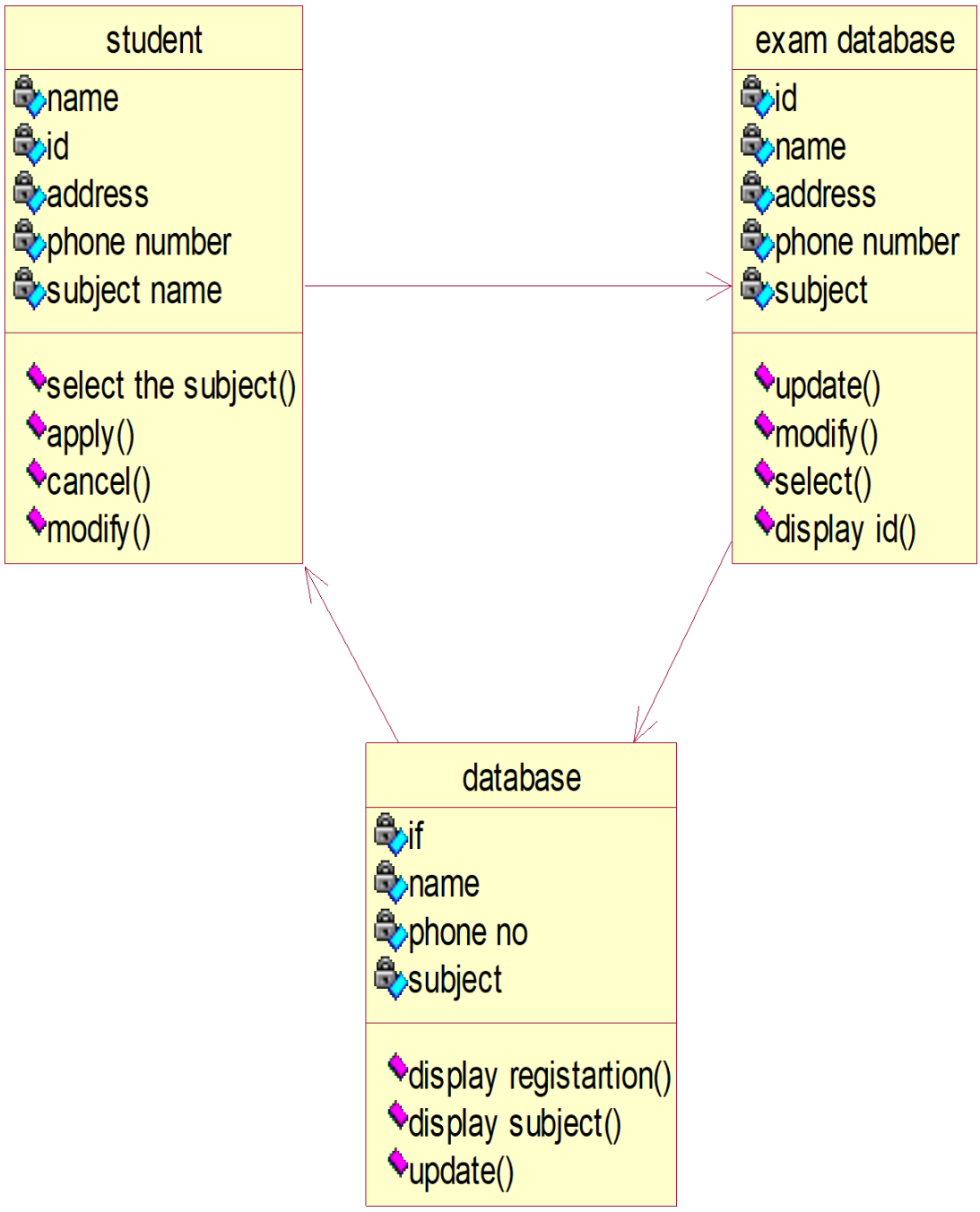
**USE CASE DIAGRAM**



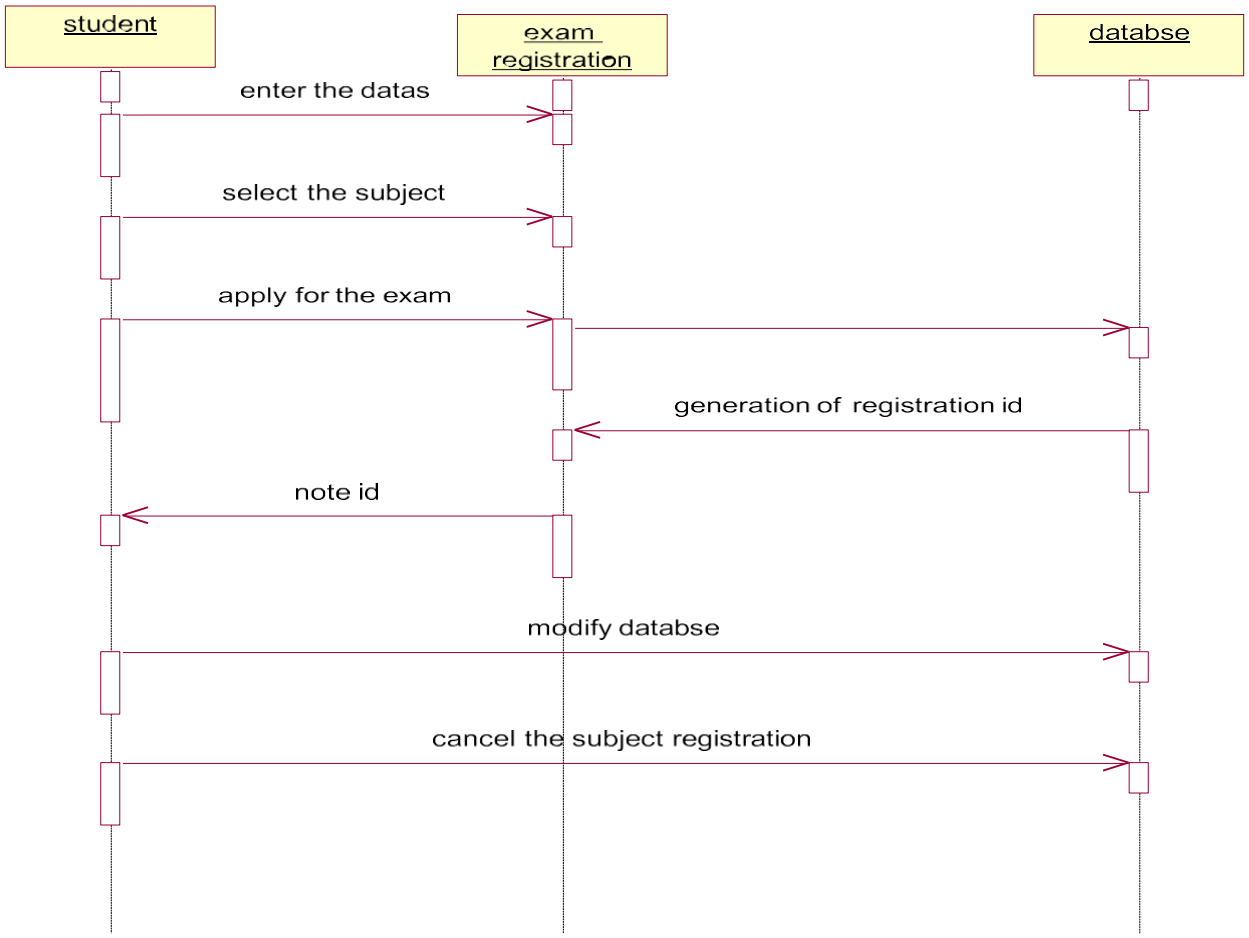
**ACTIVITY DIAGRAM**



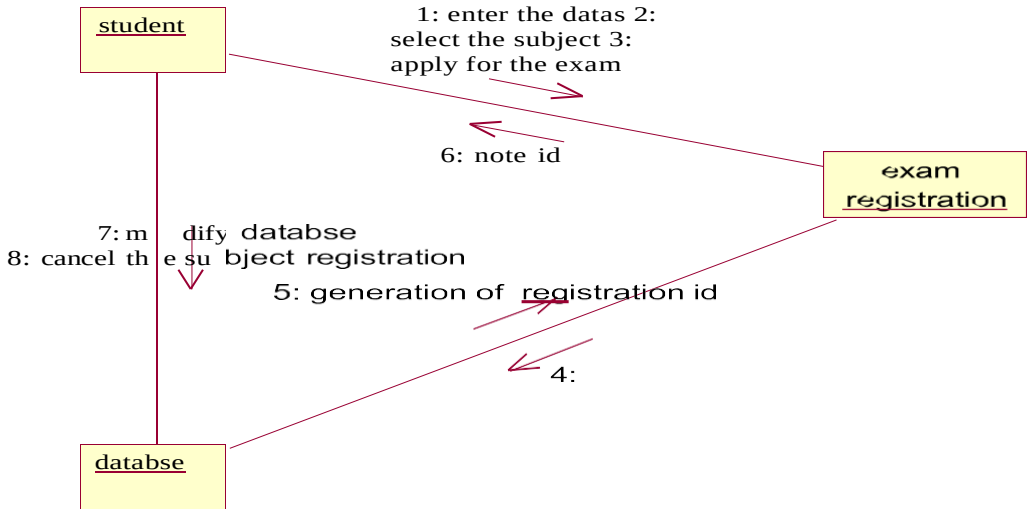
**CLASS DIAGRAM**



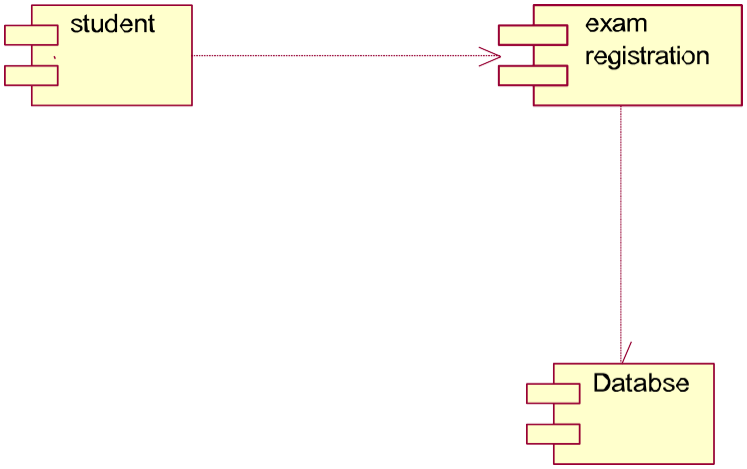
## SEQUENCE DIAGRAM:



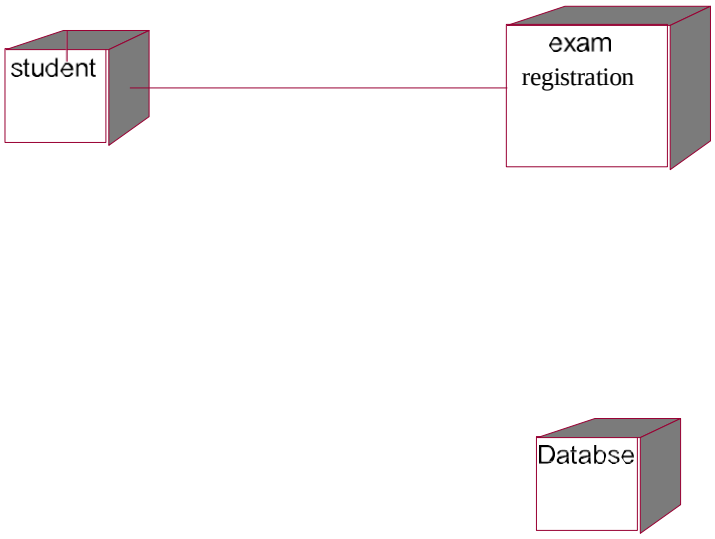

## COLLABRATION DIAGRAM:



**COMPONENT DIAGRAM**




**DEPLOYMENT DIAGRAM:**




**Result:**

Thus the UML diagrams for Exam Registration System are drawn and code generated successfully.

**Ex. No.: 4**
**Date :**

## STOCK MAINTENANCE SYSTEM

### PROBLEM STATEMENT

INVENTORY SYSTEM is a real time application used in the merchants day to day system. This is a database to store the transaction that takes places between the Manufacturer, Dealer and the Shop Keeper that includes stock inward and stock outward with reference to the dealer. Here we assume our self as the Dealer and proceed with the transaction as follows:

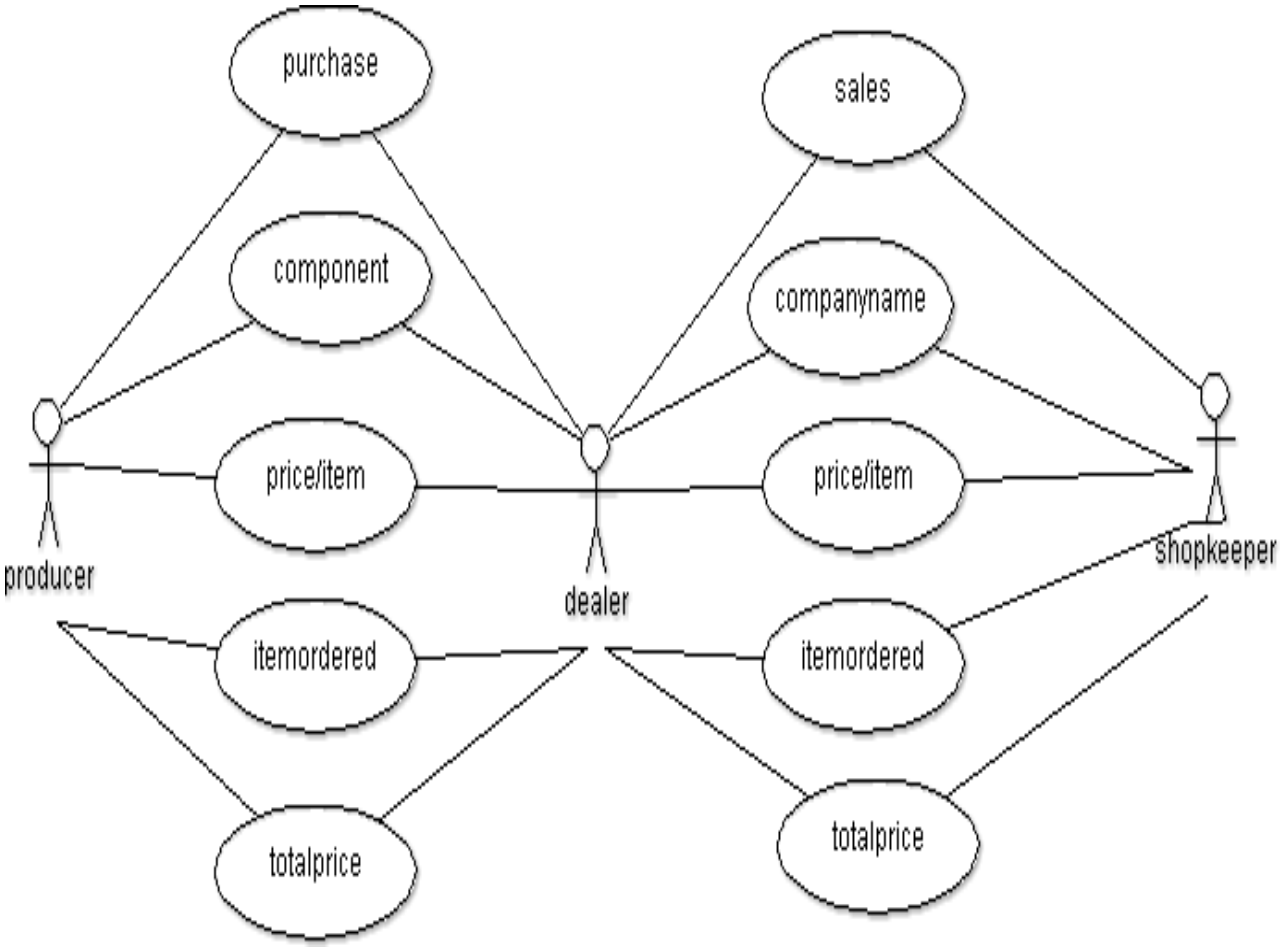
The Manufacturer is the producer of the items and it contains the necessary information of the item such as price per item, Date of manufacture, best before use, Number of Item available and their Company name and address.

The Dealer is the secondary source of an Item and he purchases Item from the manufacturer by requesting the required Item with its corresponding Company Name and the Number of Items required. The Dealer is only responsible for distribution of the Item to the Retailers in the Town or City.

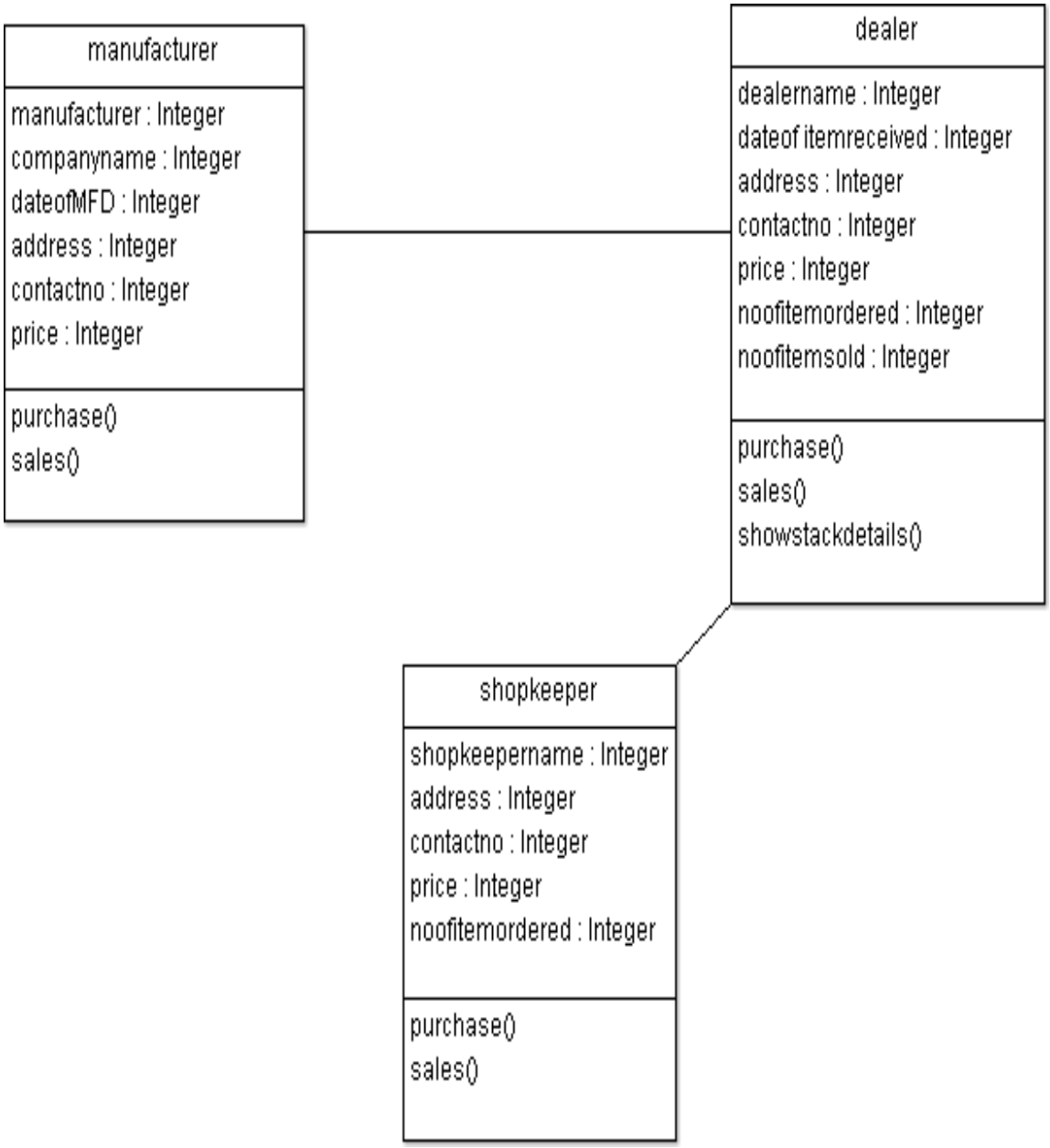
The Shop Keeper or Retailer is the one who is prime source for selling items in the market. The customers get Item from the Shop Keeper and not directly from the Manufacturer or the Dealer.

The Stock is the database used in our System which records all transactions that takes place between the Manufacturer and the Dealer and the Dealer and the Retailer.

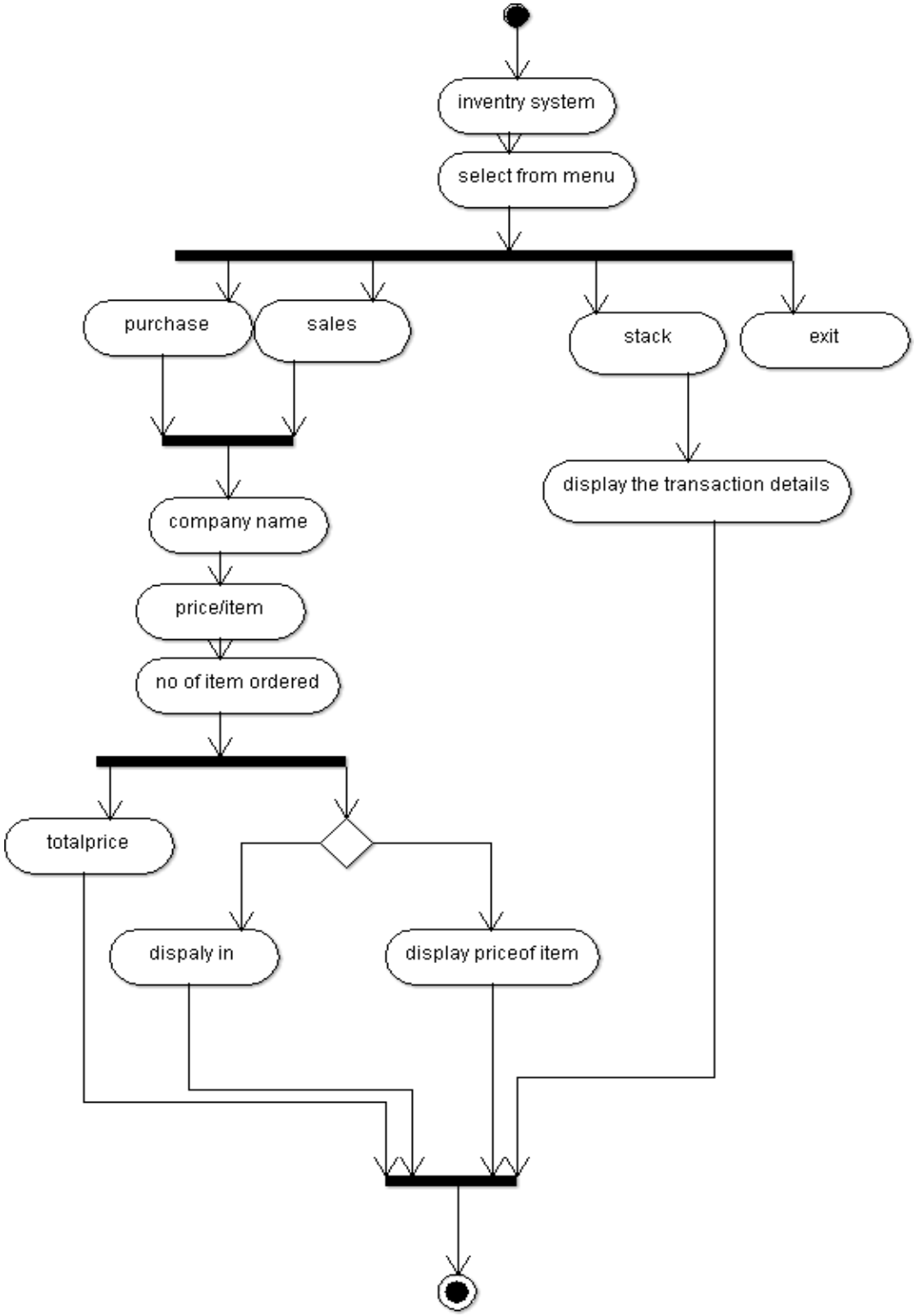
**USECASE DIAGRAM**



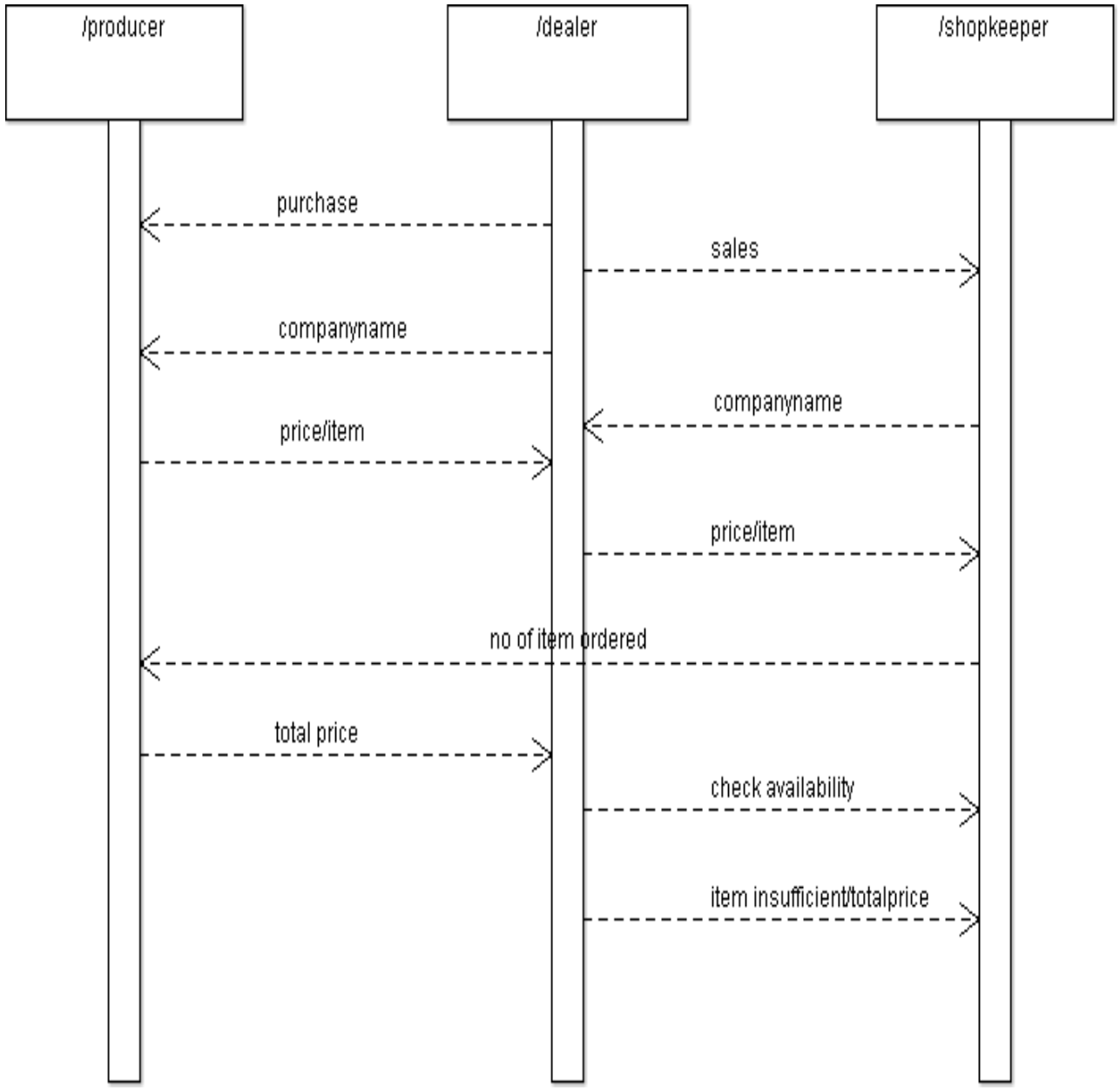
**CLASS DIAGRAM**



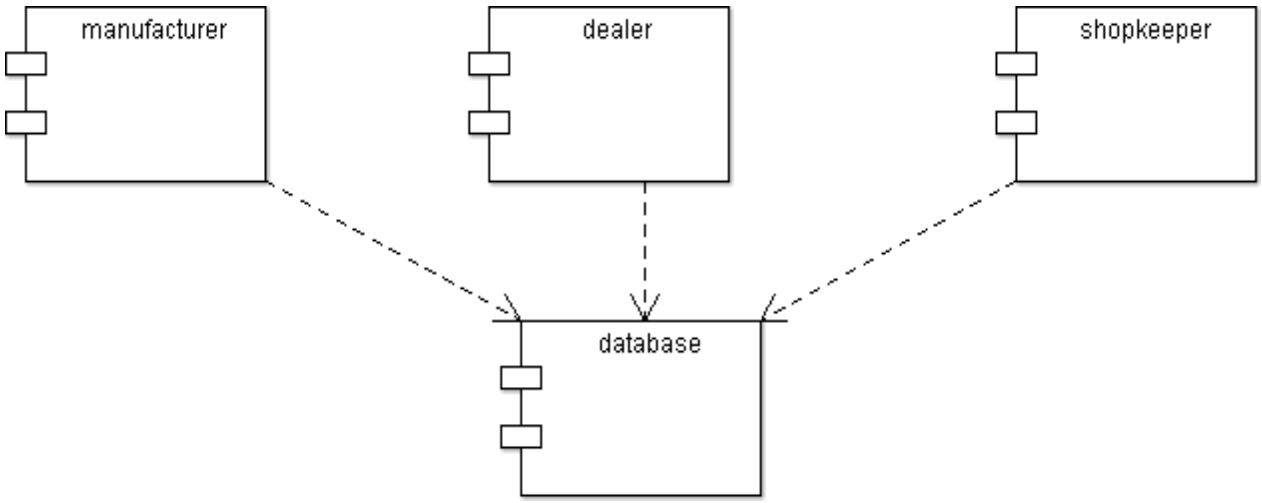
**ACTIVITY DIAGRAM**



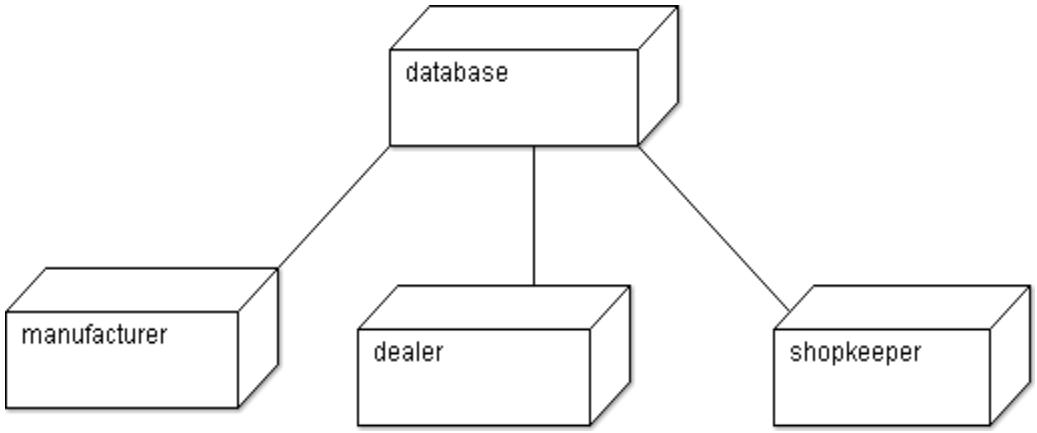
**SEQUENCE DIAGRAM**



**COMPONENT DIAGRAM**




**DEPLOYMENT DIAGRAM**




**Result:**

Thus the UML diagram for Stock Maintenance System is drawn and code generated successfully.

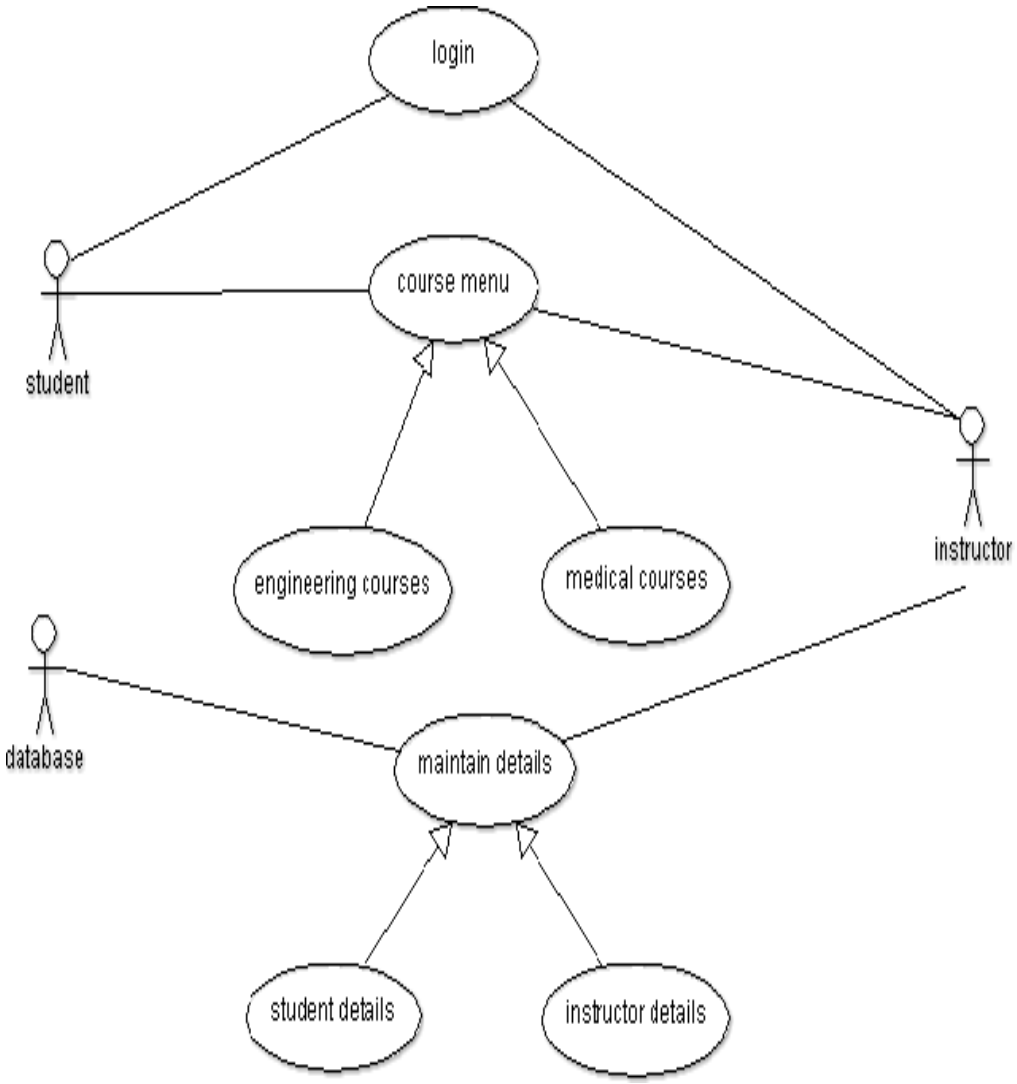
**Ex. No: 5**
**Date :**

## ONLINE COURSE RESERVATION SYSTEM

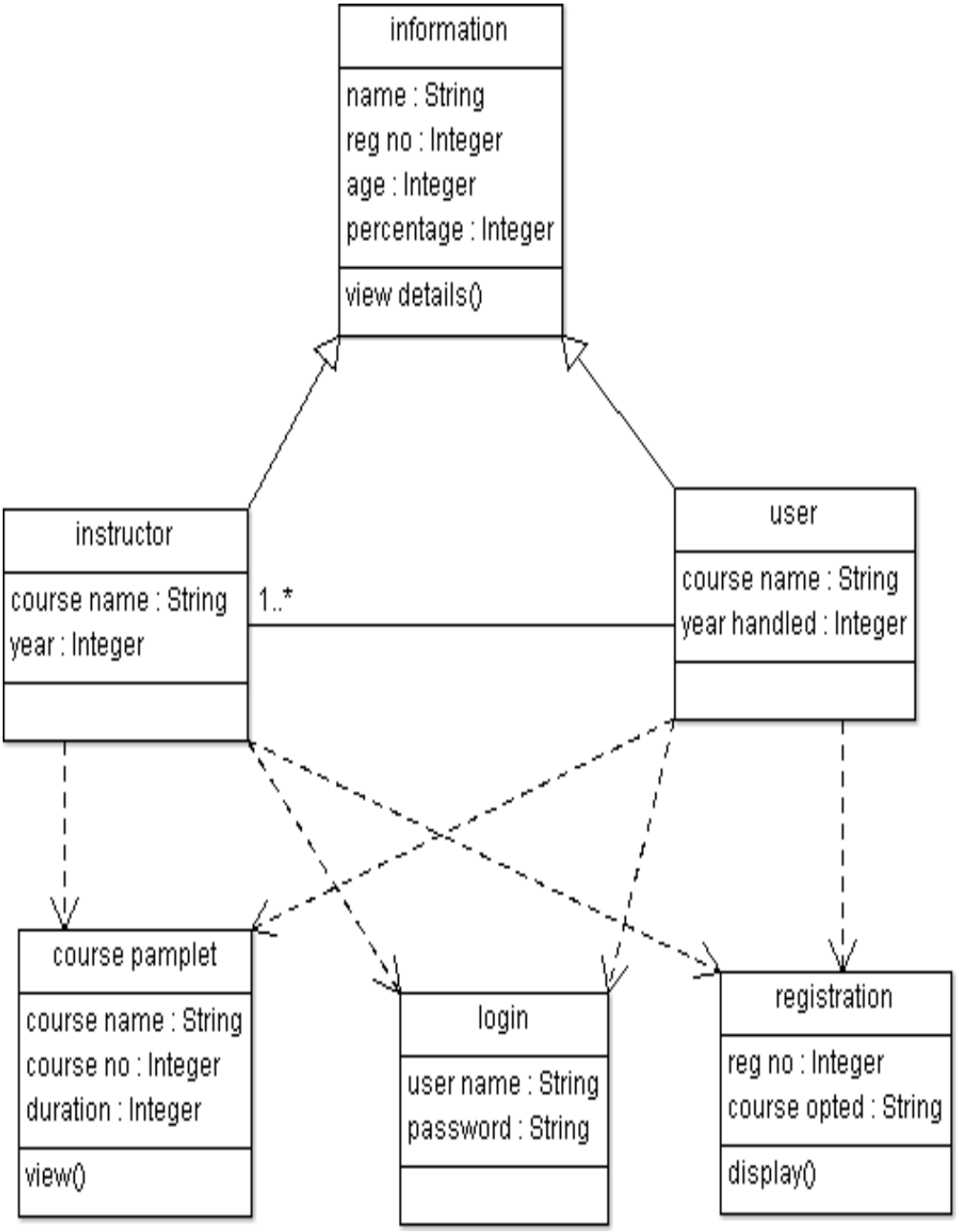
**PROBLEM STATEMENT:**

- The course registration system will allow students to register for courses and view report cards from personal computers attached to the campus LAN as well as over the Internet. Professors will be able to access the system to sign up to teach courses as well as record grades.
- The legacy system performance is rather poor, so the new system must ensure that access course information from the legacy database but will not update it. The registrar's office will continue to maintain course information through another system.
- At the beginning of each semester, students may request a course catalogue containing a list of course offerings for the semester. Information about each course, such as professor, department, and prerequisites, will be included to help students make informed decisions.
- The new system will allow students to select four courses offering for the coming semester. In addition, each student will indicate two alternatives choices in case the student cannot be assigned to a primary selection. Course offerings will have a maximum of ten students and a minimum of three students. A course offering with fewer than three students will be canceled. For each semester, there is period of time that the students can change their schedule. Students must be able to access the system during this time to add or drop courses. Once the registration process is completed for a student, the registration system sends information to the billing system so the student can be billed for the semester. If a course fills up during the actual registration process, the student must be notified of the change before submitting the schedule for processing.
- At the end of the semester, the student will be able to access the system to view an electronic report card. Since student grades are sensitive information, the system must employ extra security measures to prevent unauthorized access.

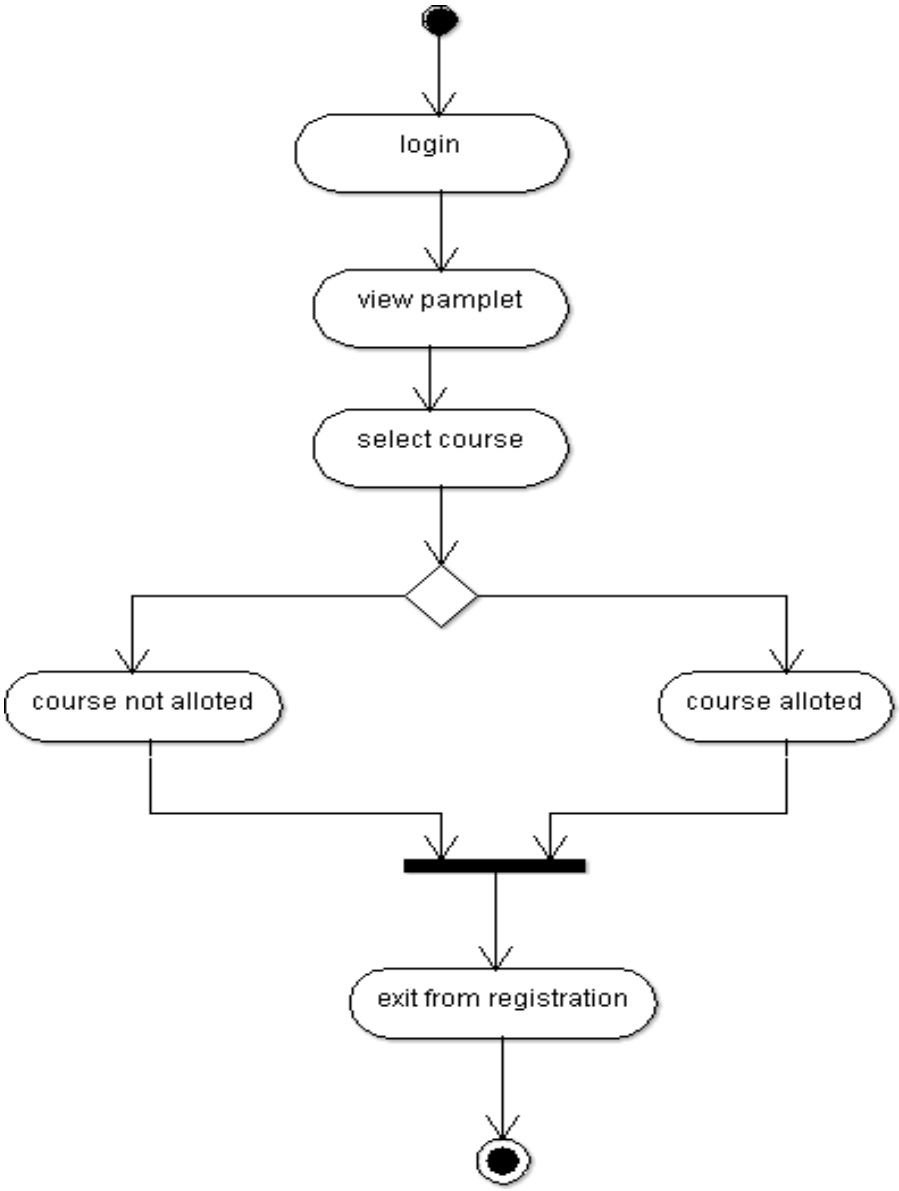
**USECASE DIAGRAM**



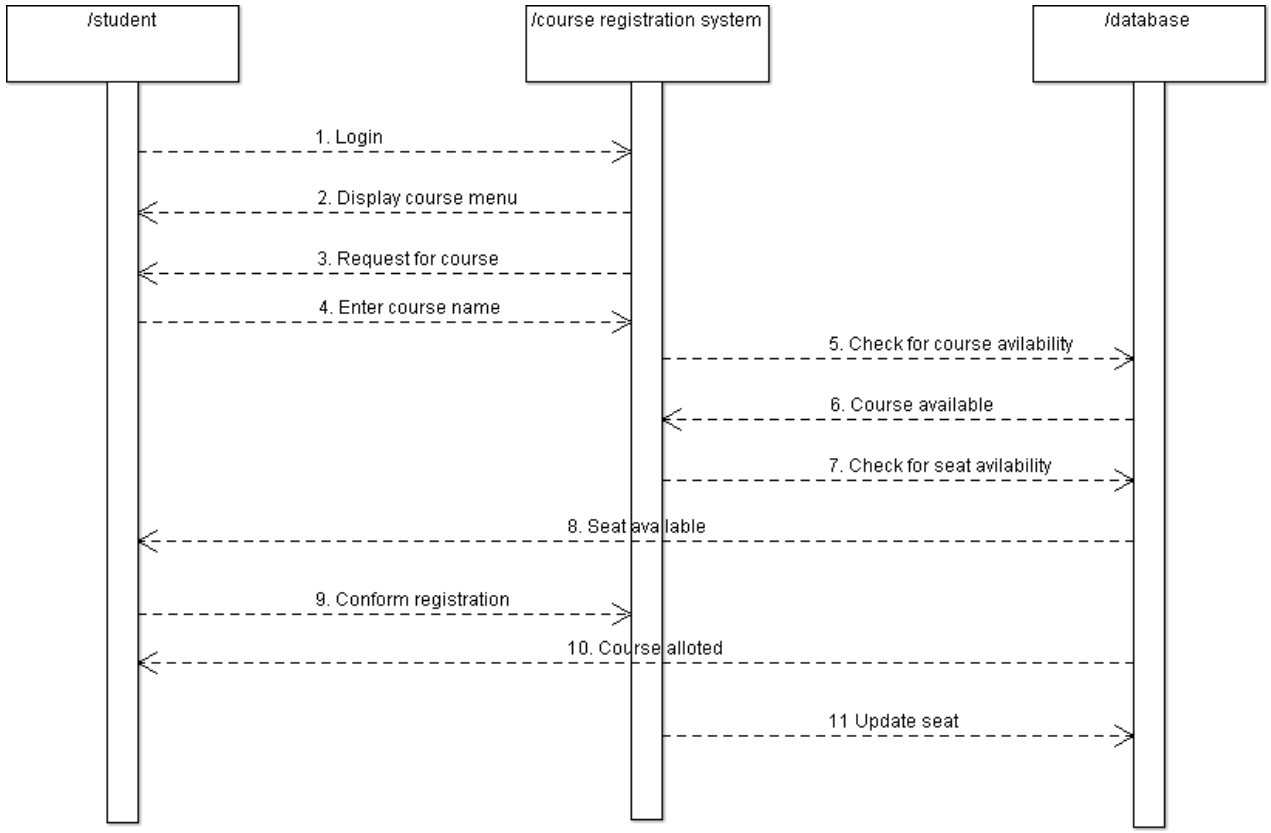
**CLASS DIAGRAM**



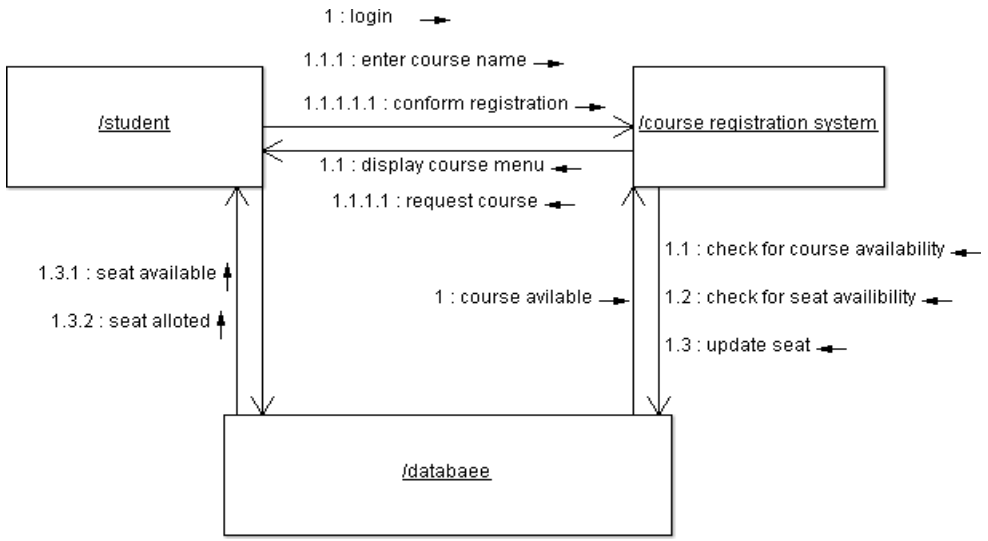
**ACTIVITY DIAGRAM**



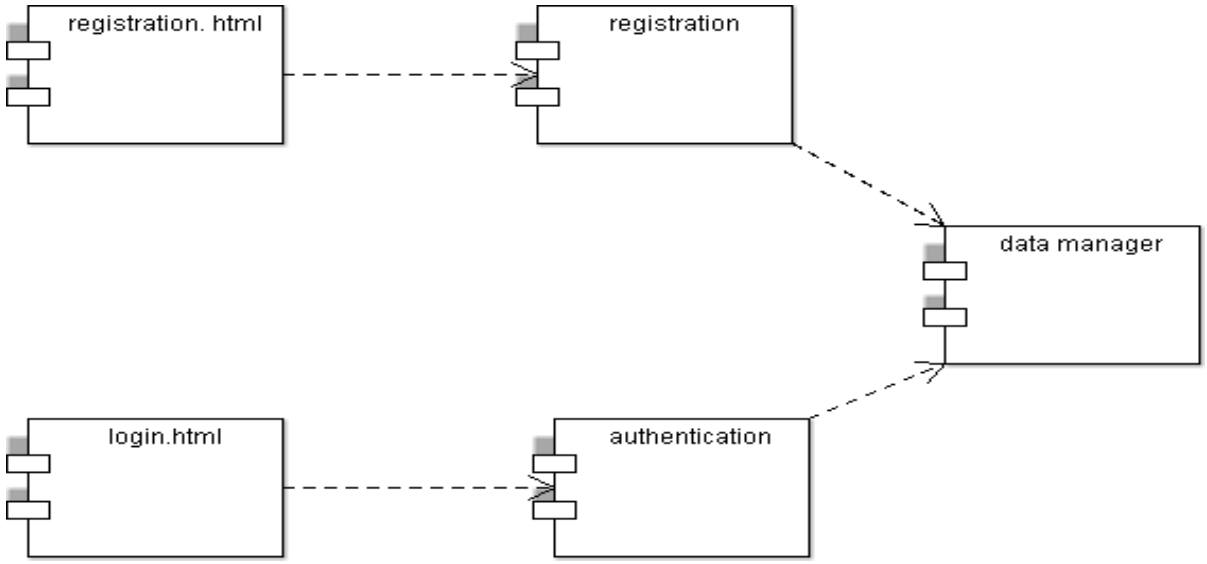
## SEQUENCE DIAGRAM



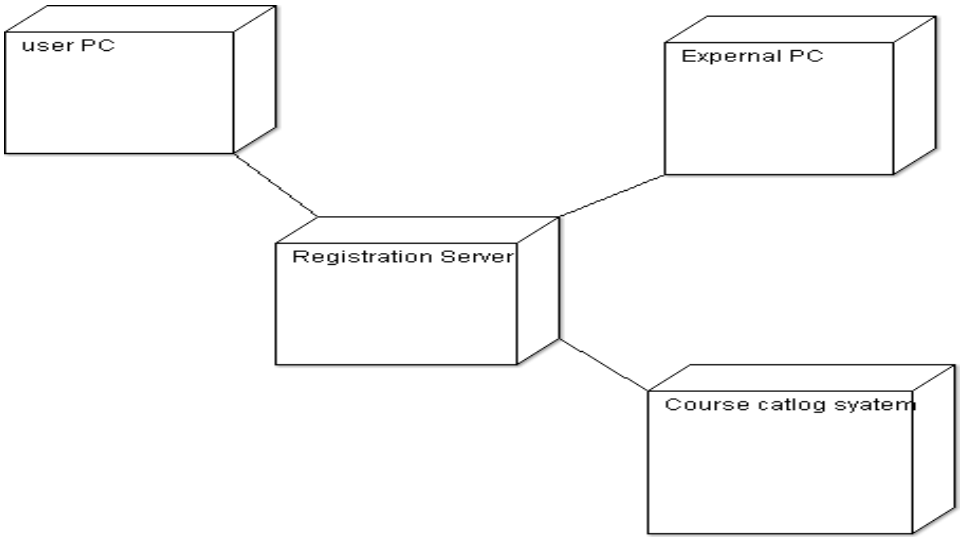

## COLLABORATION DIAGRAM



**COMPONENT DIAGRAM**




**DEPLOYMENT DIAGRAM**




**Result:**

Thus the UML diagram for Online Course Reservation System is drawn and code generated successfully.

**Ex. No: 6**
**Date :**

# e-TICKETING

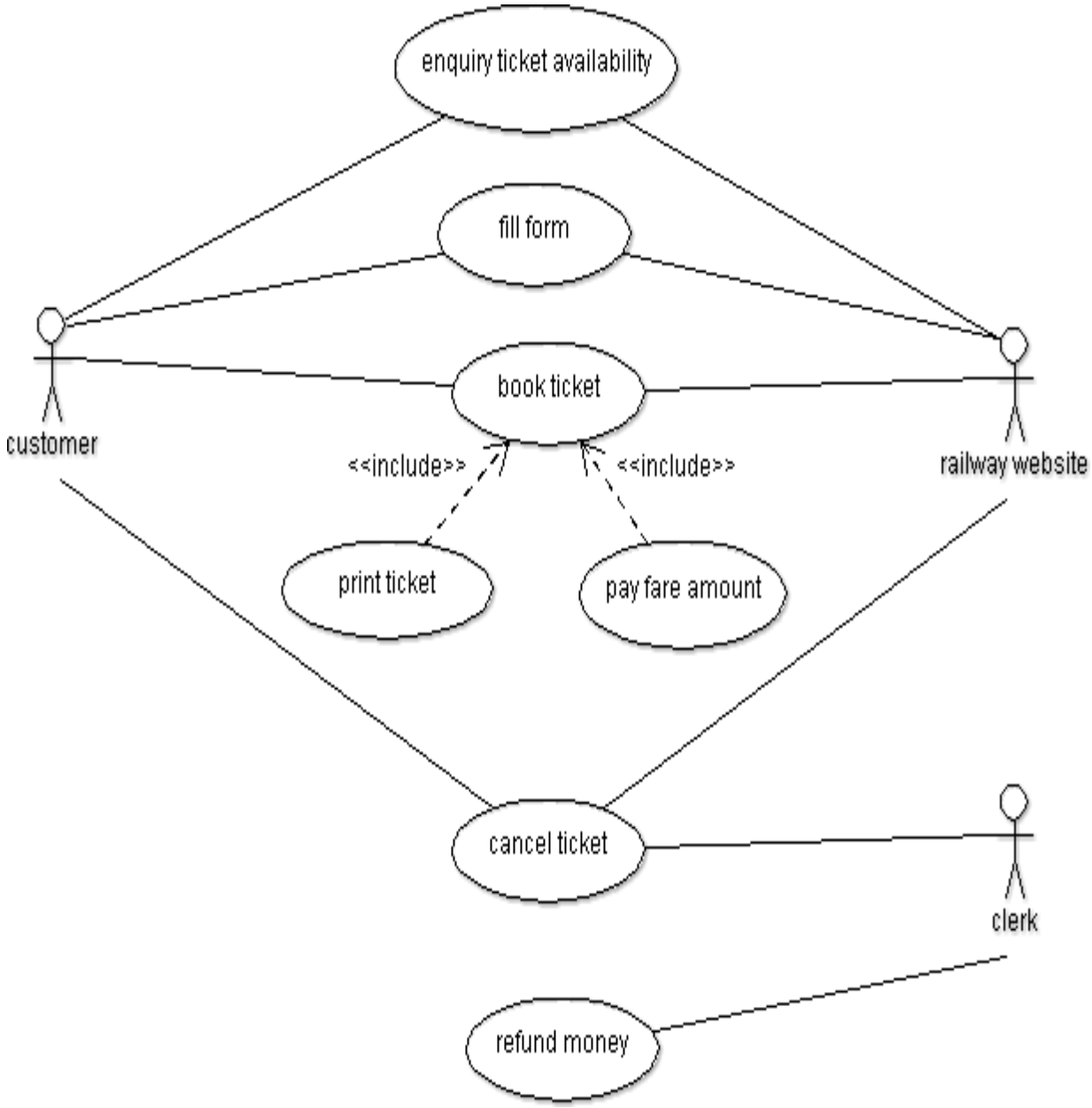
## PROBLEM STATEMENT

Railway Reservation System is a system used for booking tickets over internet. Any Customer Can book tickets for different trains. Customer can book a ticket only if the tickets are available. Customer searches for the availability of tickets then if the tickets are available he books the tickets by initially filling details in a form. Tickets can be booked in two ways by i-ticket or by e-ticket booking.

In case of i-ticket booking customer can book the tickets online and the tickets are couriered to Particular customer at their address. But in case of e-ticket booking and cancelling tickets are booked and cancelled online sitting at the home and customer himself has to take print of the ticket but in both the cases amount for tickets are deducted from customers account.

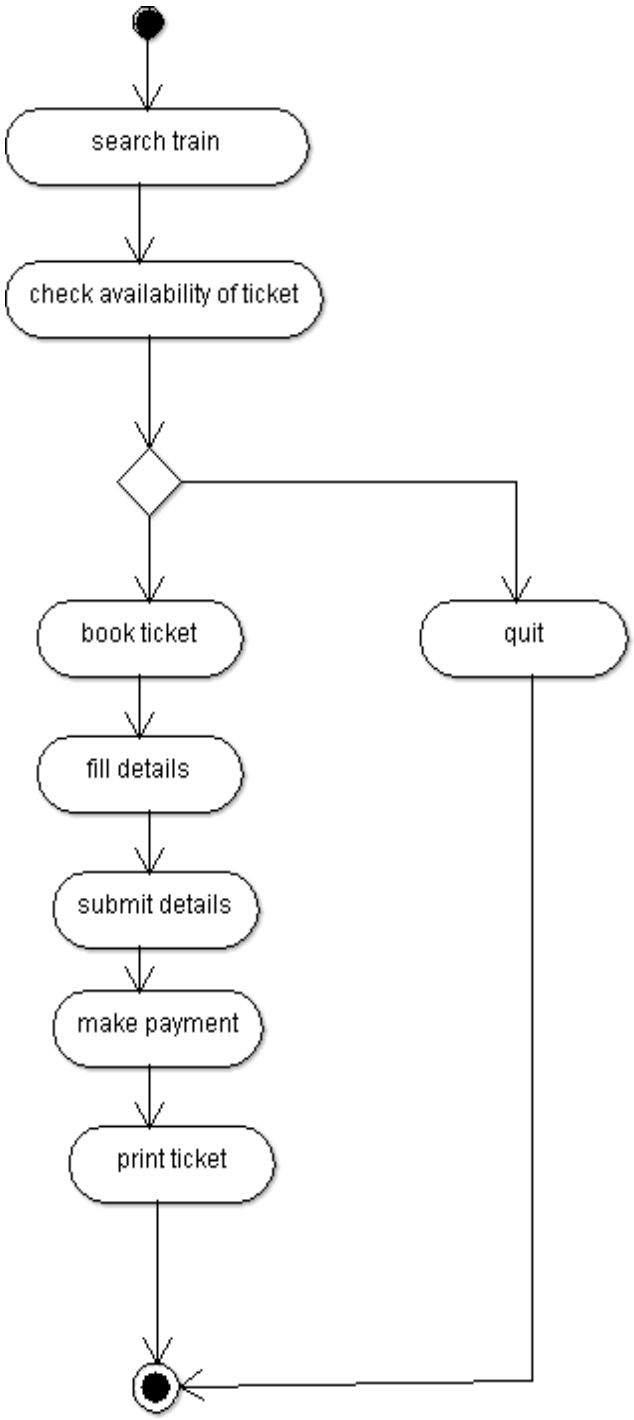
For cancellation of ticket the customer has to go at reservation office than fill cancellation form and ask the clerk to cancel the ticket than the refund is transferred to customer account. After booking ticket the customer has to checkout by paying fare amount to clerk.

**USECASE DIAGRAM**

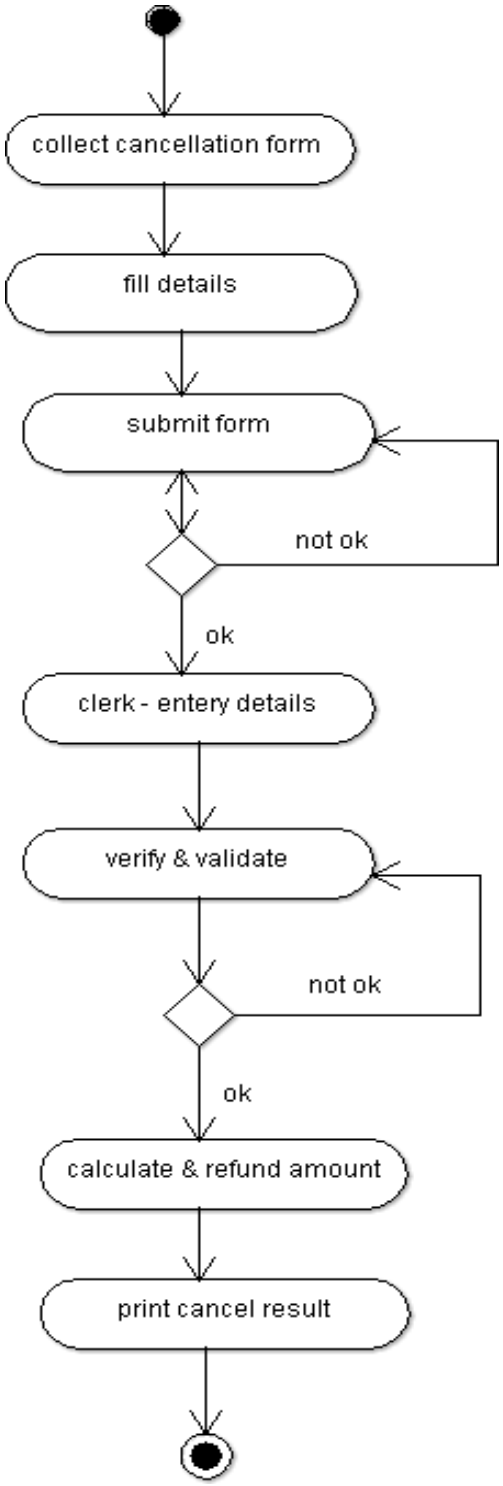


**ACTIVITY DIAGRAM**

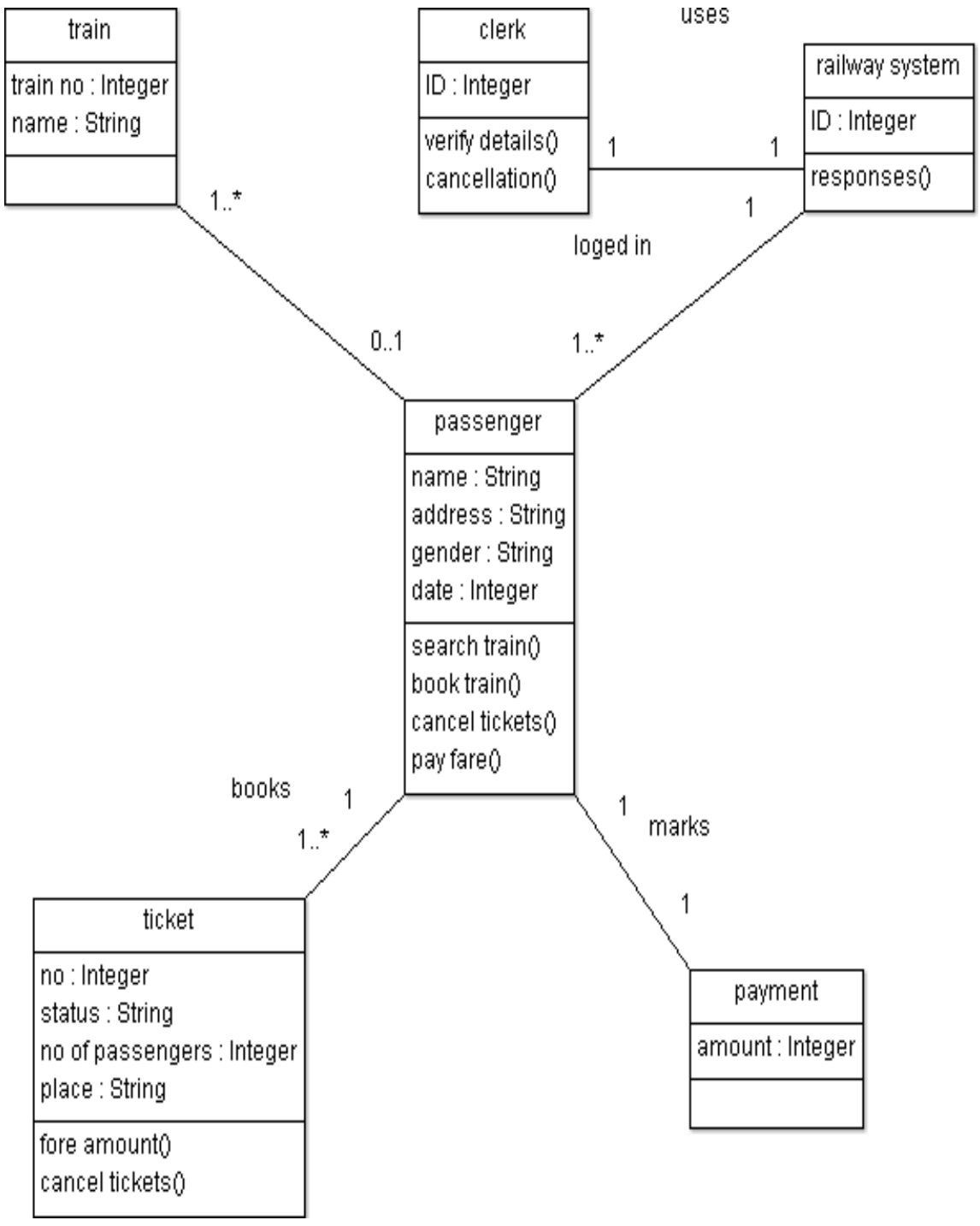
**BOOKING TICKET**



**CANCEL TICKET**

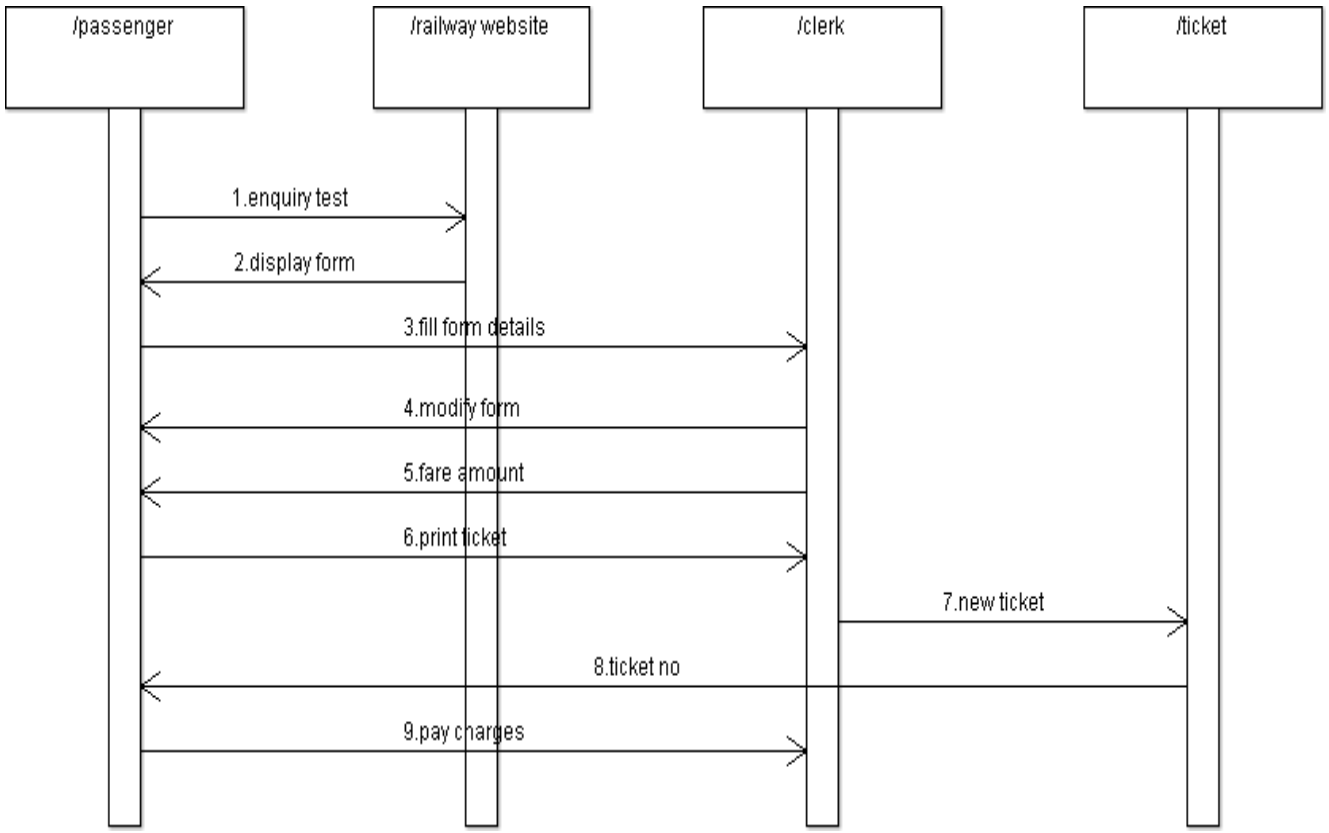


**CLASS DIAGRAM**

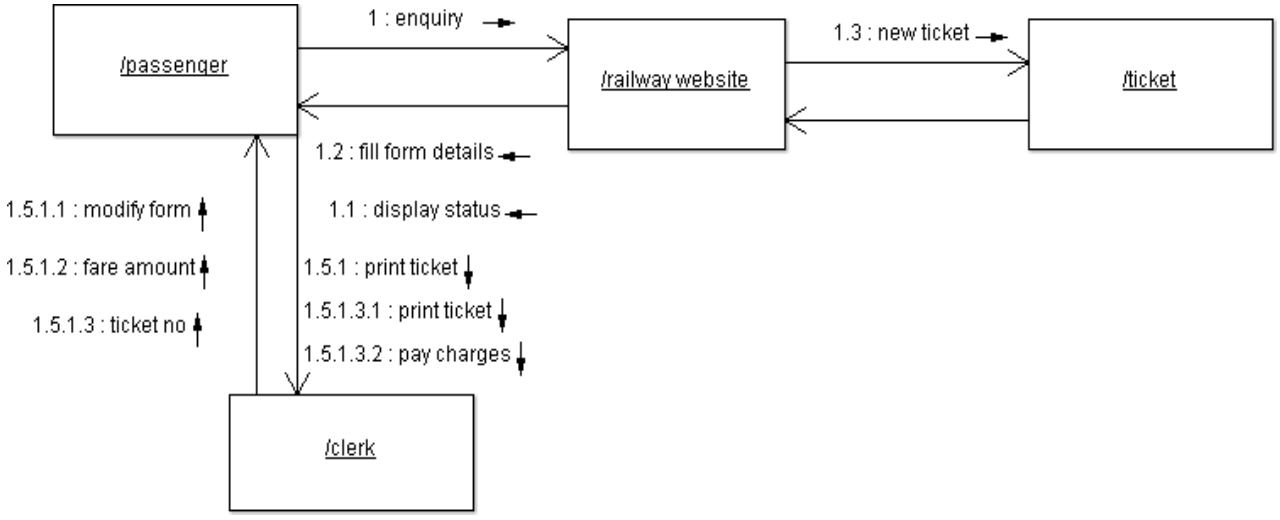


**SEQUENCE DIAGRAM**

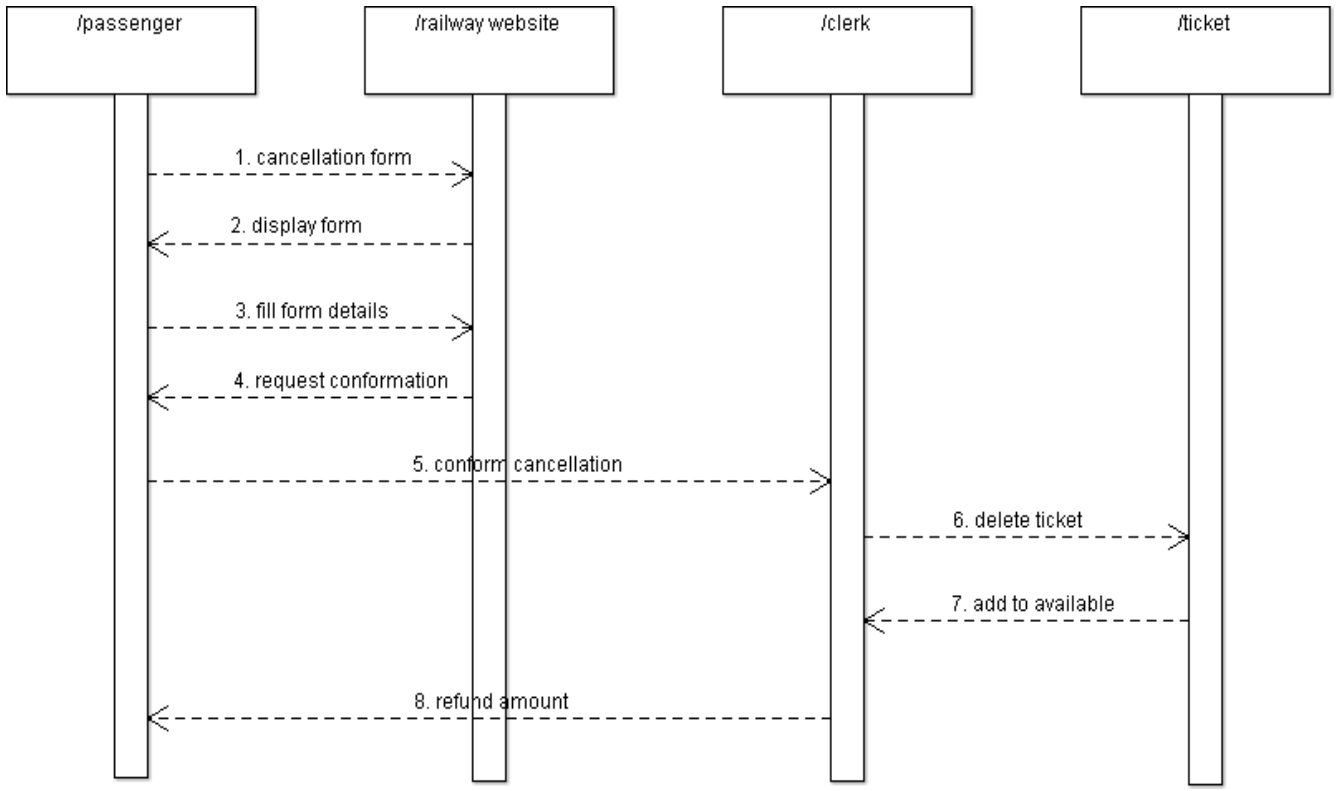
**BOOKING TICKET**



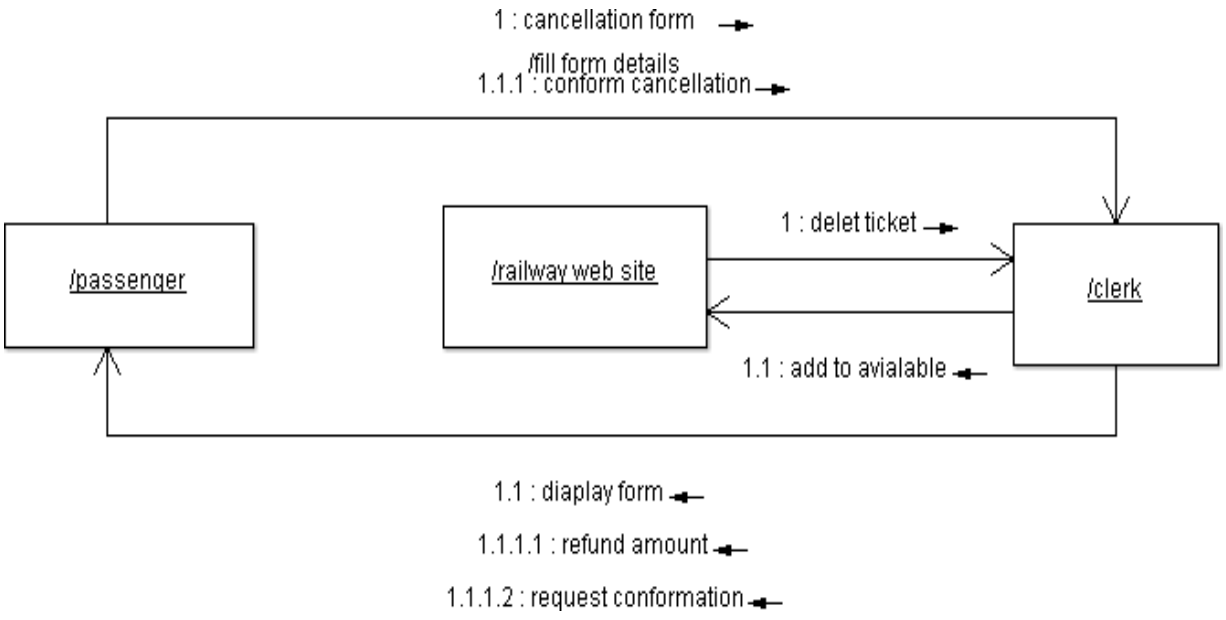

**COLLABORATION DIAGRAM**



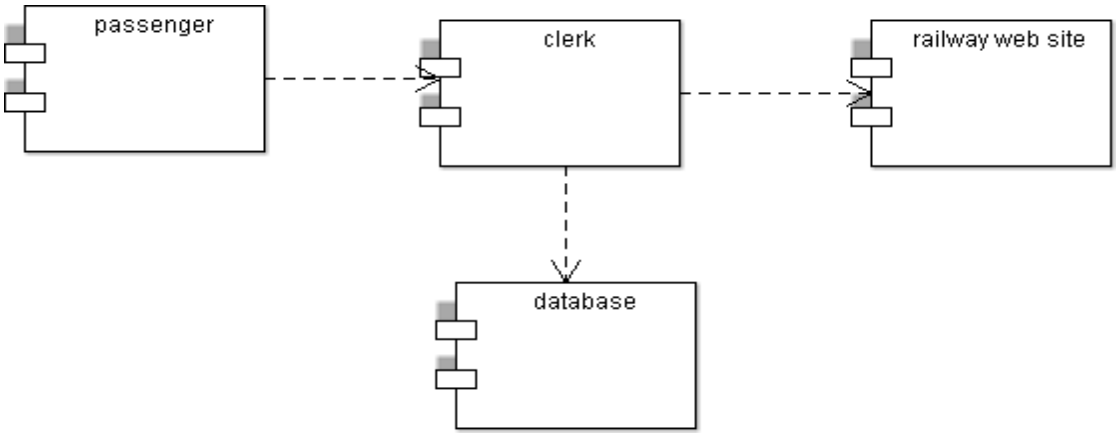
## CANCEL TICKET



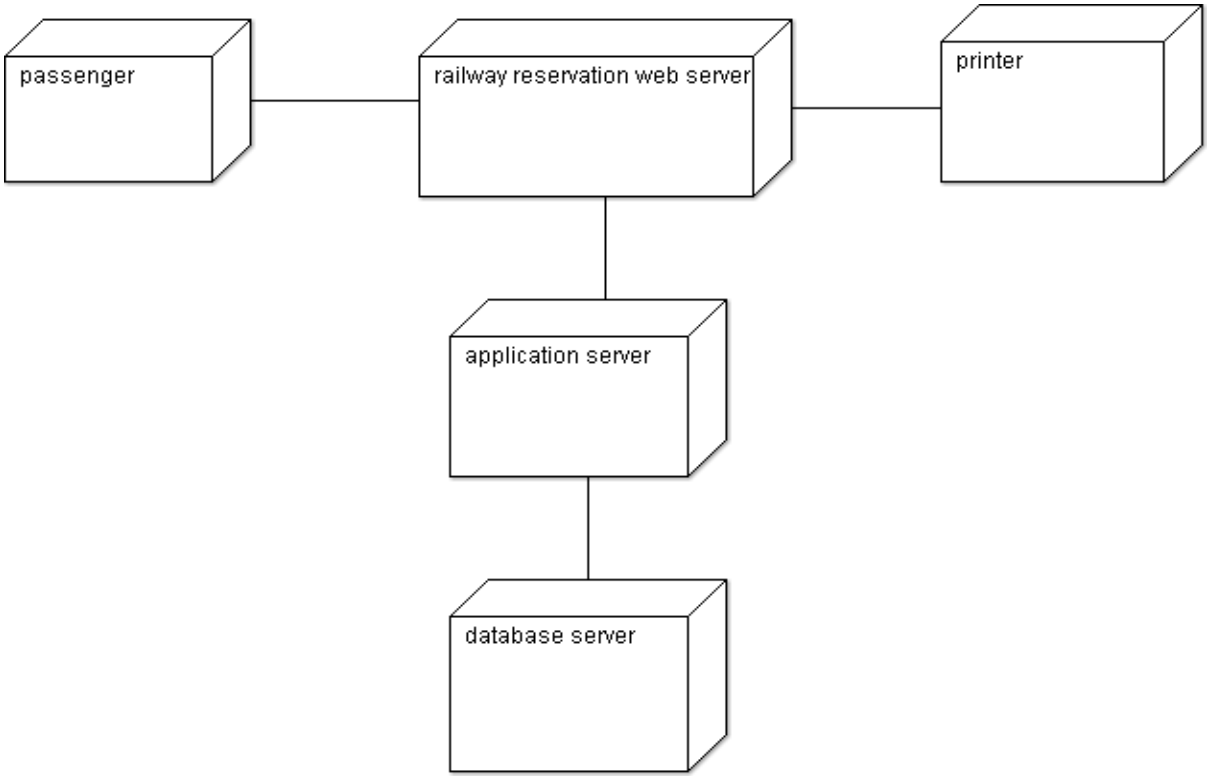

## COLLABORATION DIAGRAM



**COMPONENT DIAGRAM**




**DEPLOYMENT DIAGRAM**




**Result:**

Thus the UML diagram for e-Ticketing System is drawn and code generated successfully.

**Ex.No:7**
**Date :**

# SOFTWARE PERSONNEL MANAGEMENT SYSTEM

## 1. PROBLEM STATEMENT

The software personnel management system is used to monitor the employees performance and his / her salary details. This system is very much useful to make the payments. The increments are also given to the employees through this system.

## 2. OVERALL DESCRIPTION

The three modules are

**Login**

The employee details, edit details and exit command buttons are present. We can choose the required command button.

**Pay slip form**

Fill in the form with details such as employee id, employee name, department, experience, and basic pay in the text boxes and submit using CALCULATE command button Update it in the database using UPDATE command button.

**Database form**

Updated database would be present. We can search for the required Pay details using SEARCH command button

### 2.1 SOFTWARE REQURIEMENTS:

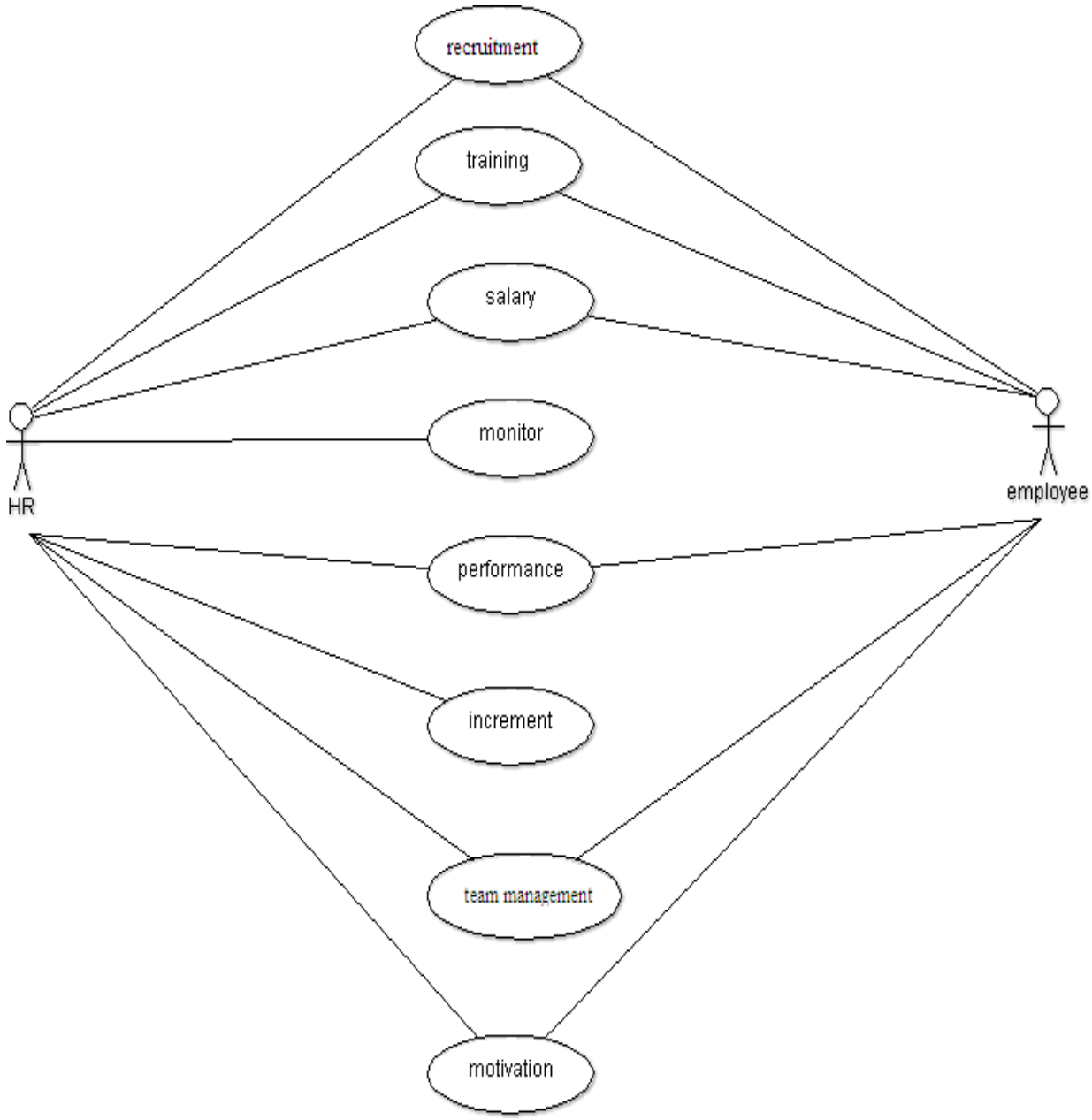
Microsoft Visual Basic 6.0

1. ArgoUML
2. Microsoft Access.

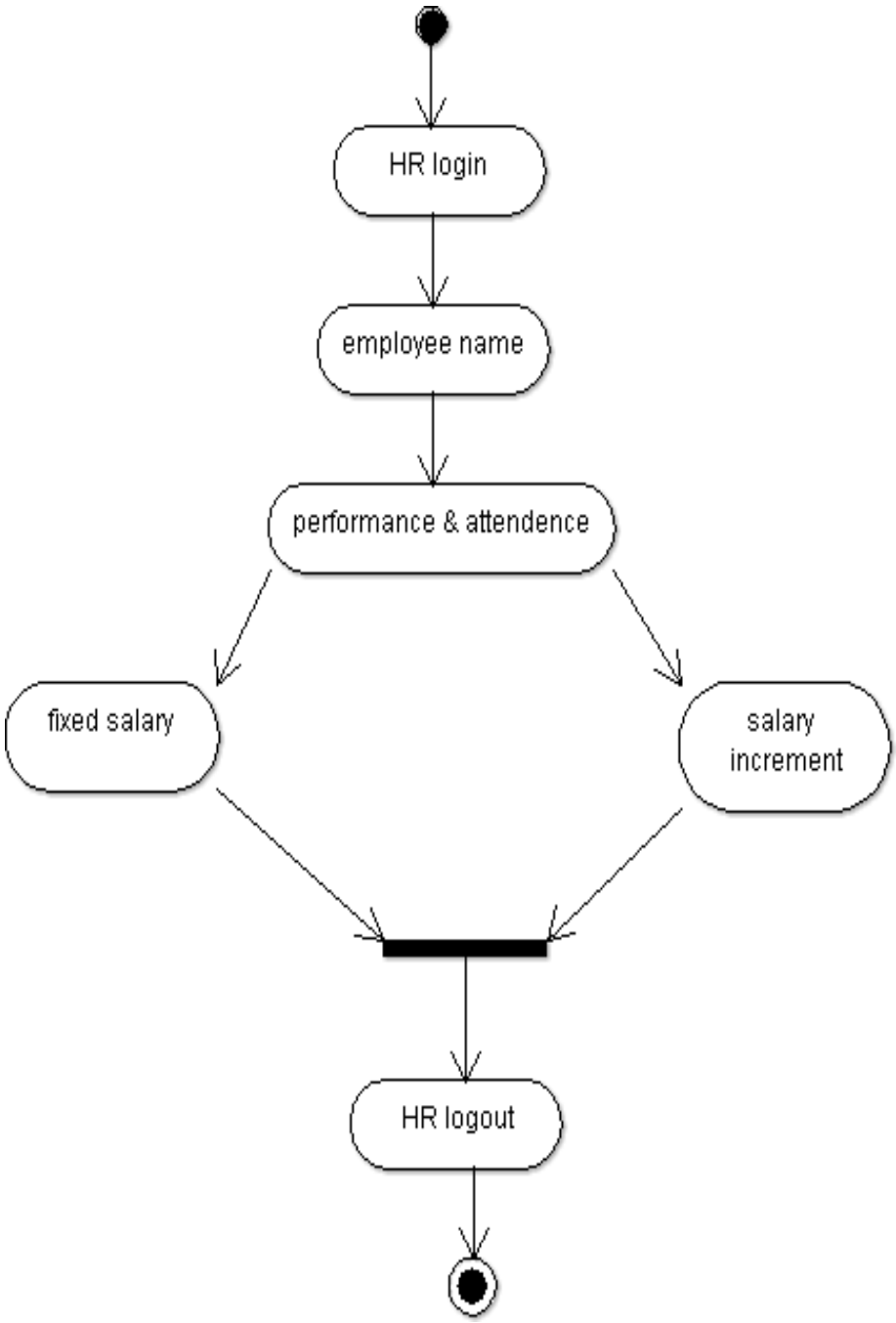
### 2.2 HARDWARE REQURIMENTS:

1. 128MB RAM
2. Pentium III Processor

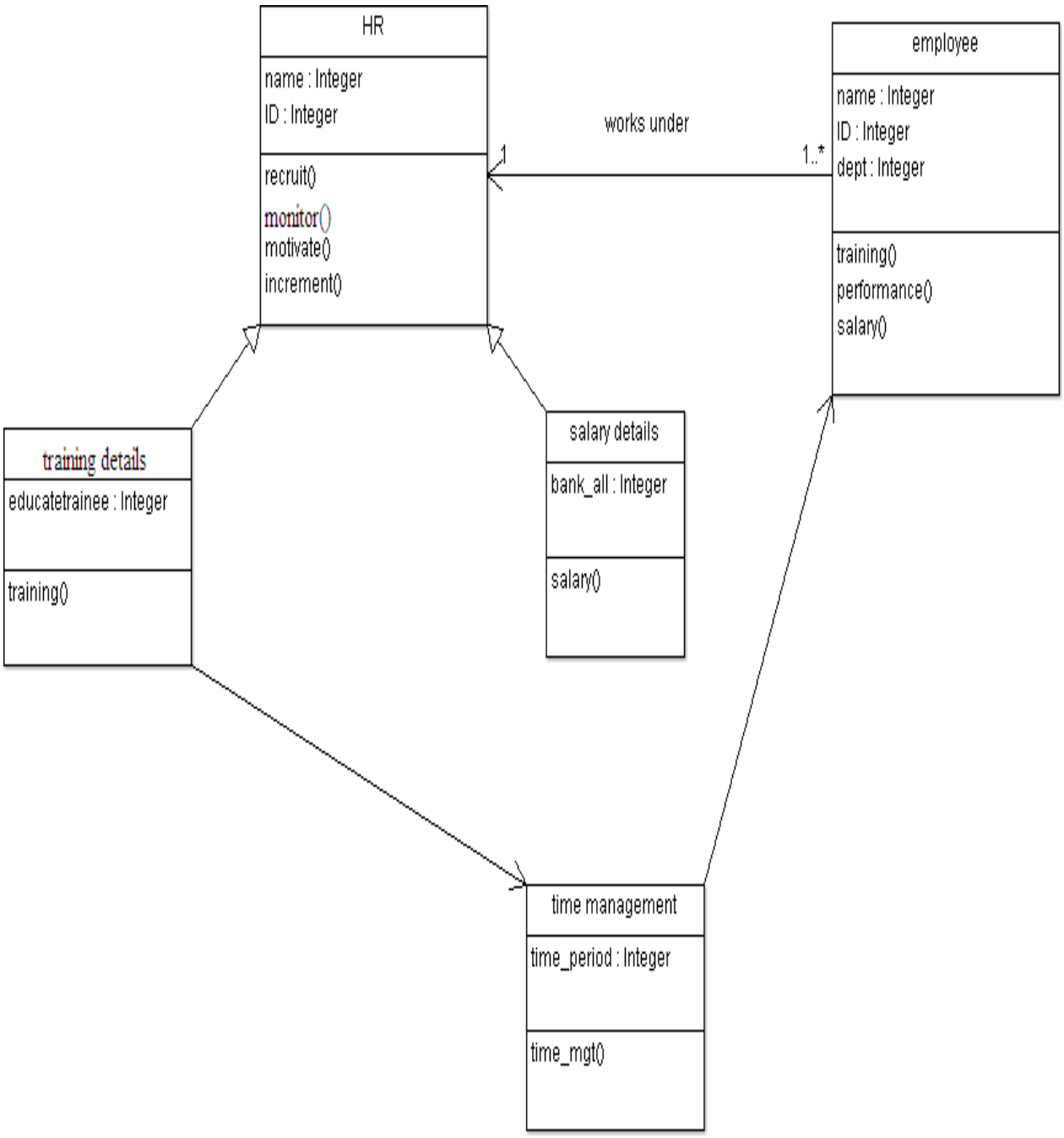
**USE CASE DIAGRAM**



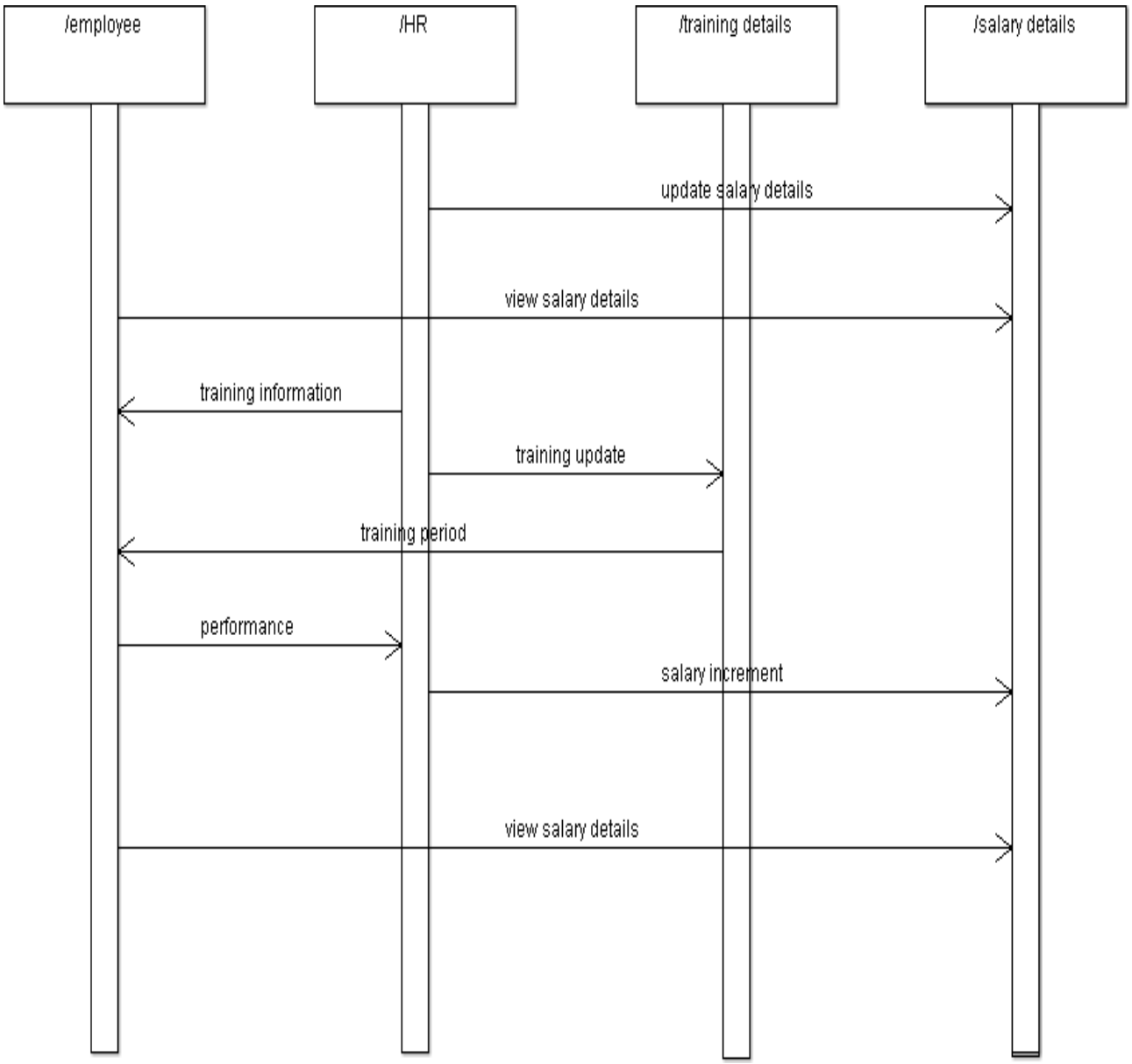
**ACTIVITY DIAGRAM**



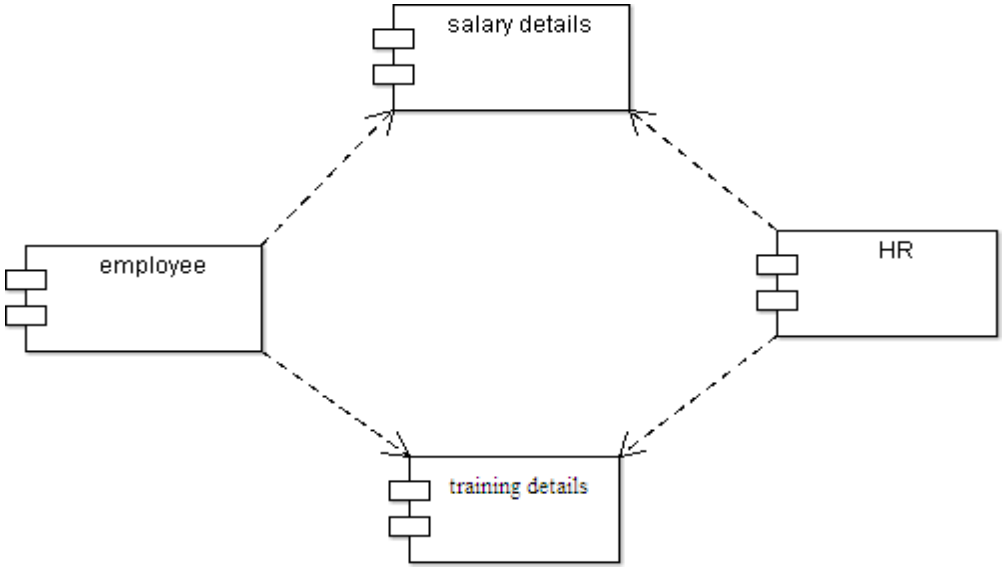
**CLASS DIAGRAM**



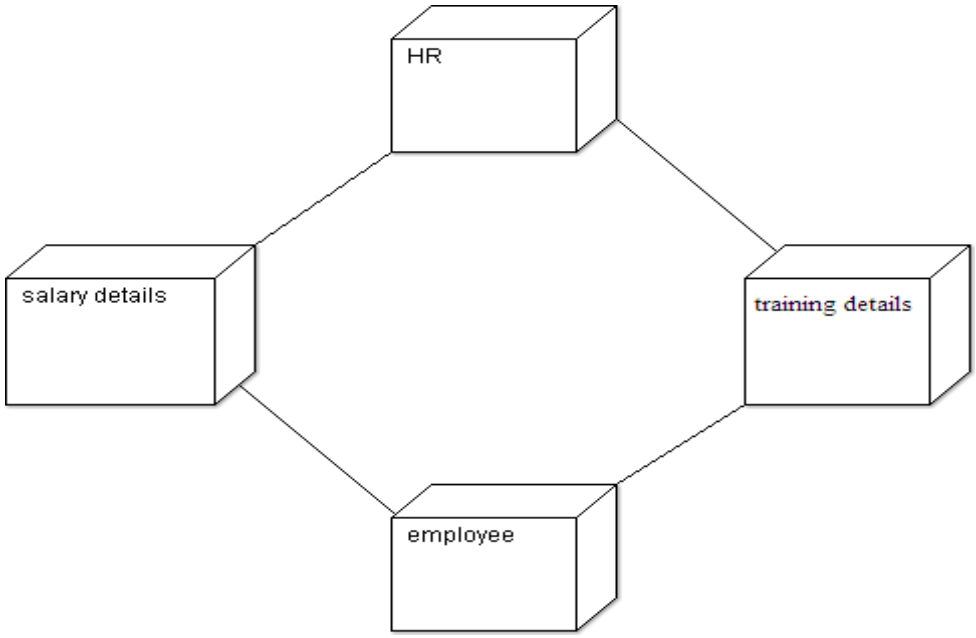
**SEQUENCE DIAGRAM**



**COMPONENT DIAGRAM**




**DEPLOYMENT DIAGRAM**




**Result:**

Thus the UML diagram for Software Personnel Management System is drawn and code generated successfully.

**Ex. No: 8**
**Date :**

# CREDIT CARD PROCESSING

## PROBLEM STATEMENT:

To develop a Credit Card Processing system. The system developed should contain the following features:

- The customer login into the system using credit card number and pin number. The system for validation.
- The system queries the customer for type of accounts either SB account or credit. After getting the type of account the system shows the amount left.
- The system then queries the customer for required amount. The user enters the amount and gets the money.

## OVERALL DESCRIPTION

### Login Module

This case start the actor wishes to log into Course Registration System.

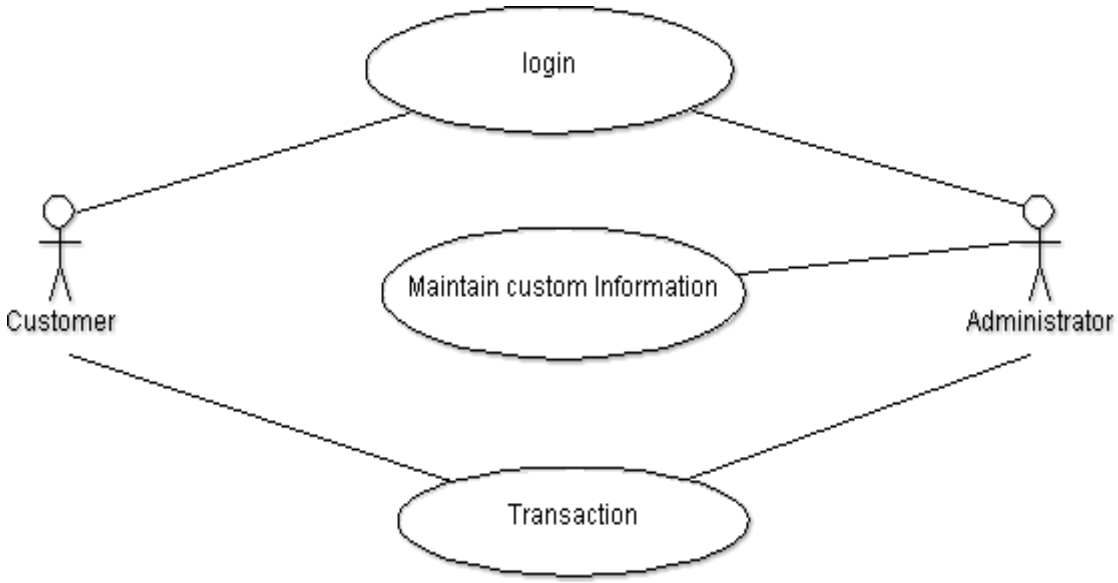
### Maintain Customer Information Module

This use case starts when administrator wishes to add, change and/or delete customer information I system.

### Transaction Module

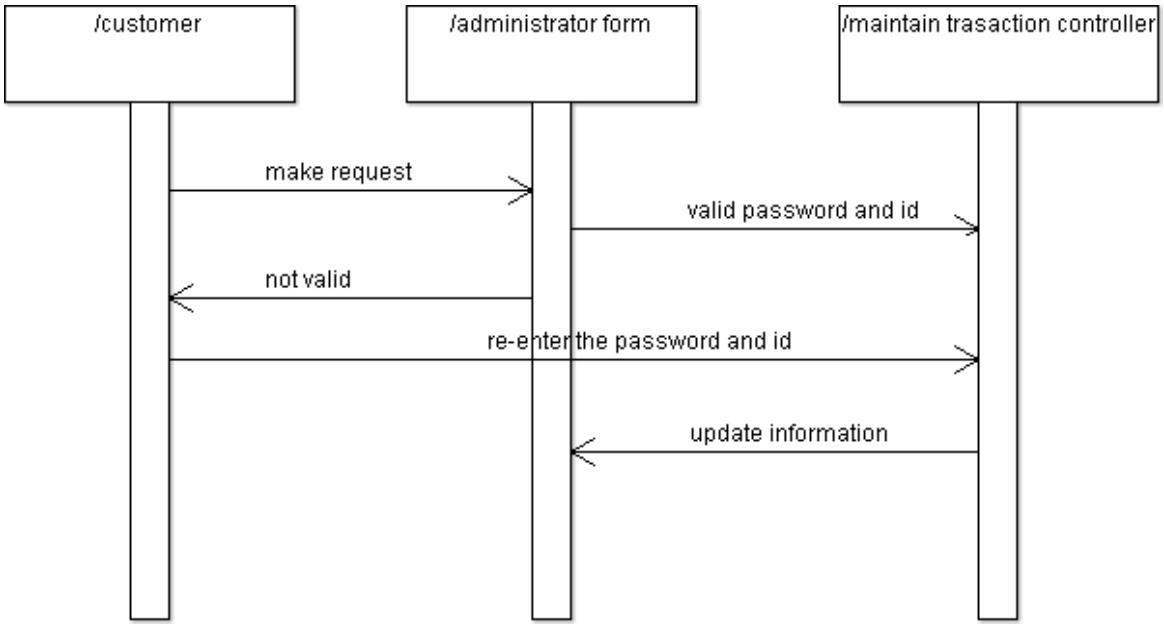
This activity starts when customers want to withdraw amount from account.

**USE CASE DIAGRAM:**

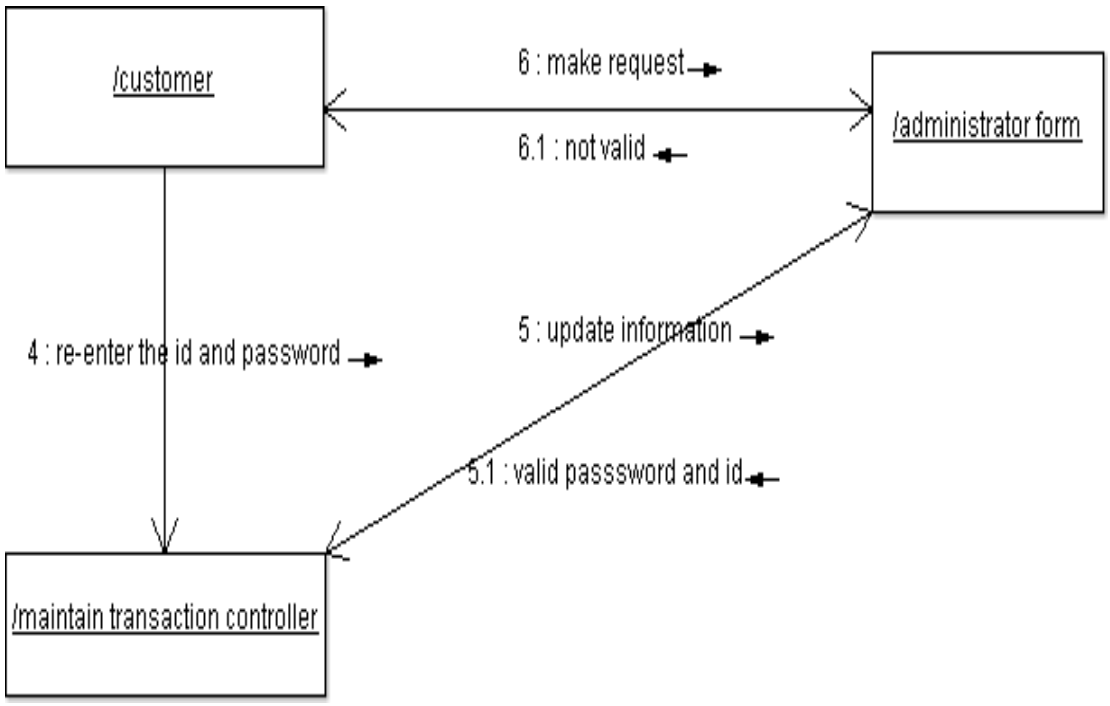



**Login Module**

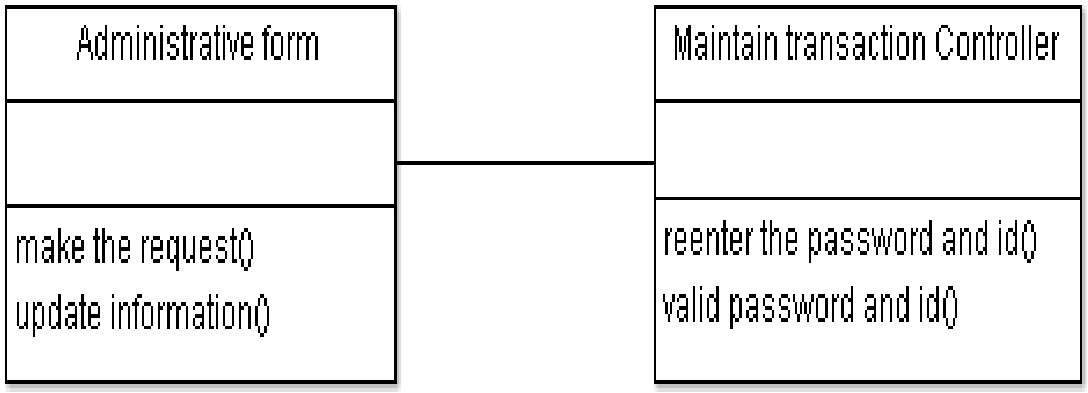
**SEQUENCE DIAGRAM:**



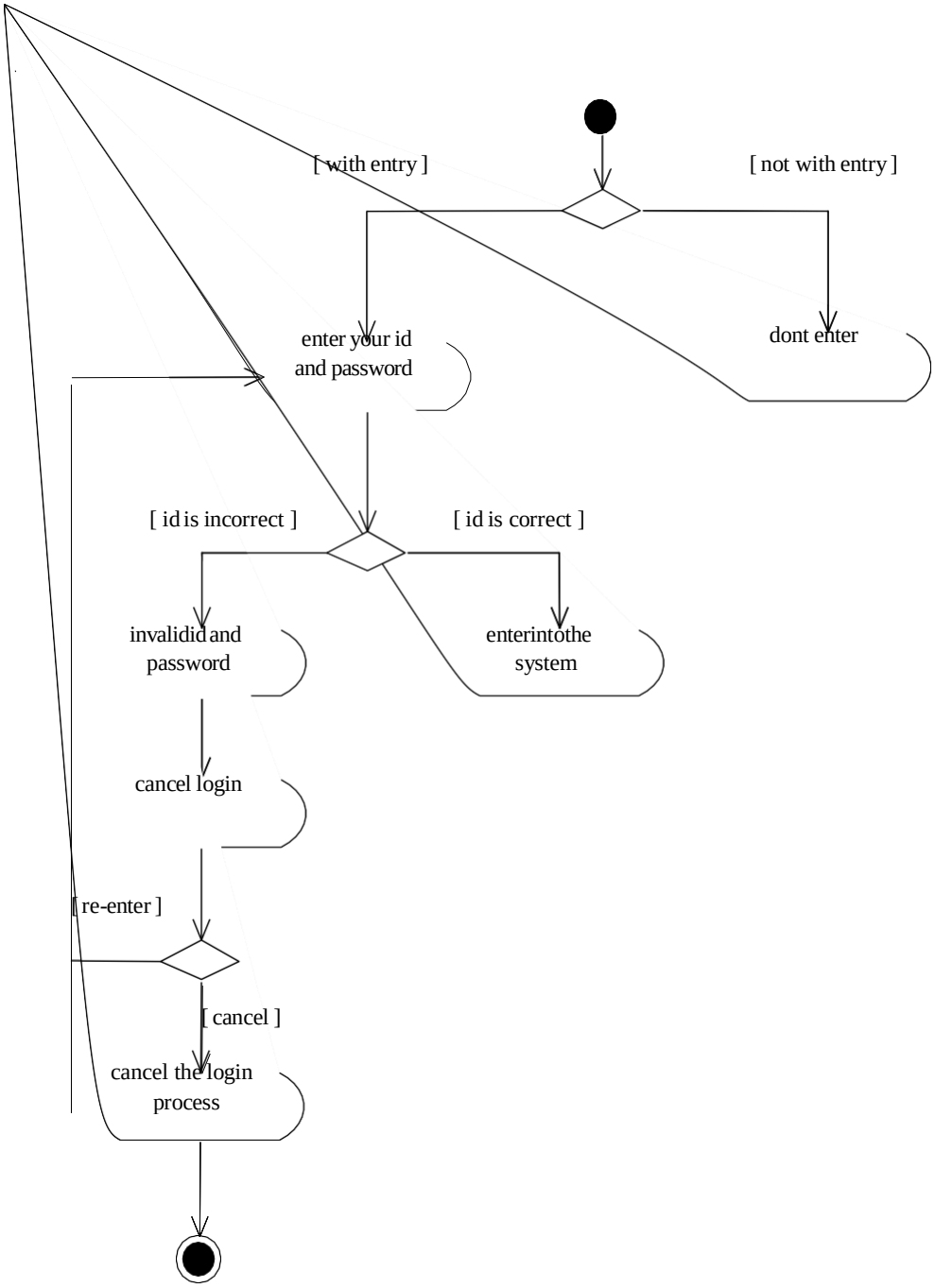
**COLLABORATION DIAGRAM:**



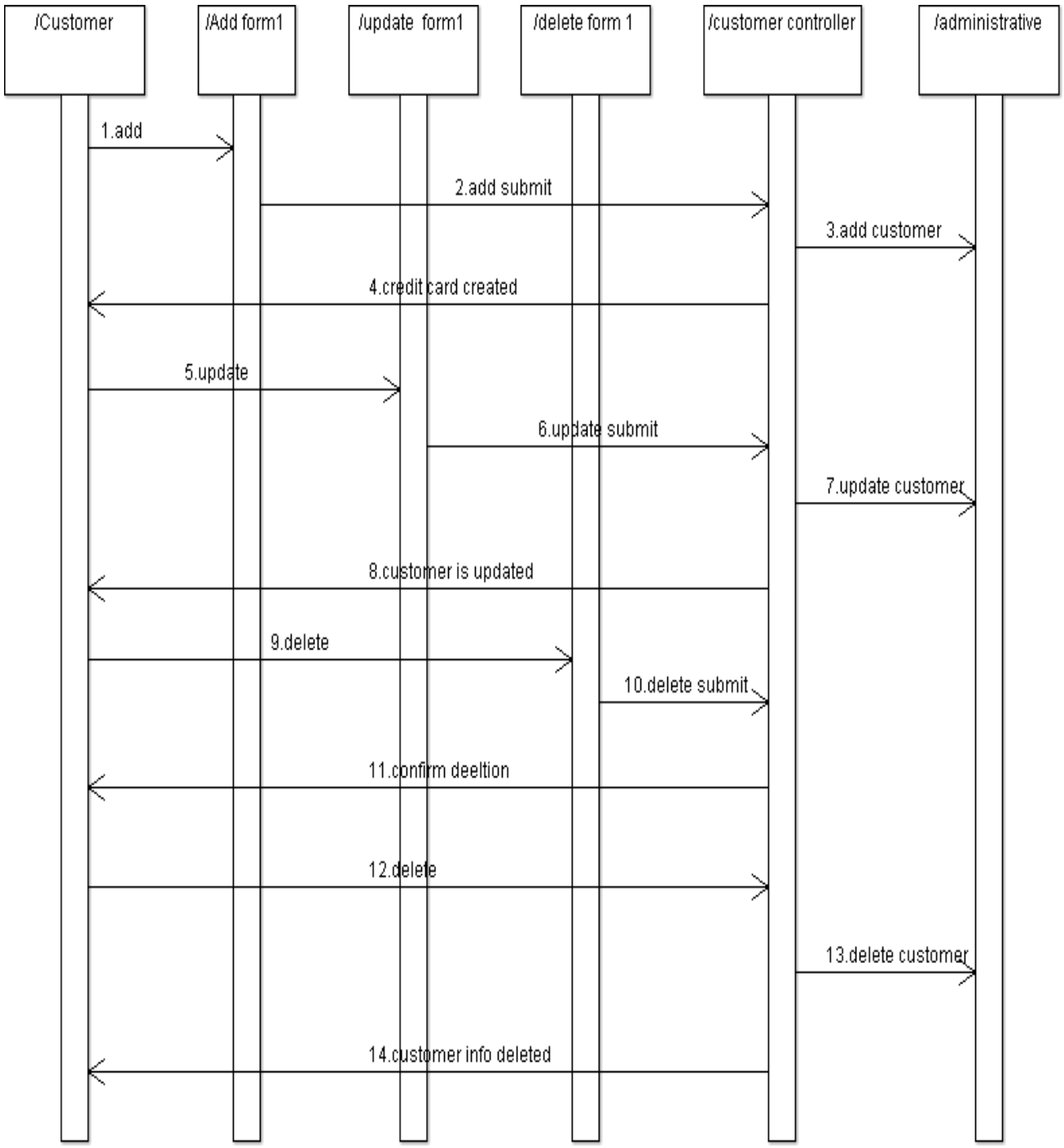

**CLASS DIAGRAM:**



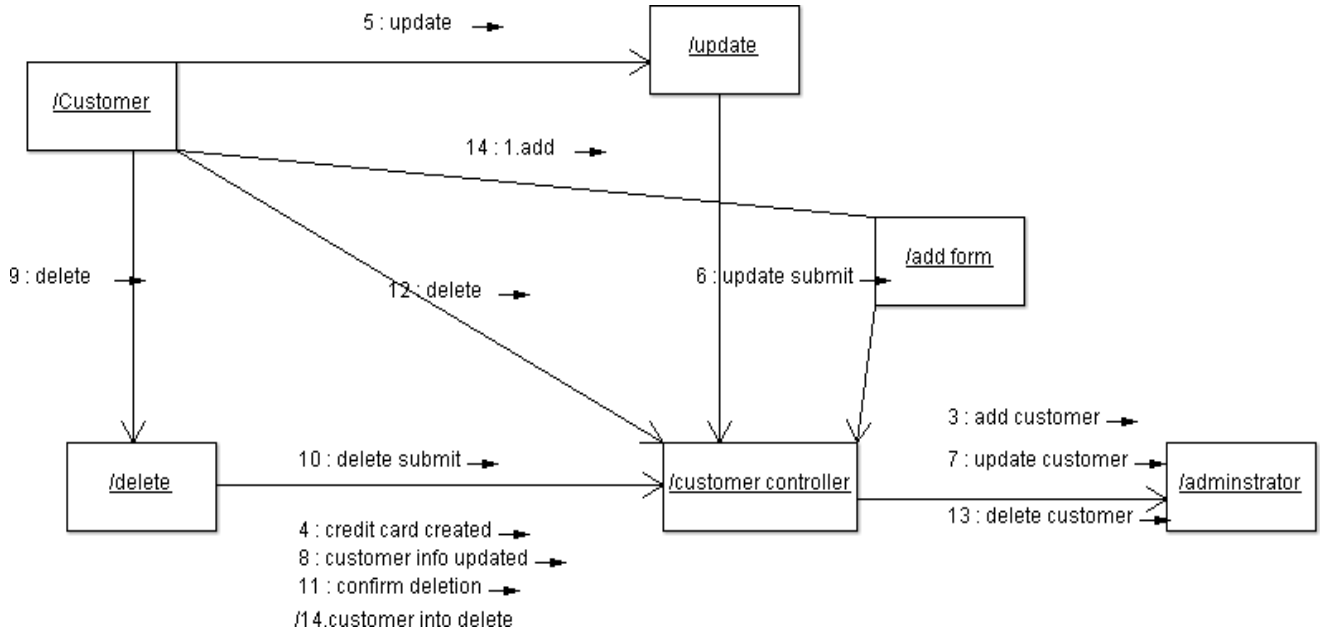
**ACTIVITY DIAGRAM: Maintain Customer Information Module**



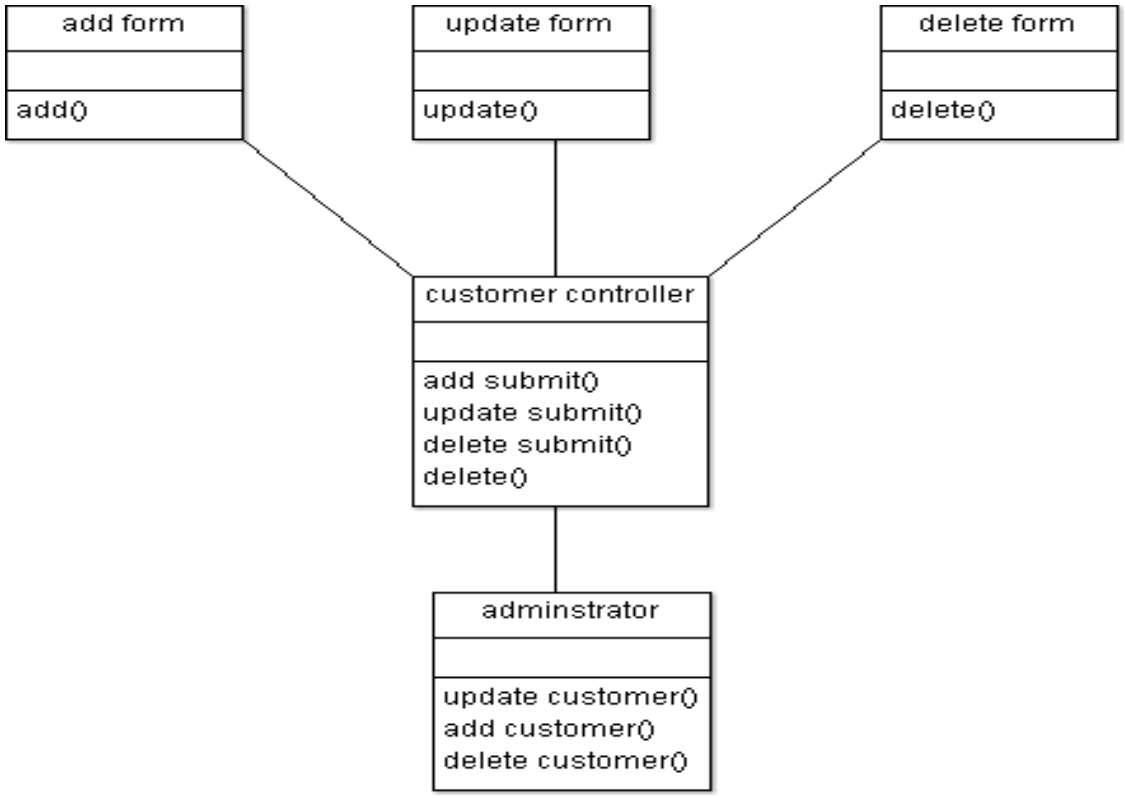
**SEQUENCE DIAGRAM:**



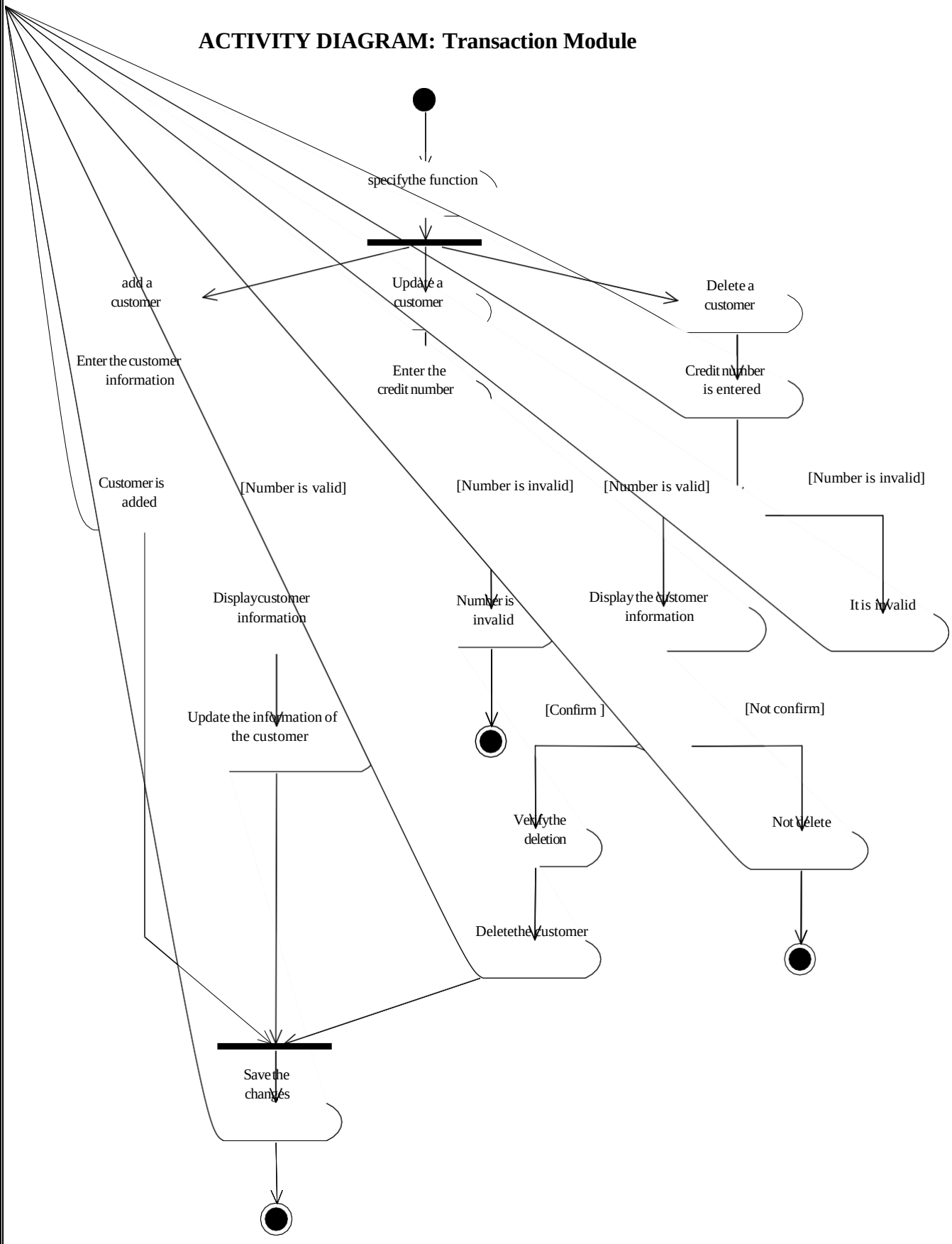
**COLLABORATION DIAGRAM:**



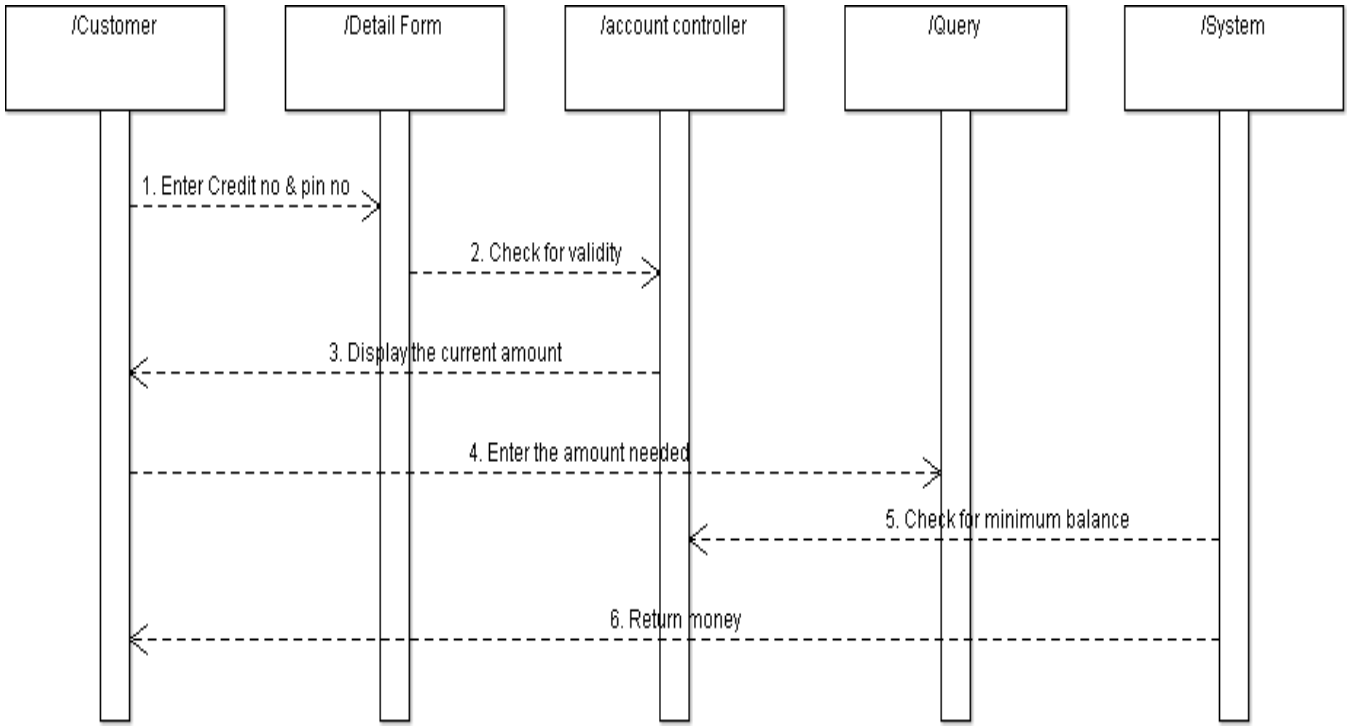

**CLASS DIAGRAM:**



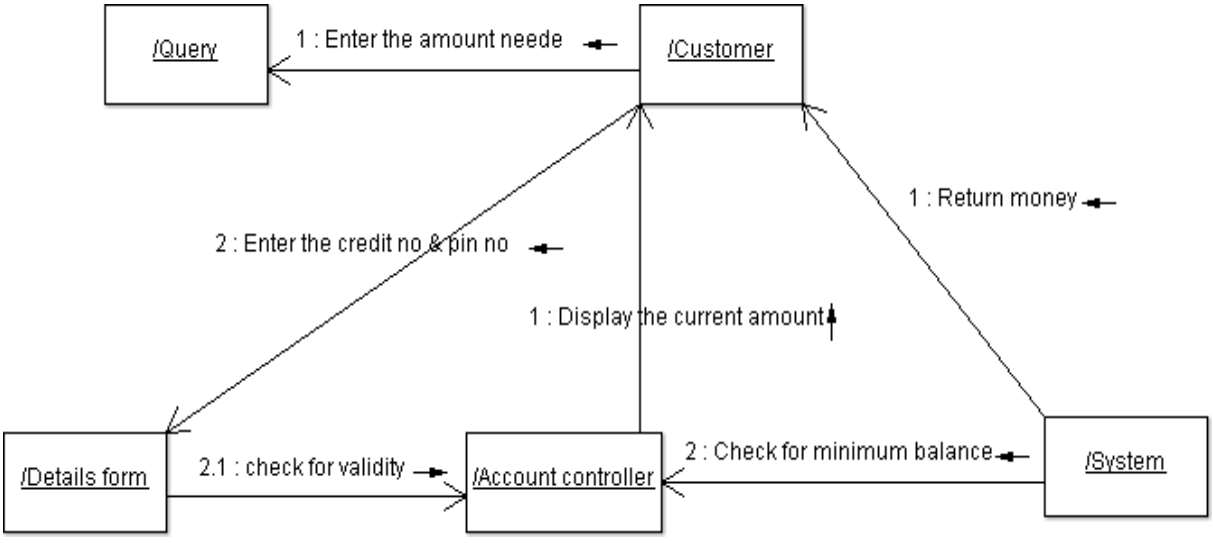
## ACTIVITY DIAGRAM: Transaction Module



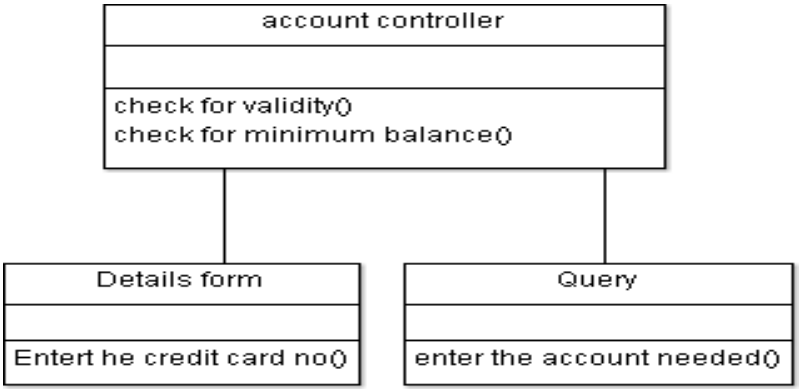
**SEQUENCE DIAGRAM:**



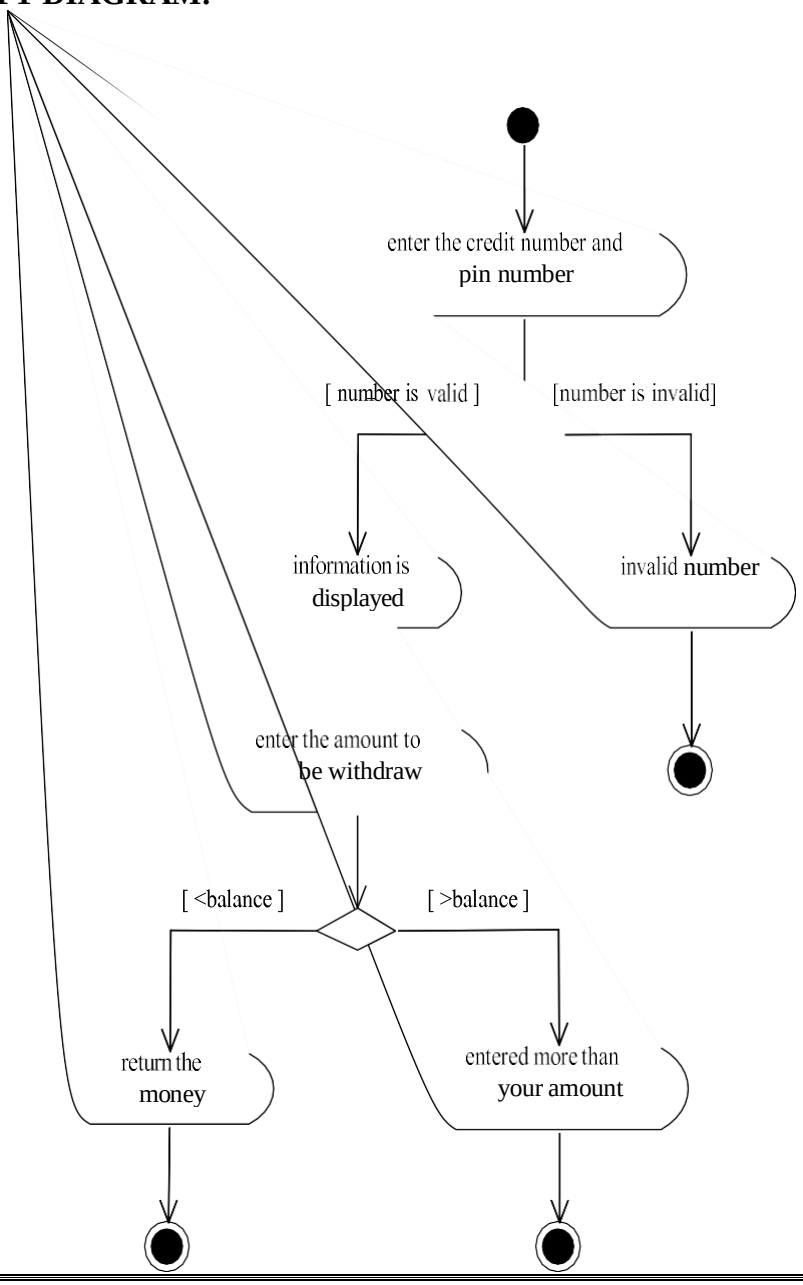

**COLLABORATION DIAGRAM:**



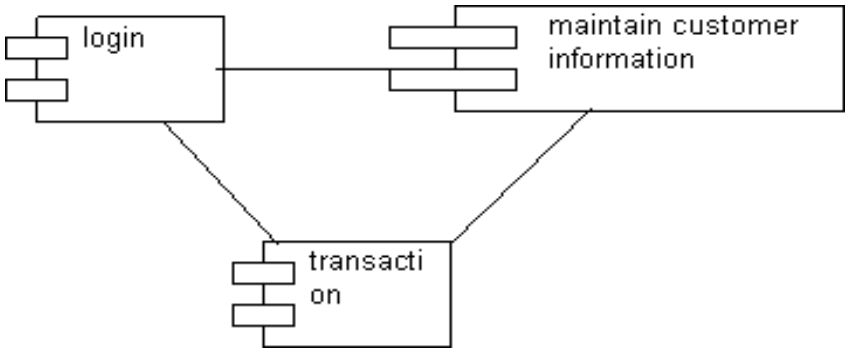
**CLASS DIAGRAM:**



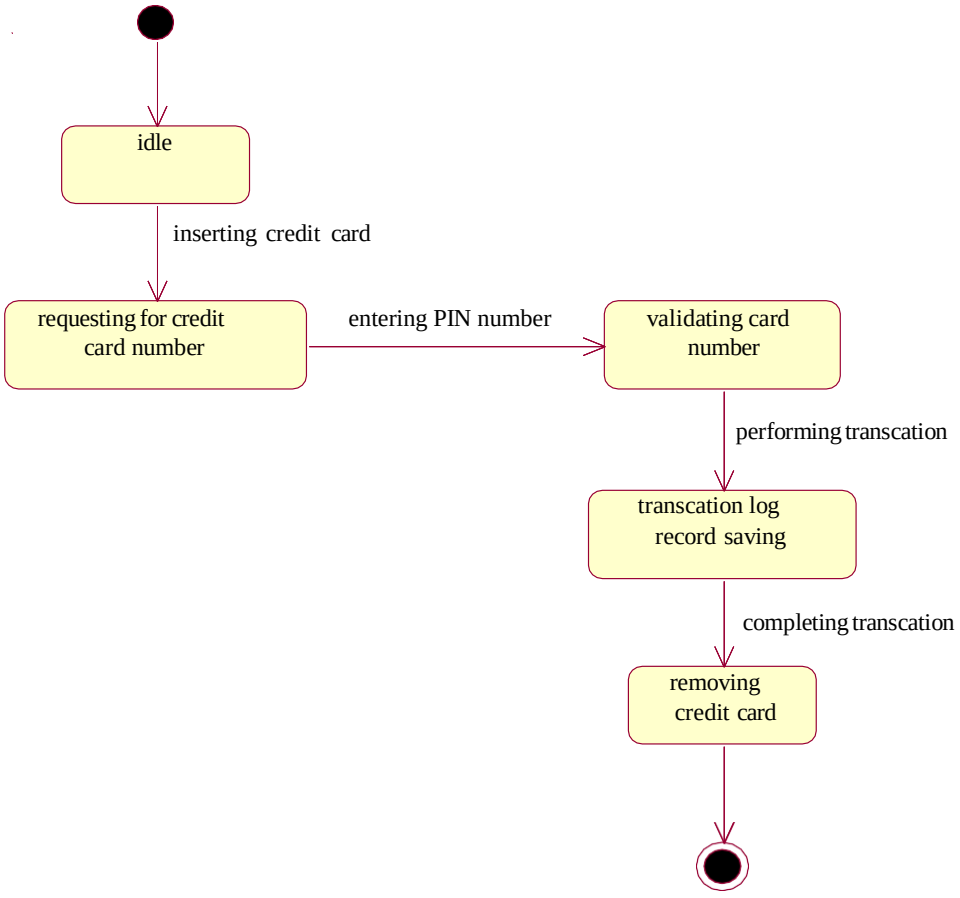

**ACTIVITY DIAGRAM:**



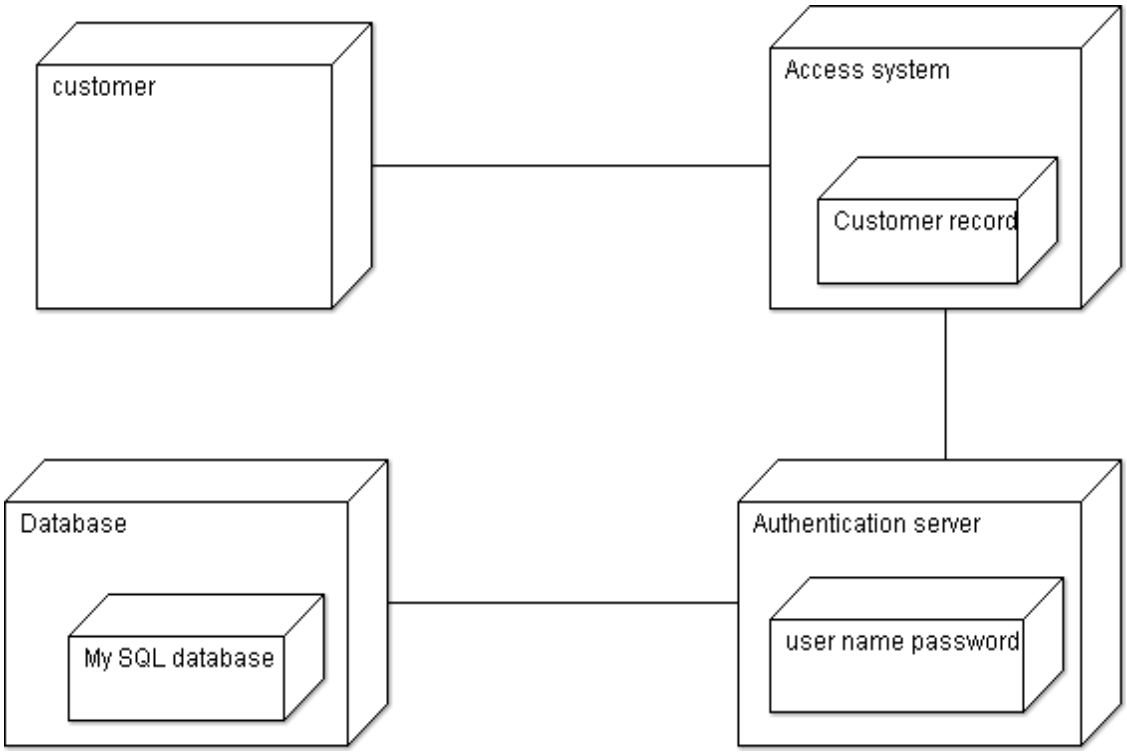
**COMPONENT DIAGRAM:**




**STATECHART DIAGRAM:**



**DEPLOYMENT DIAGRAM:**




**Result:**

Thus the UML diagram for Credit Card Processing System is drawn and code generated successfully.

**Ex, No: 9**
**Date :**

# e - BOOK MANAGEMENT SYSTEM

## PROBLEM STATEMENT

This software is totally self contained and works relatively an efficient on the package relates to the software. It provides simple database rather than complex one for high requirement and it provides a good and easy graphical user interface to both new and naïve as well as experienced user of the computer.

## OVERALL DESCRIPTION

### REGISTER

The register module contains the application form or registration form which contains following details. Name, Address, Contact number, E-mail id, Password etc.

### LOGIN

The Login module contains the form which contain membership name and member password. It includes Username and Password.

### SEARCH BOOK

The search book module contain list of books, from this list we search for the book which we need. This also contains another field called as categories where can select the category of the book.

### DOWNLOAD

The download module contains the downloading option for where purpose where we can download, whatever e-book we search and found.

### PAYMENT

After the book is searched and found. Then the user is going to download the book. Before the downloading the books needs payment for that book. So user has to select the type of transaction whether credit card (or) debit card (or) cash (or) cheque (or) DD.

### SALES RECORD

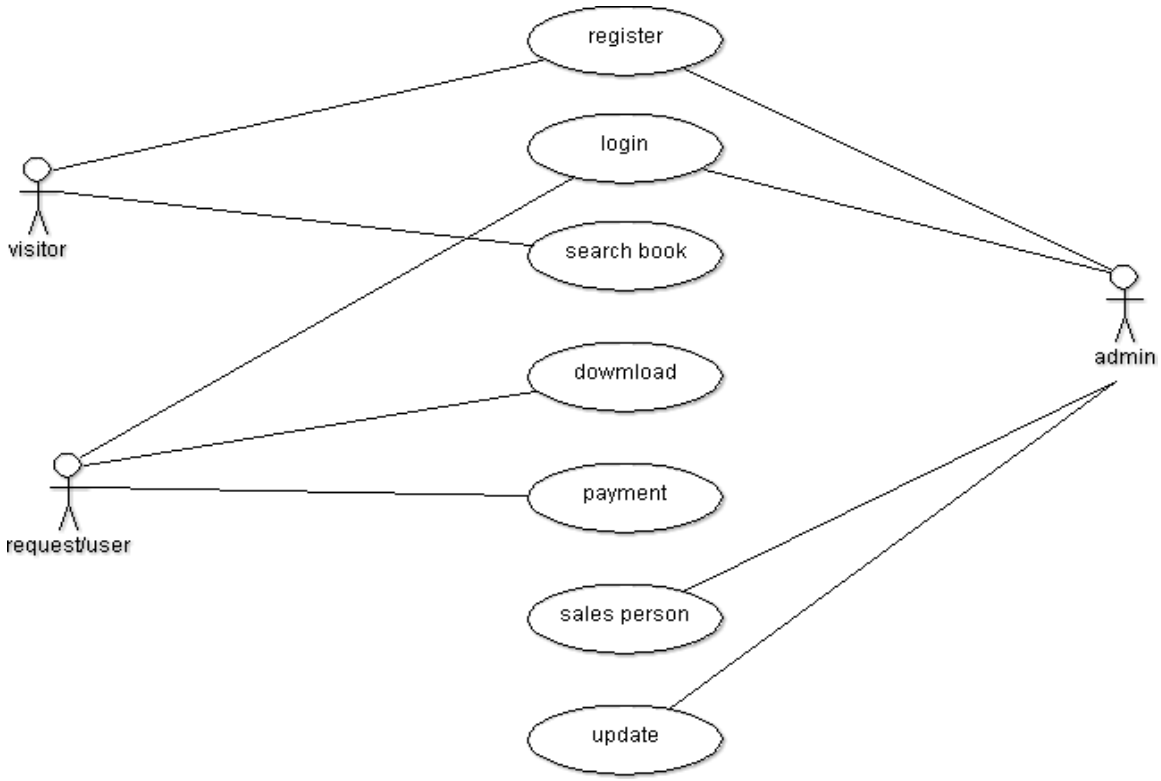
The website admin has to maintain the sales record where the record should be in updated, where how many books are sold. How much amount credited and names of user who downloaded that book and how much they paid for downloading the book.

### UPDATE

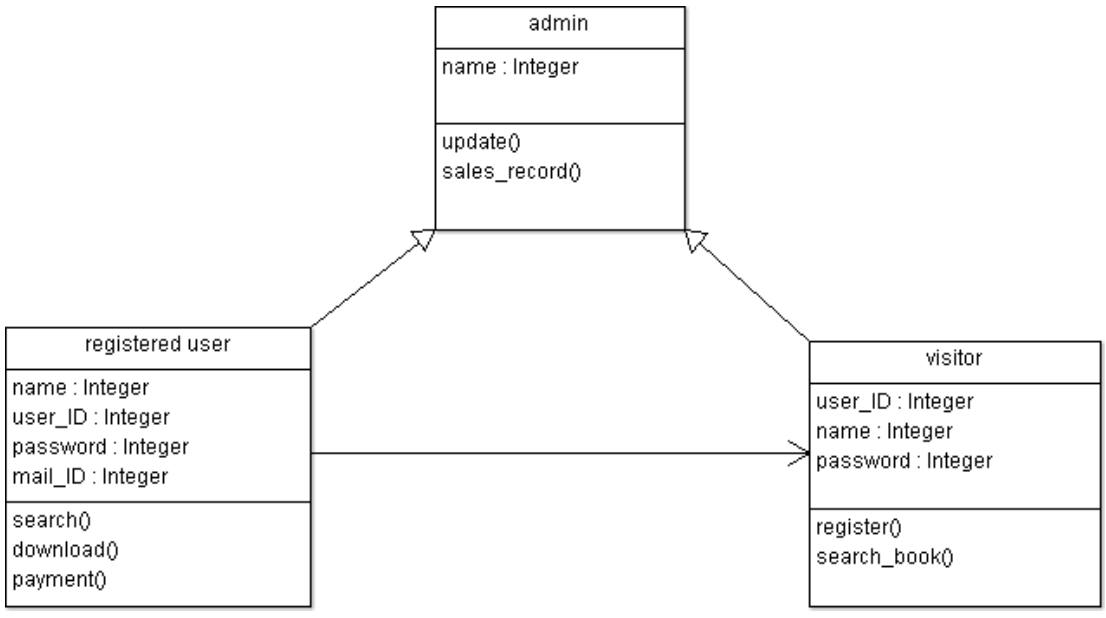
The update module should maintained bythe website administrator. The admin should update each and every process like.

- Number of user registered
- Registered user viewing.
- Downloading by user.
- Payment offered by user.

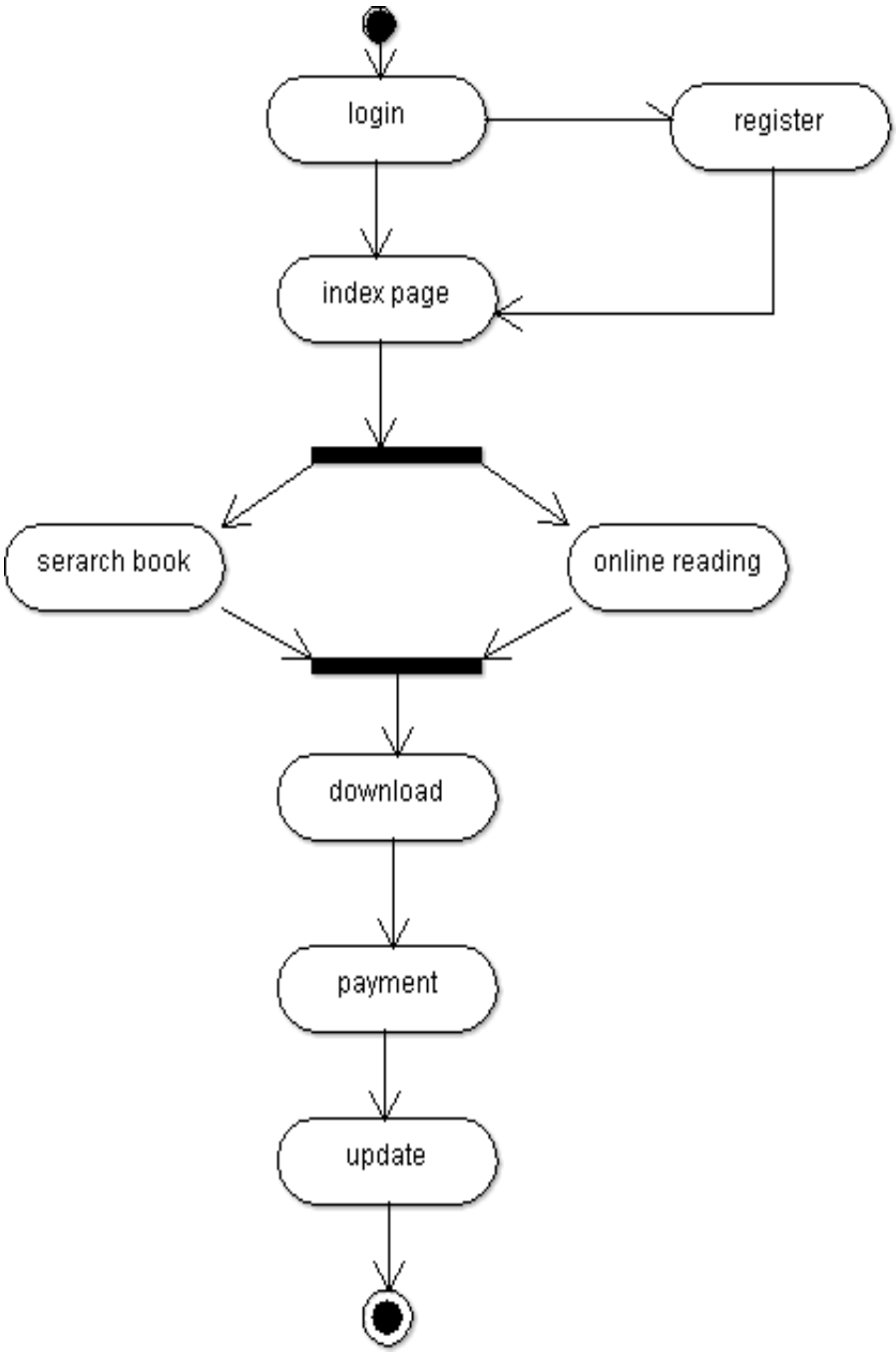
## USE CASE DIAGRAM




## CLASS DIAGRAM

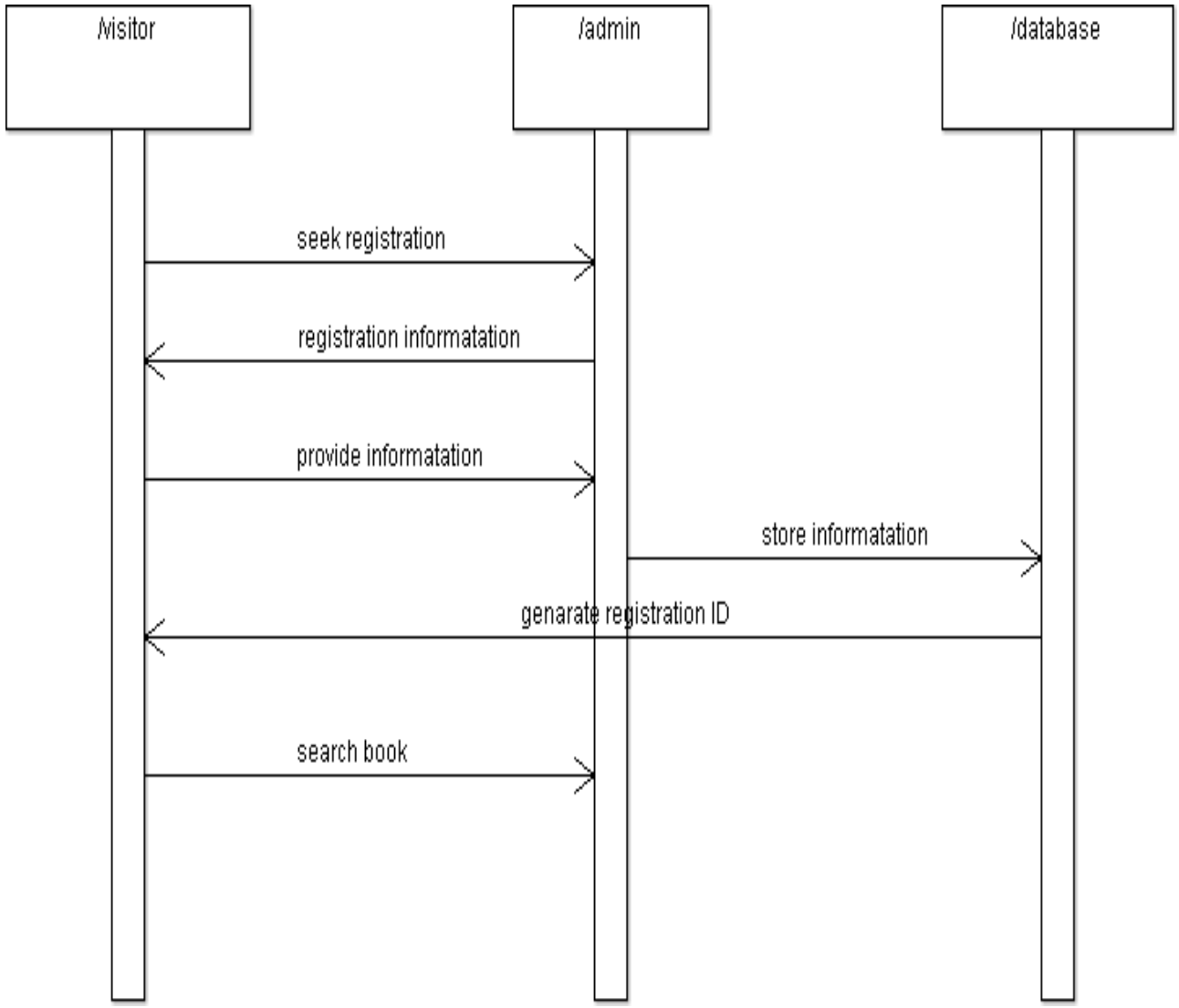


**ACTIVITY DIAGRAM**

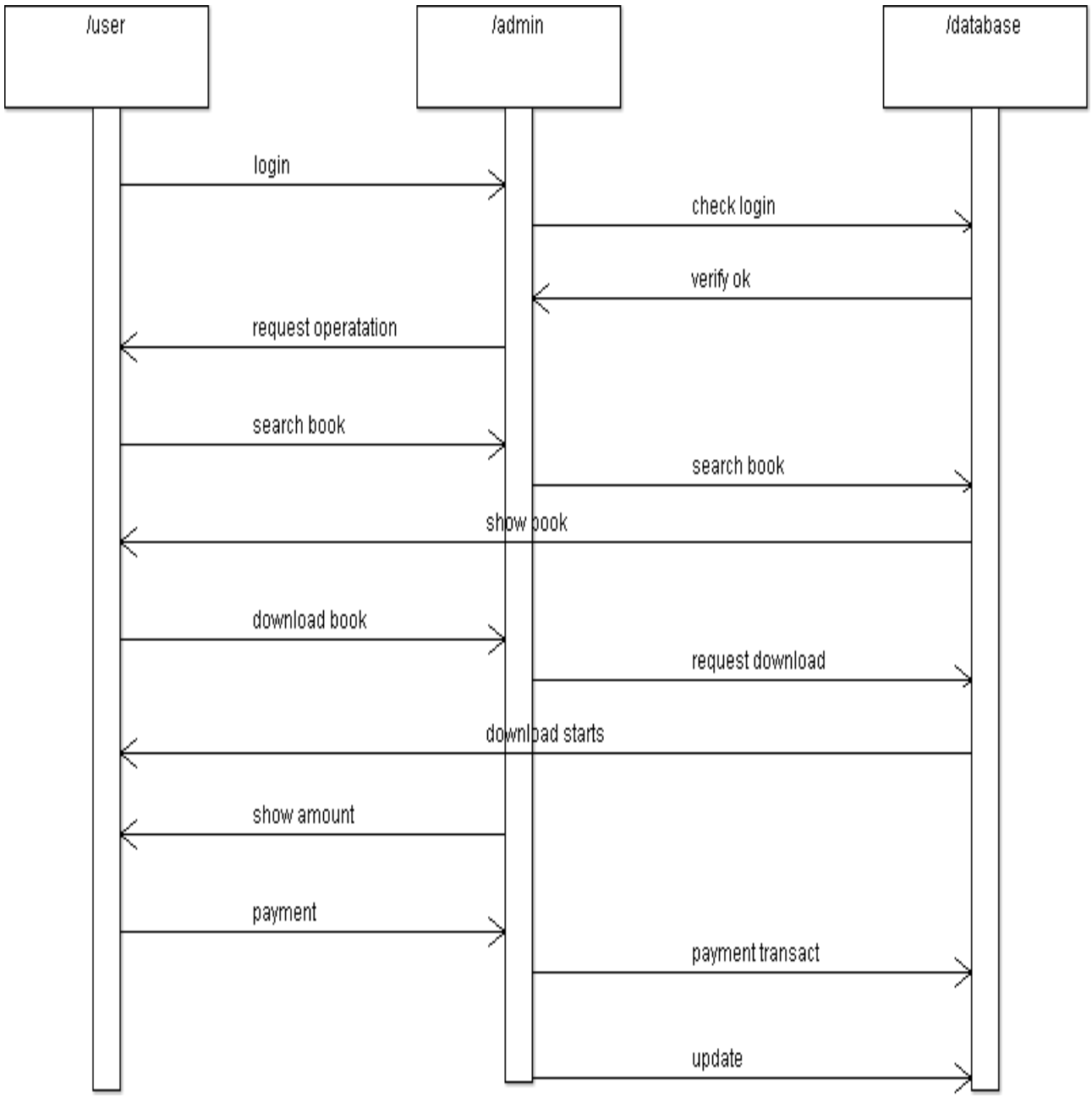


**SEQUENCE DIAGRAM**

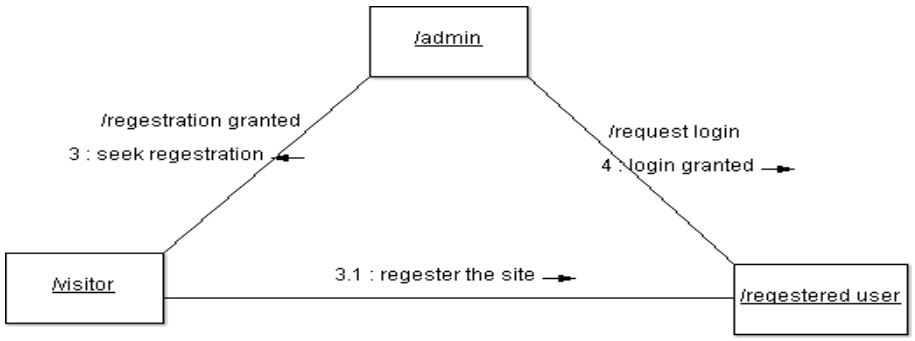
**VISITOR**



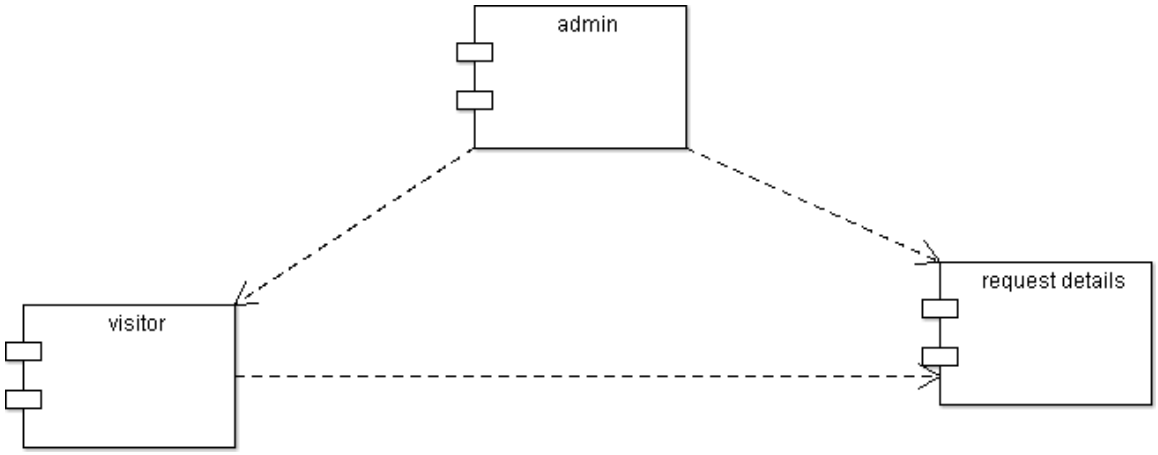
**REGISTERED USER**



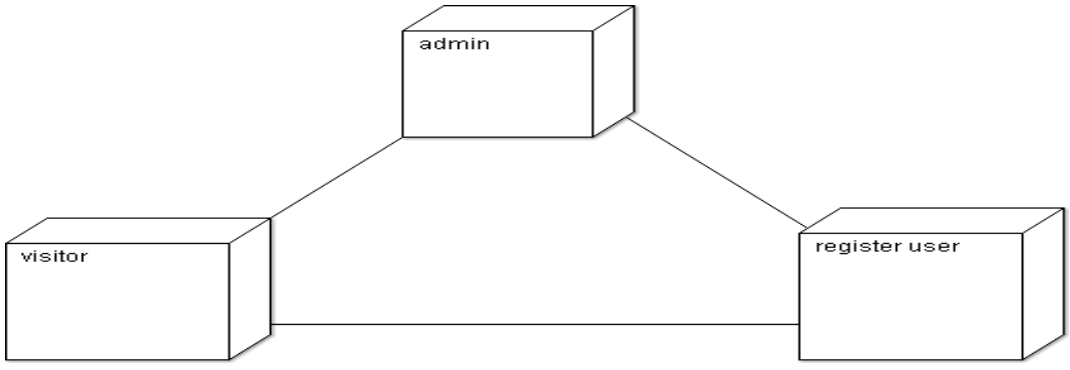
## COLLABORATION DIAGRAM




## COMPONENT DIAGRAM




## DEPLOYMENT DIAGRAM




**Result:**

Thus the UML diagram for e-book management System is drawn and code generated successfully.

**Ex.No:10**
**Date :**

# RECRUITMENT SYSTEM

## 1. PROBLEM STATEMENT

To create a software system this can test the skills of the candidate by generating random question and answer and implementing using Visual basic 6.0 and MS Access.

## 2. OVERALL DESCRIPTION

The three modules are.

1. Login

   User can login using the username and password and they can start attend the test for the specified vacancy

2. Recruitment test

   This system will generate random question to test the skills of the Candidate and check whether the candidate is suitable for the position offered by the company.

3. Result

   This will show whether the candidate is selected or not selected for the position by displaying the message.

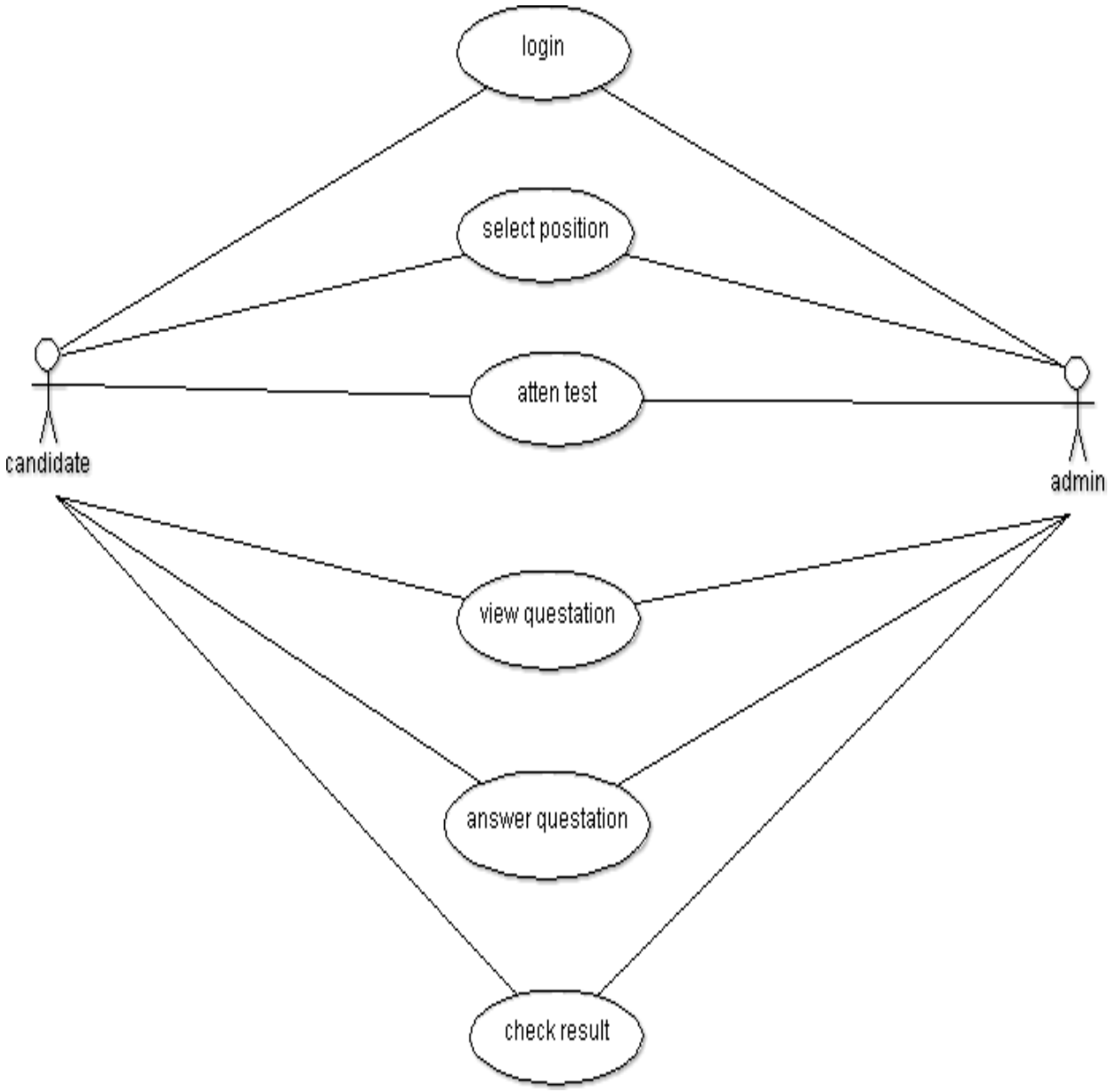
### 2.1 SOFTWARE REQURIEMENTS

1. Microsoft Visual Basic 6.0
2. Rational Rose
3. Microsoft Access.

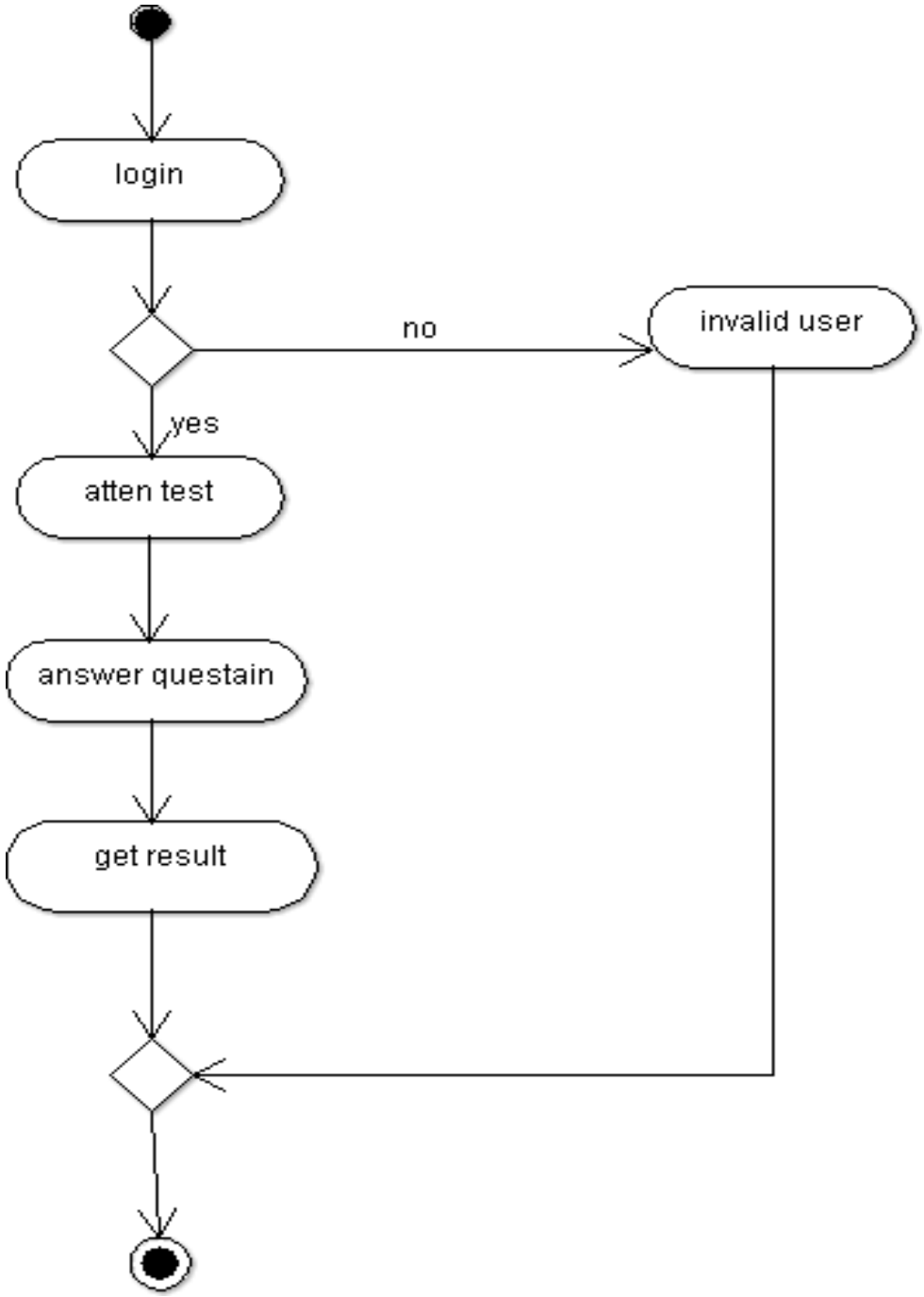
### 2.2 HARDWARE REQURIMENTS

1. 128MB RAM
2. Pentium III Processor

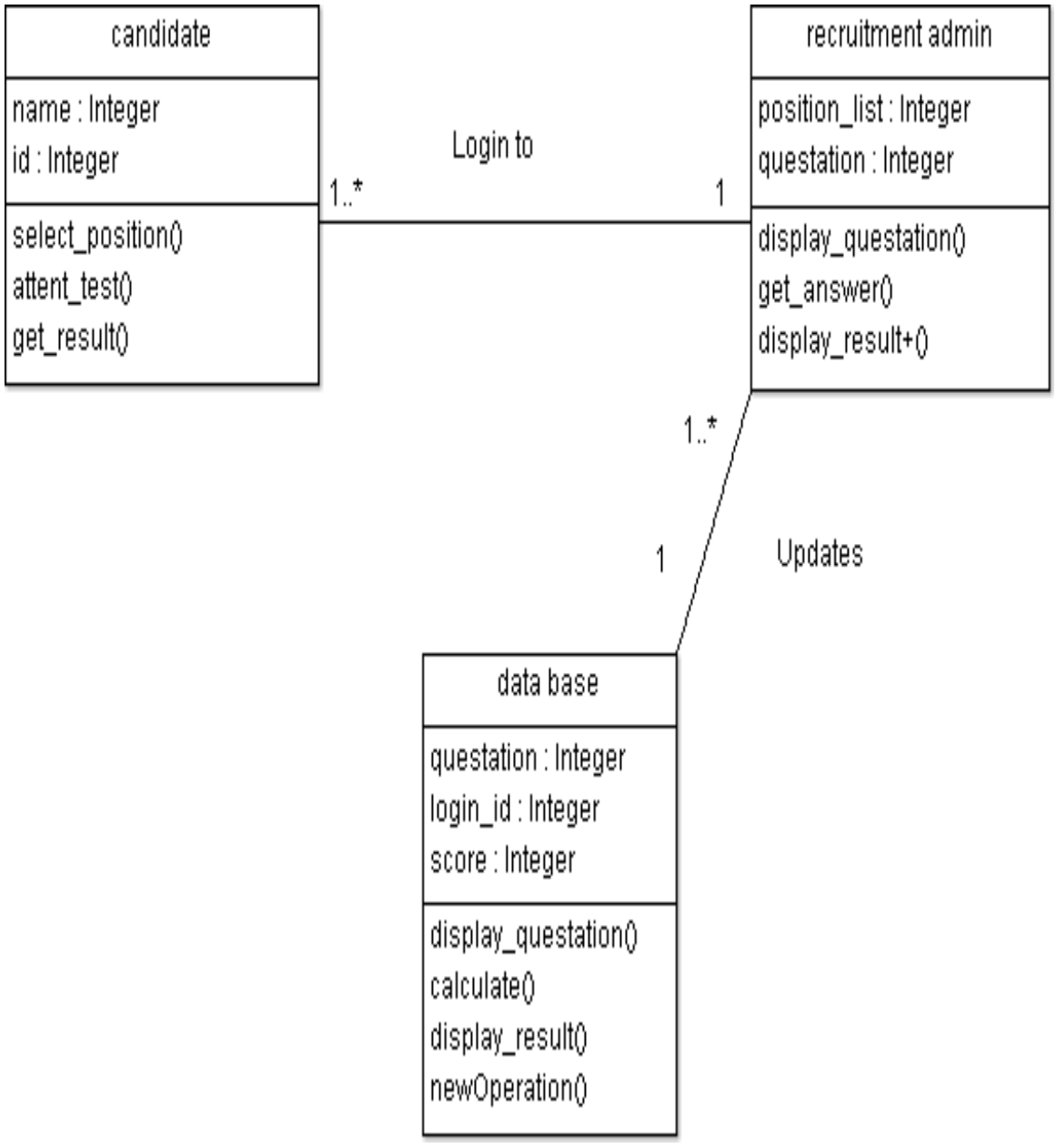
**USE CASE DIAGRAM**



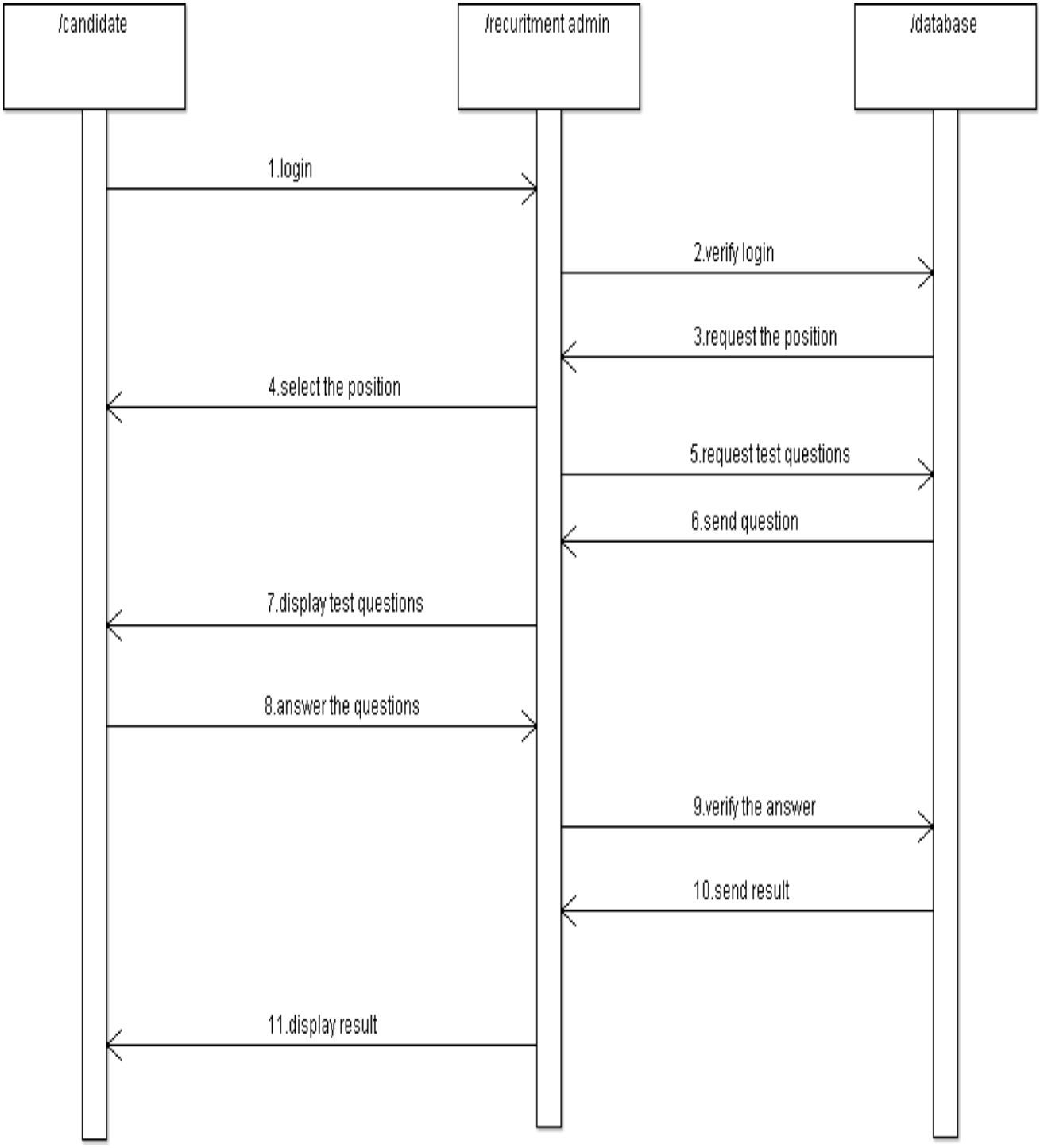
**ACTIVITY DIAGRAM**



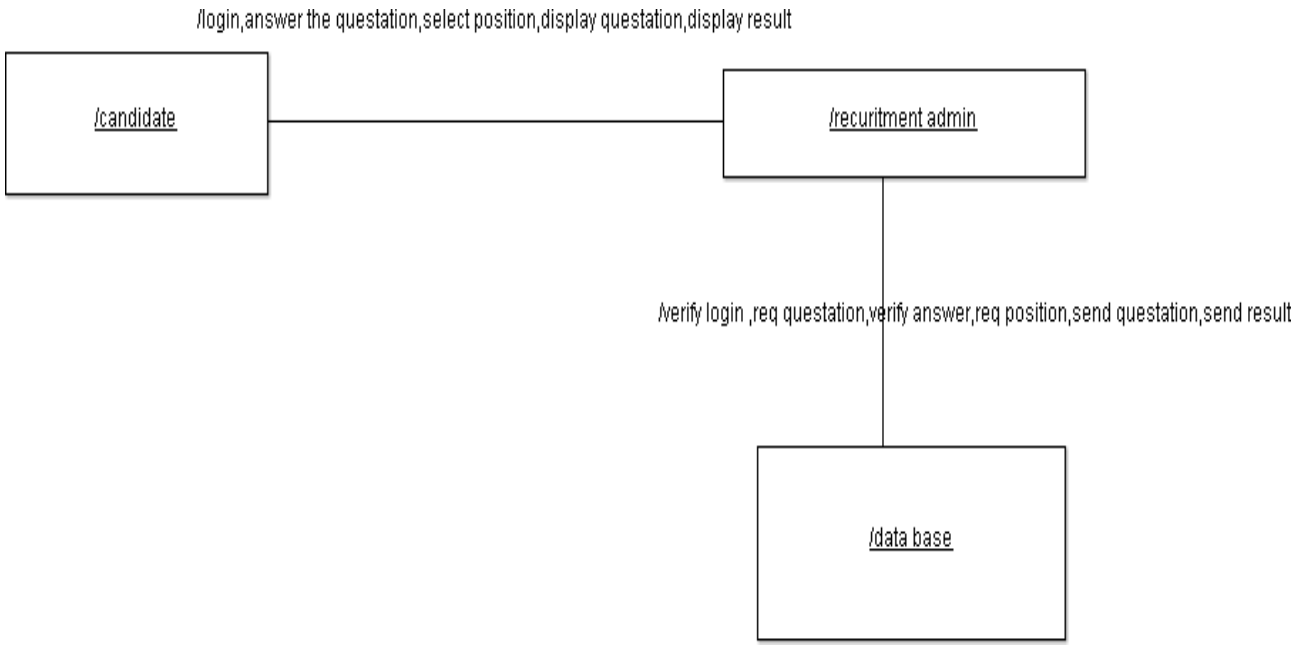
**CLASS DIAGRAM**



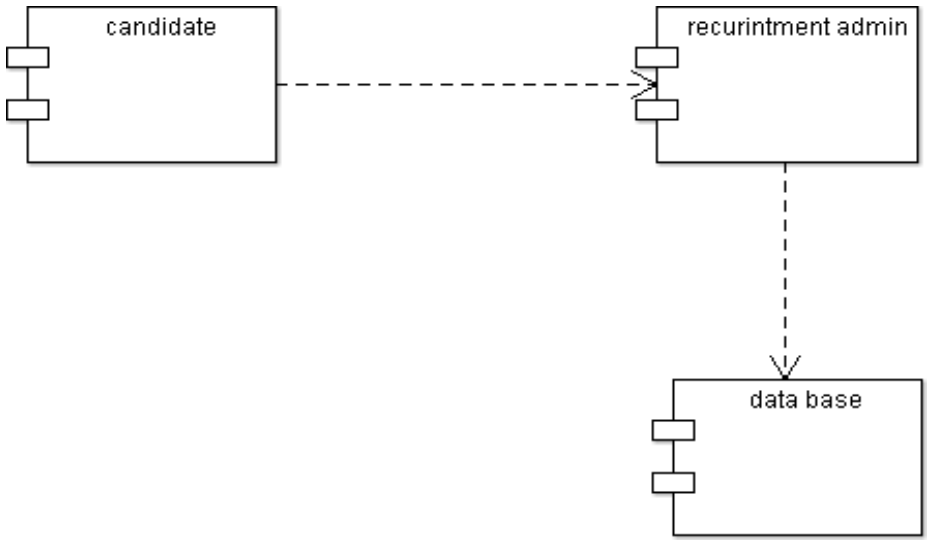
**SEQUENCE DIAGRAM**



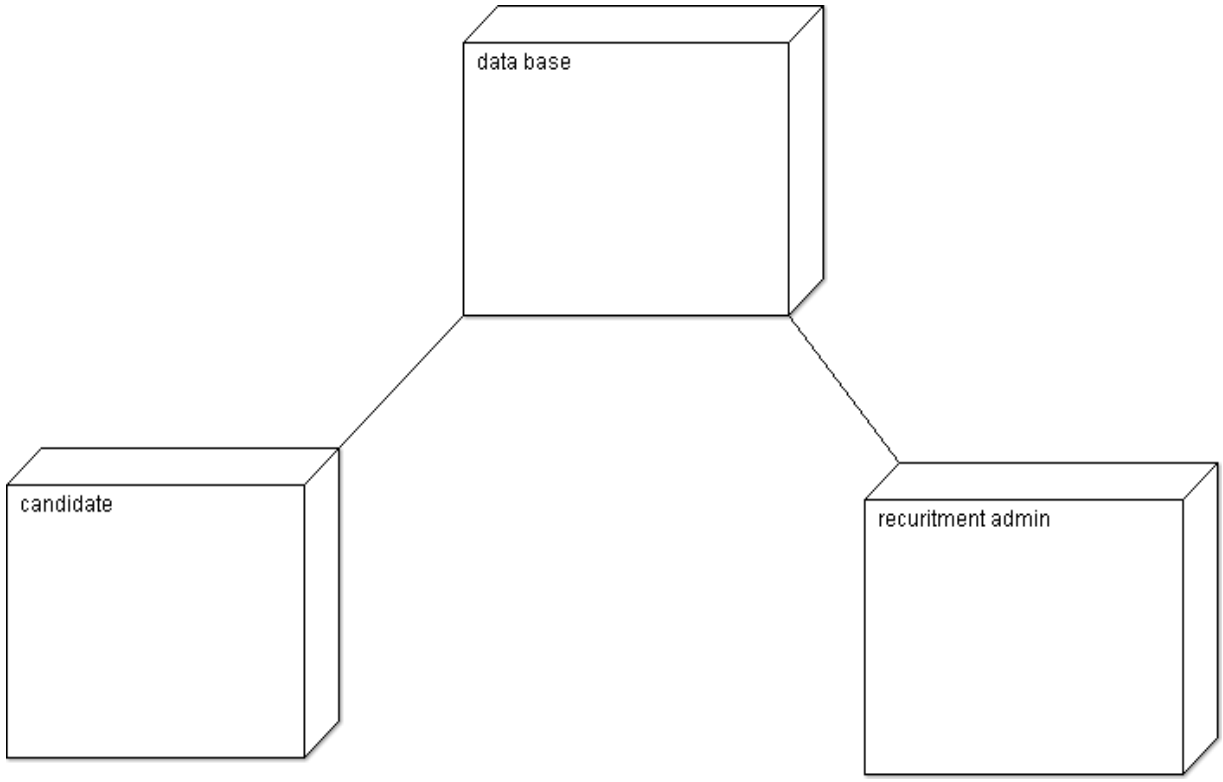
## COLLABORATION DIAGRAM




## COMPONENT DIAGRAM



**DEPLOYMENT DIAGRAM**




**Result:**

Thus the UML diagram for Recruitment System is drawn and code generated successfully.

**Ex. No: 11**
**Date :**

# FOREIGN TRADING SYSTEM

## PROBLEM STATEMENT

- The steps involved in Foreign Trading System are:
- The trading system begins its process by getting the username and password from the trader.
- After the authorization permitted by the administrator, the trader is allowed to perform the sourcing to know about the commodity details.
- After the required commodities are chosen, the trader places the order.
- The administrator checks for the availability for the required commodities and updates it in the database.
- After the commodities are ready for the trade, the trader pays the amount to the administrator.
- The administrator in turn provides the bill by receiving the amount and updates it in the database.
- The trader logouts after the confirmation message has been received.

## OVERALL DESCRIPTION

TRADER : Person who trades for the commodities.

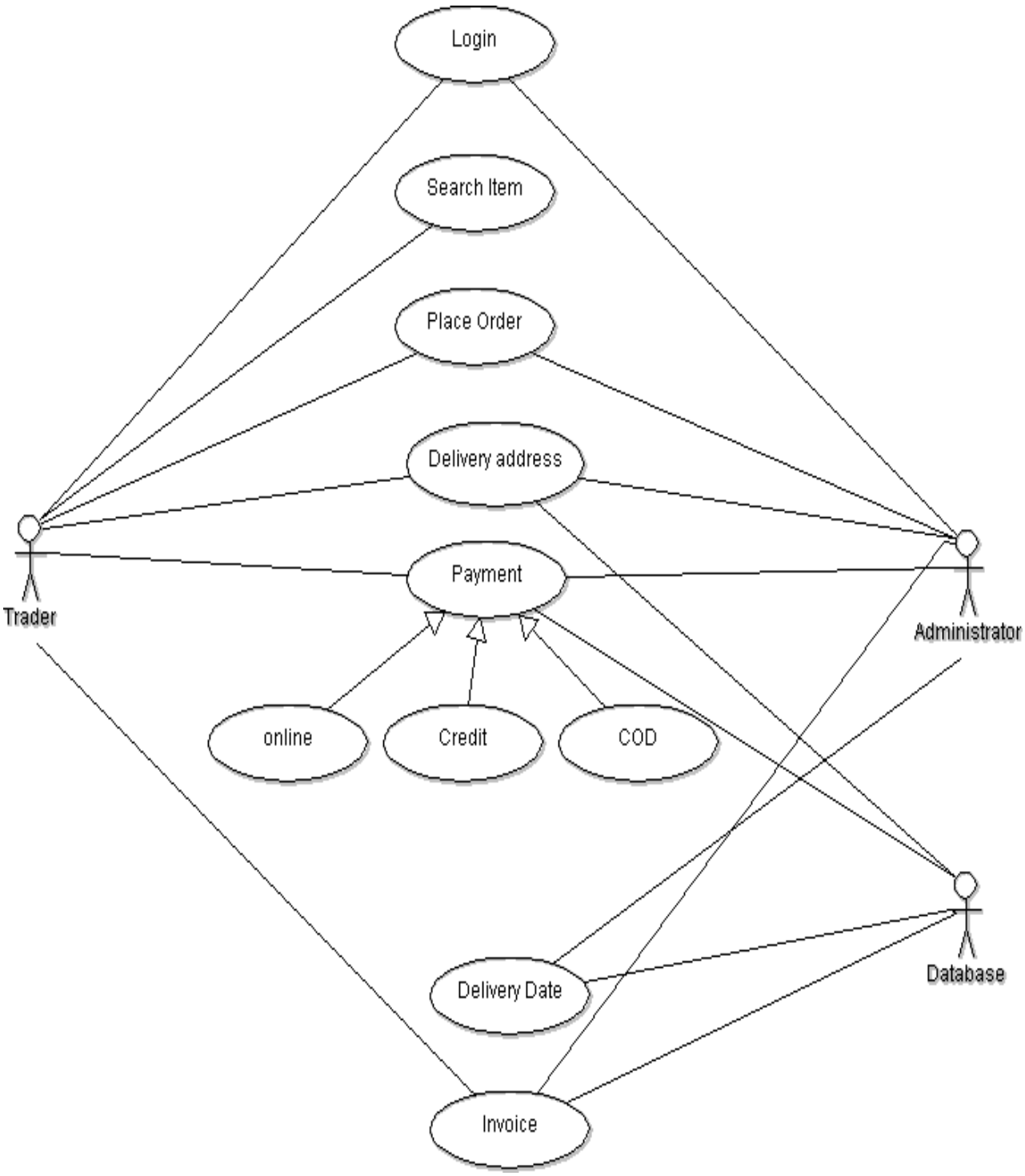
ADMINISTRATOR : One who coordinates the entire trading process.

DATABASE : All the transaction details are stored here.

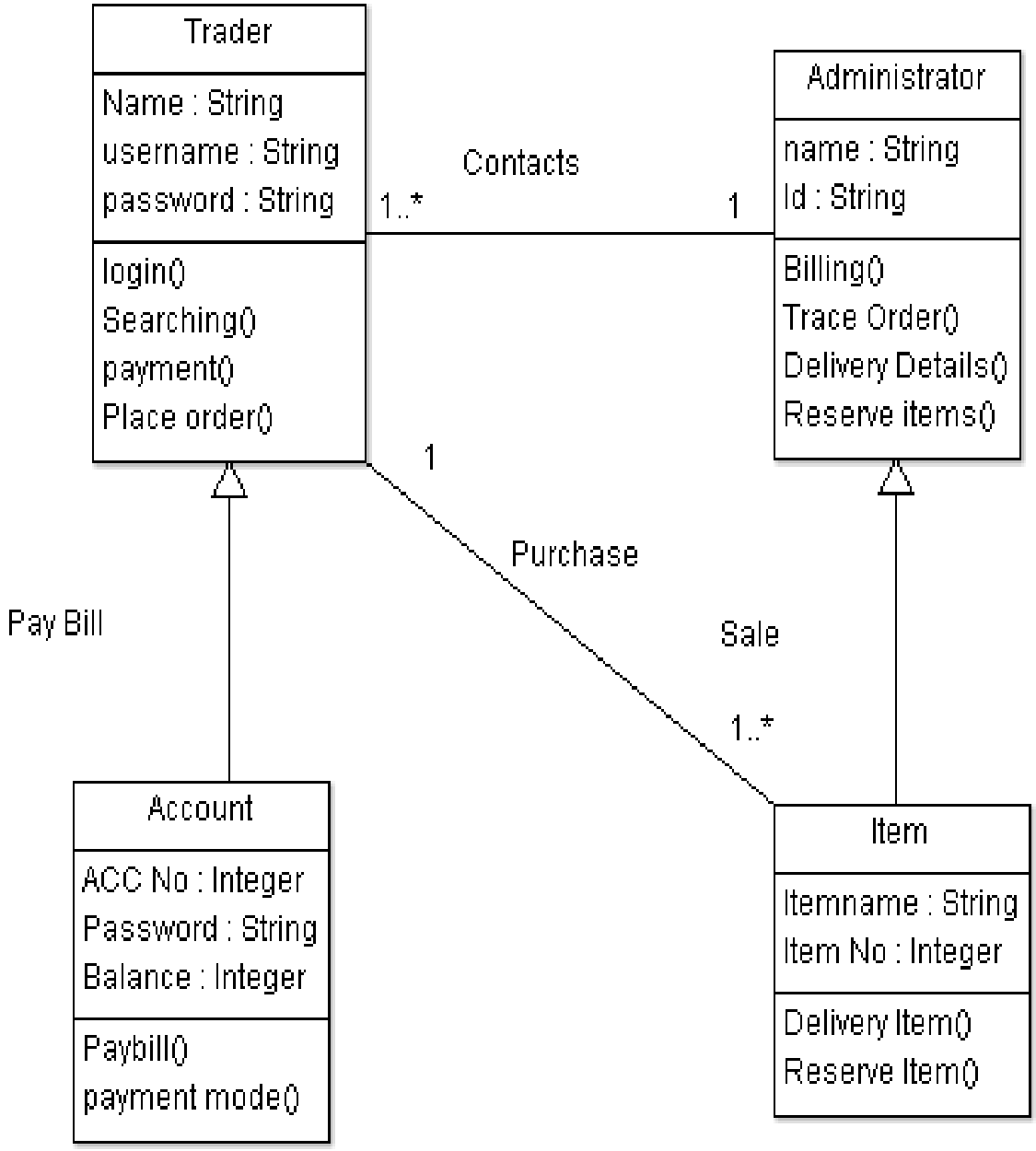
READER : Person who is viewing the website.

USER : The traders and the viewers are the users.

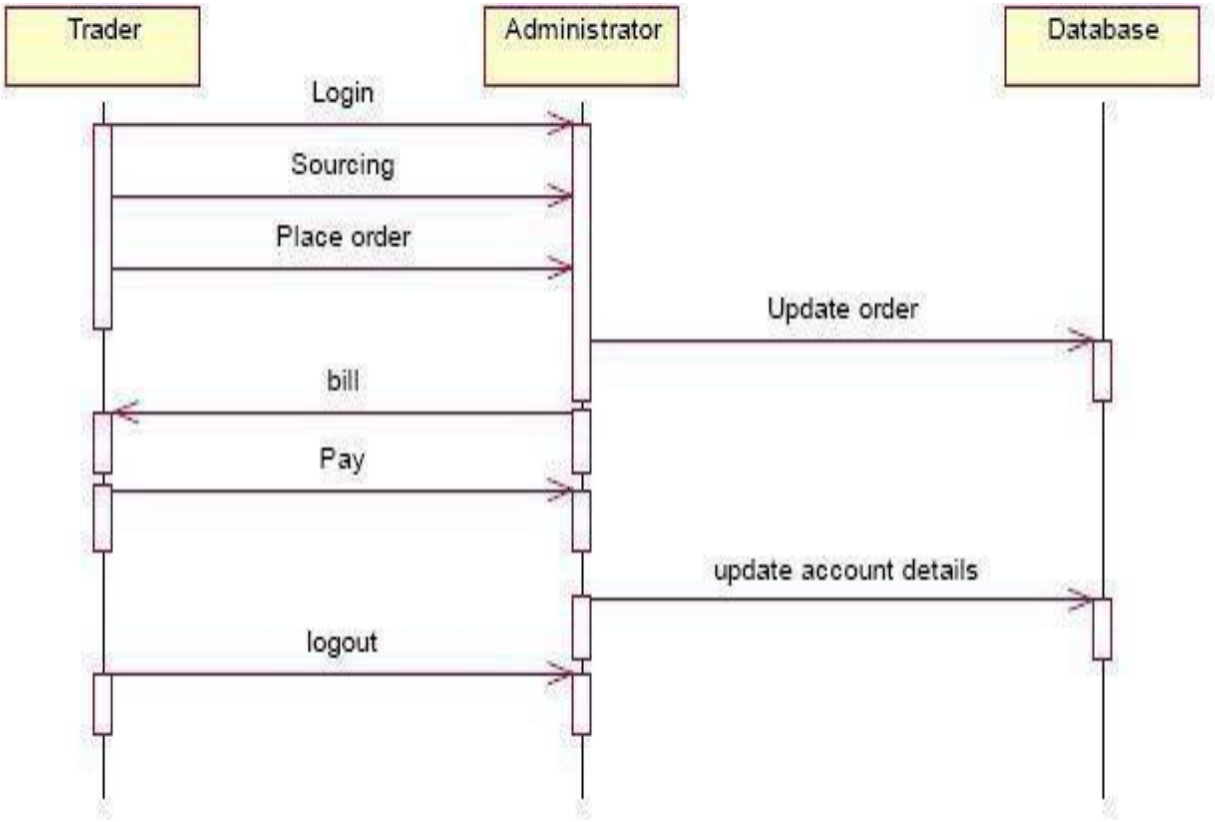
**USE CASE DIAGRAM**



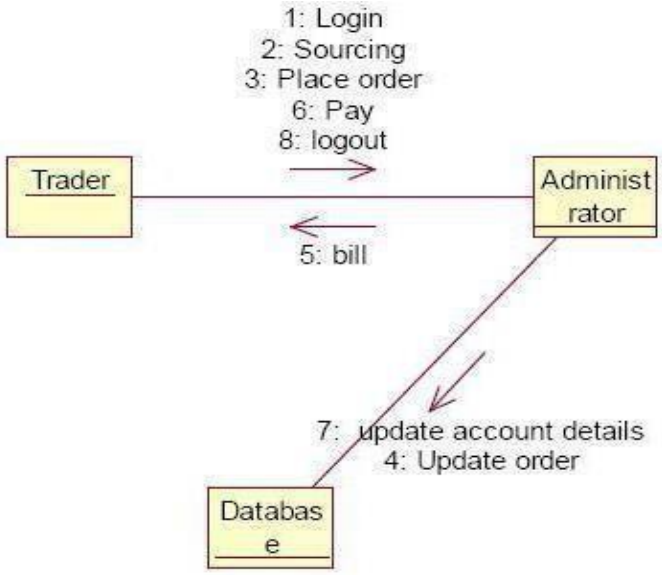
**CLASS DIAGRAM**



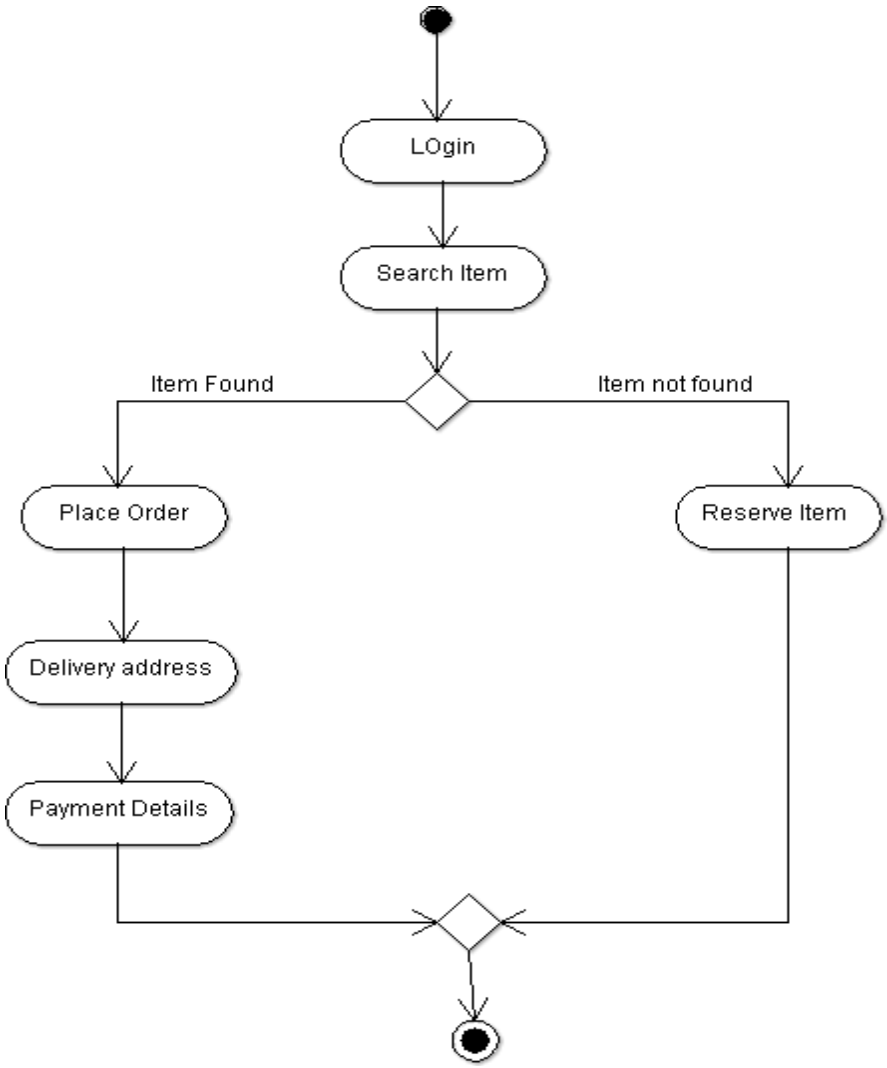
**SEQUENCE DIAGRAM**



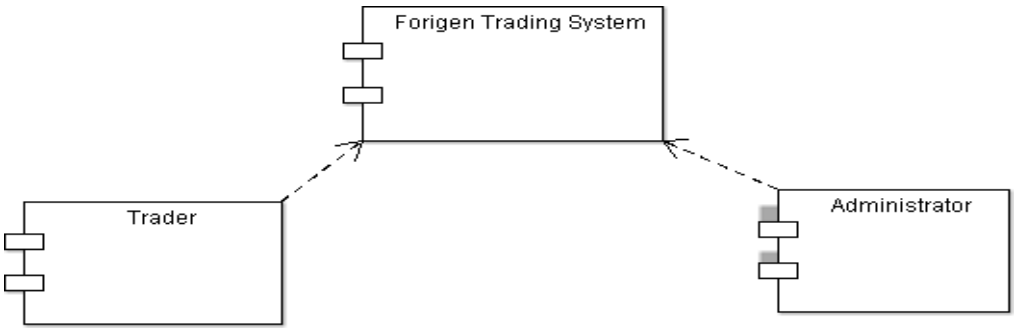

**COLLABORATION DIAGRAM**



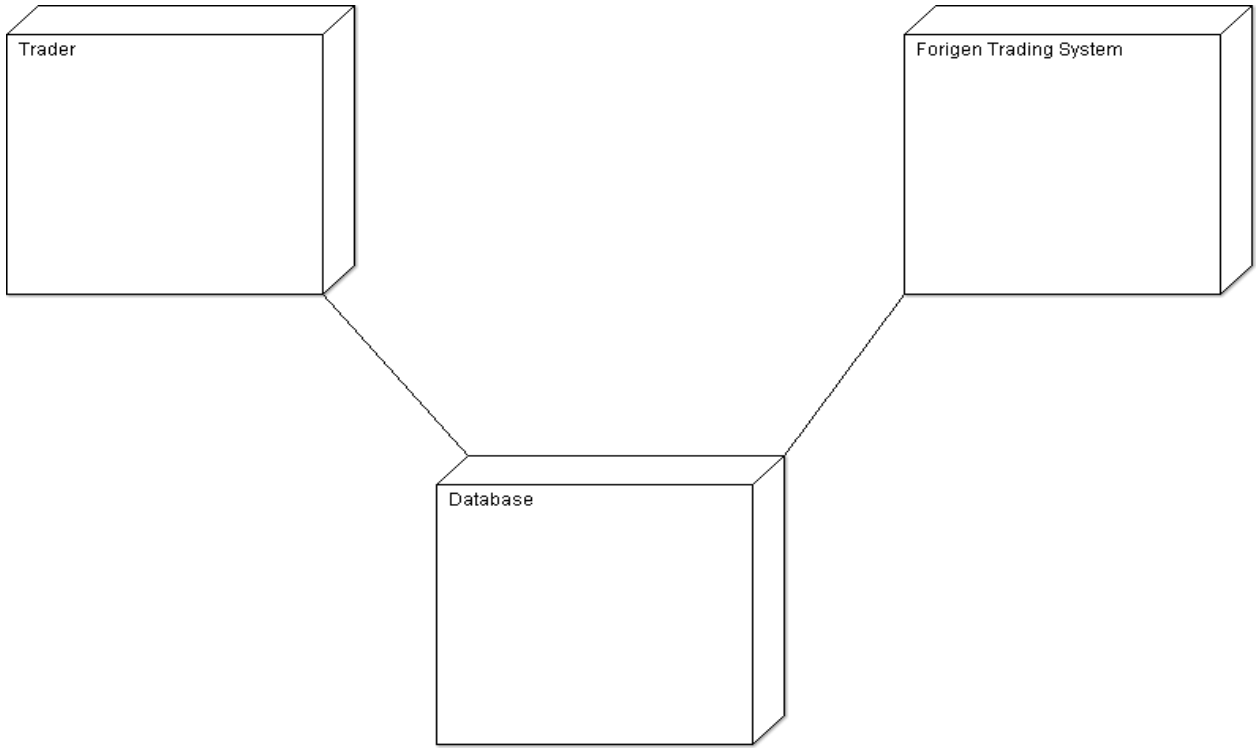
## ACTIVITY DIAGRAM




## COMPONENT DIAGRAM



**DEPLOYMENT DIAGRAM**




**Result:**

Thus the UML diagram for Foreign Treading System is drawn and code generated successfully.

**Ex.No:12**
**Date :**

# CONFERENCE MANAGEMENT SYSTEM

## 1. PROBLEM STATEMENT:

This project deals with the conference management system .As a students or staff members are required to view the details of conference is going to conduct in various colleges or institutions and to attend the conference to gain knowledge from the conferences. Administrator will add the details about the various conferences available to attend for various department students and staff members.

User will enter into the system by giving the username and password and selection form will be displayed for the user from that department should be selected and depending up on the department the conference management system will show the details of the conferences in various place using Ms Access and Visual basic 6.0.

## 2. OVERALL DESCRIPTION

### 1. Login Form:

Authenticate the user and administrator.

### 2. Department Selection Form:

This form will give the options for selecting the department to get knowledge about the conference.

### 3. Conference view Form:

This form contains the details about the conferences is conducting by various institutions and we can see the date and time for the conference.

### 4. Database Form:

The details about the conferences going to conduct by various institutions. Administrator can add the details about the conference for the students and also for the staff members.

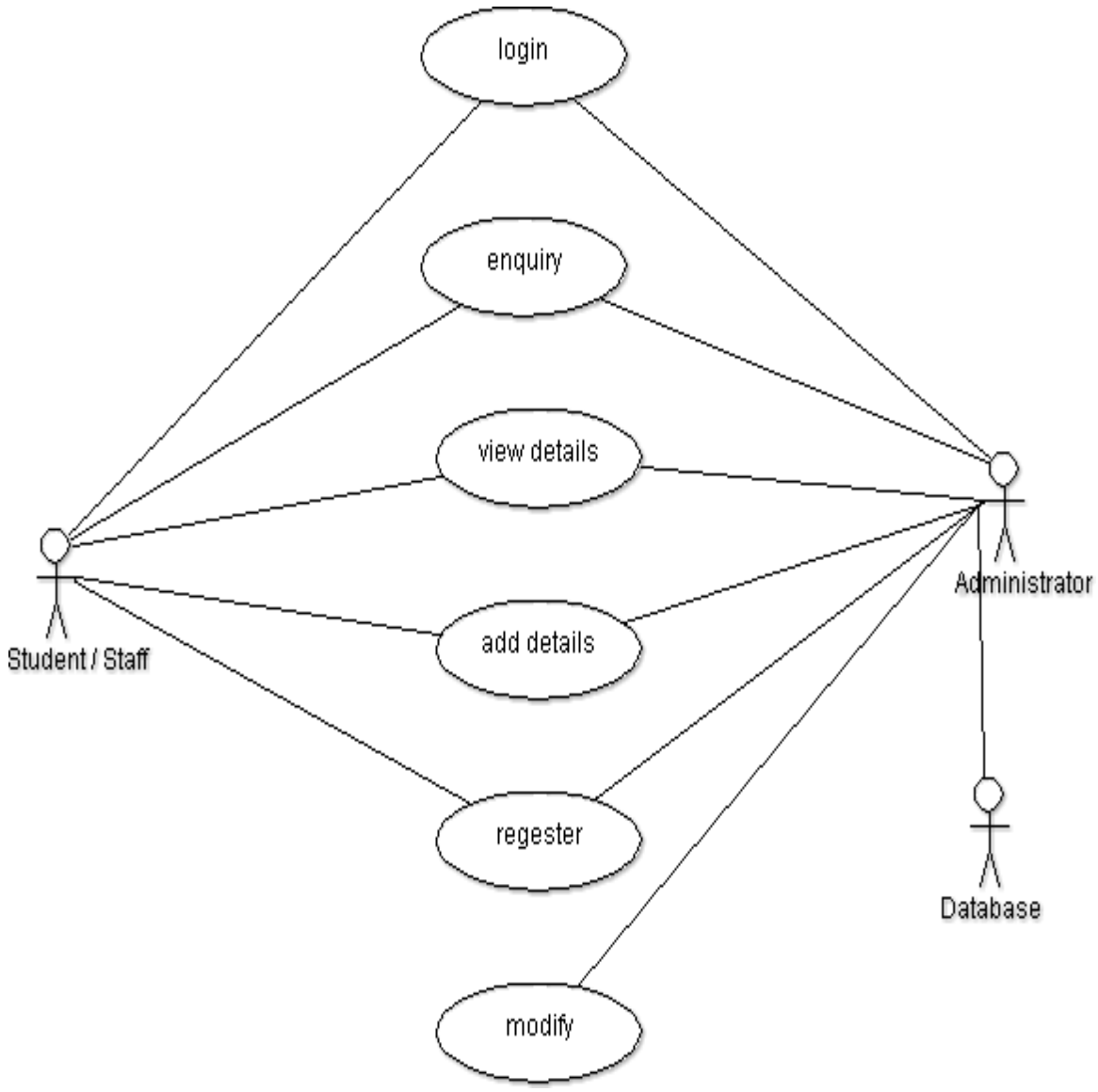
## 2.1 SOFTWARE REQURIEMENTS:

1. Microsoft Visual Basic 6.0
2. Rational Rose
3. Microsoft Access.

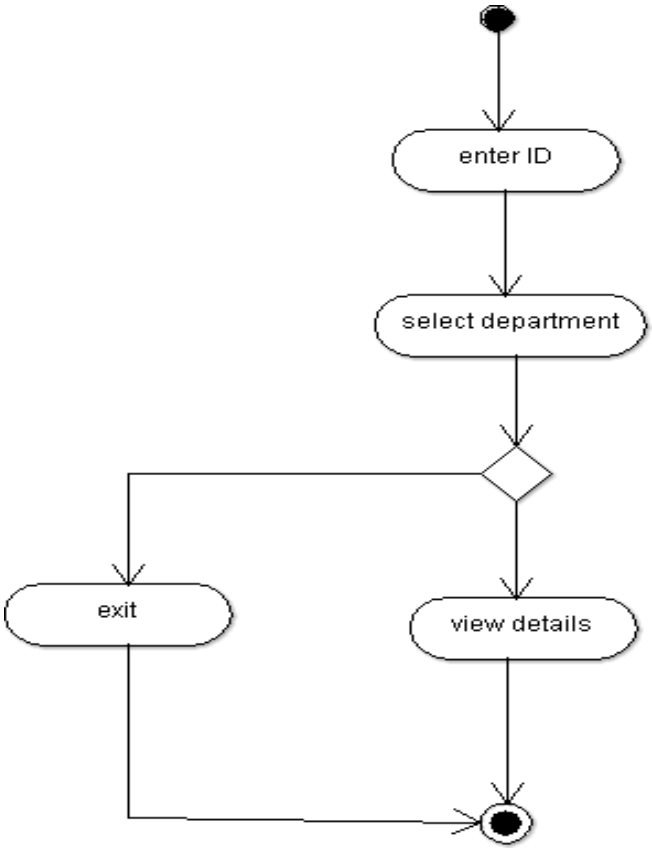
## 2.2 HARDWARE REQURIMENTS:

1. 128MB RAM
2. Pentium III Processor

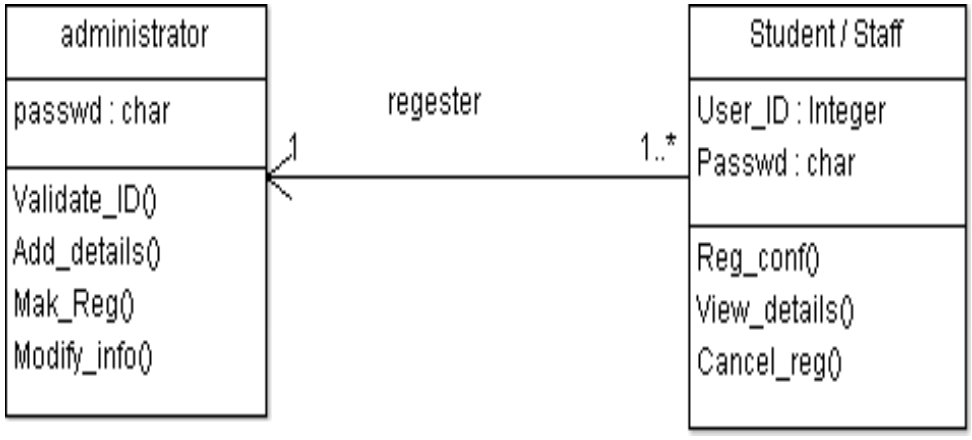
## USE CASE DIAGRAM:



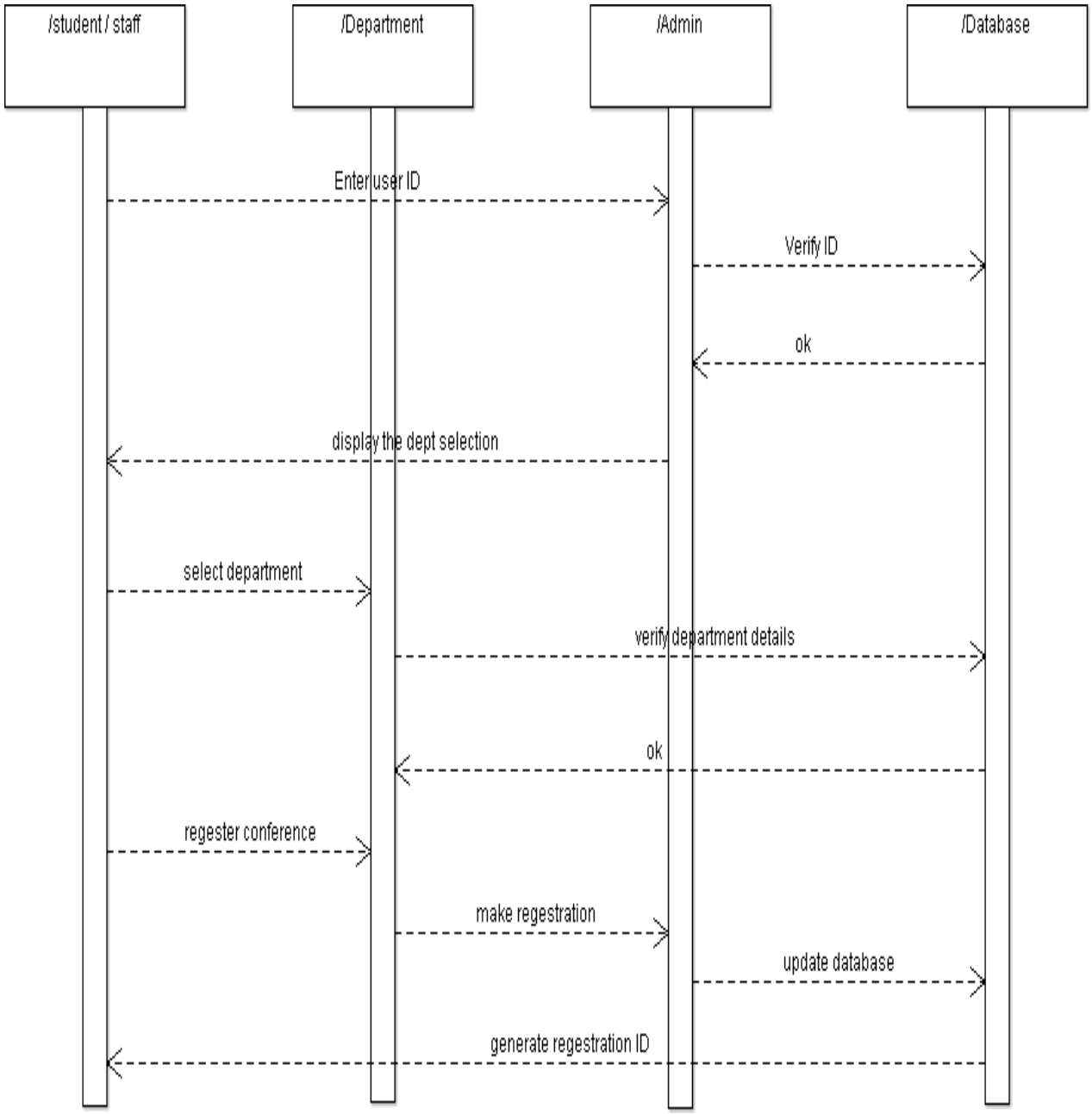
**ACTIVITY DIAGRAM:**



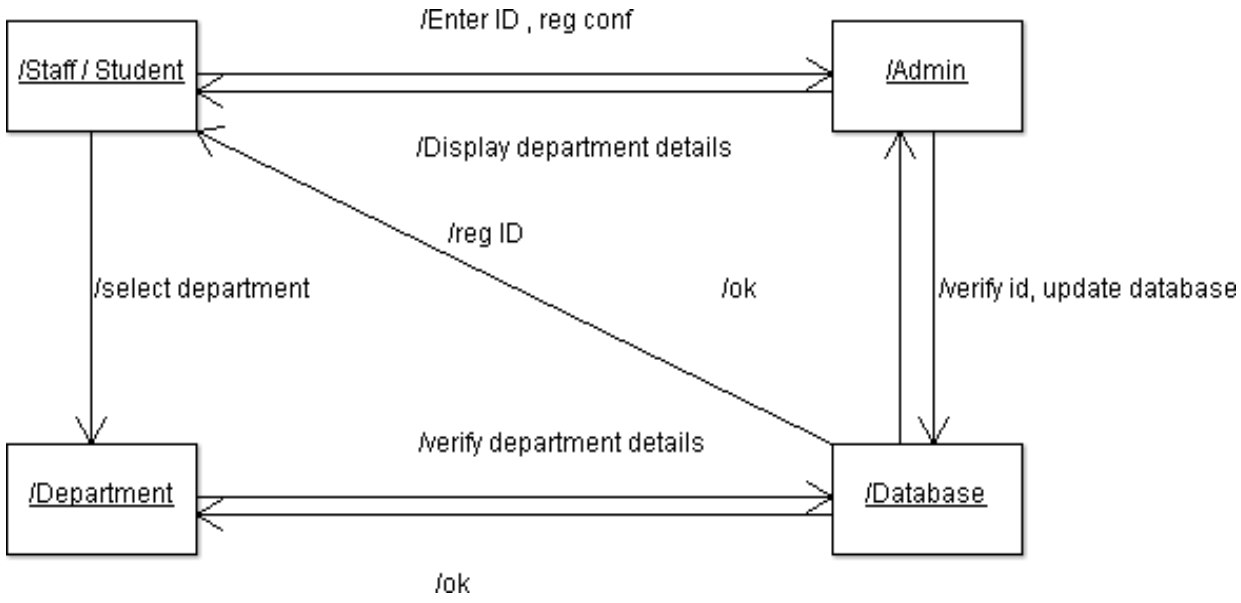

**CLASS DIAGRAM:**



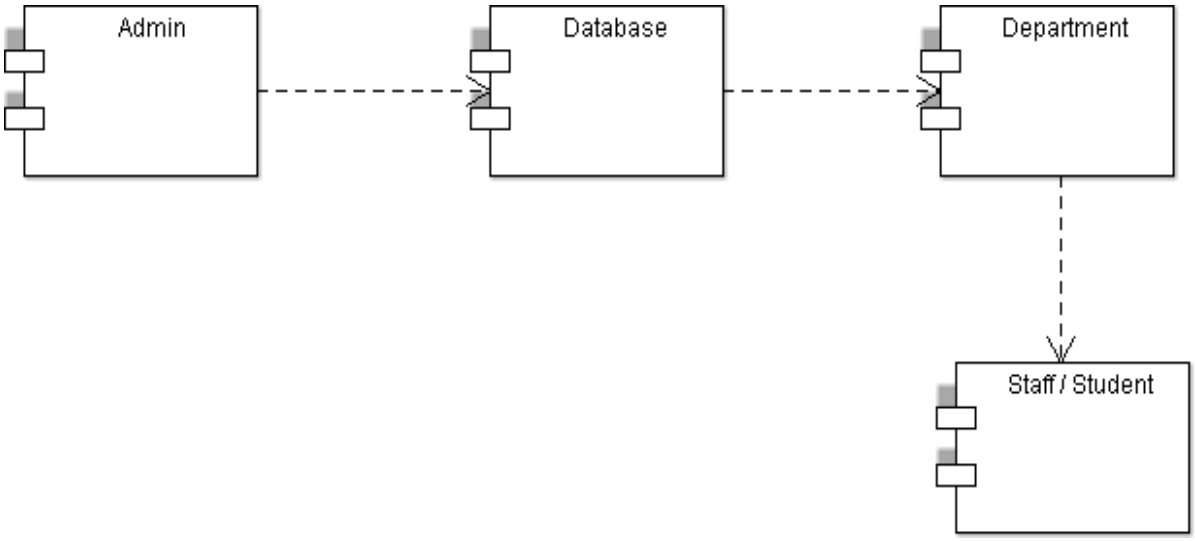
**SEQUENCE DIAGRAM:**



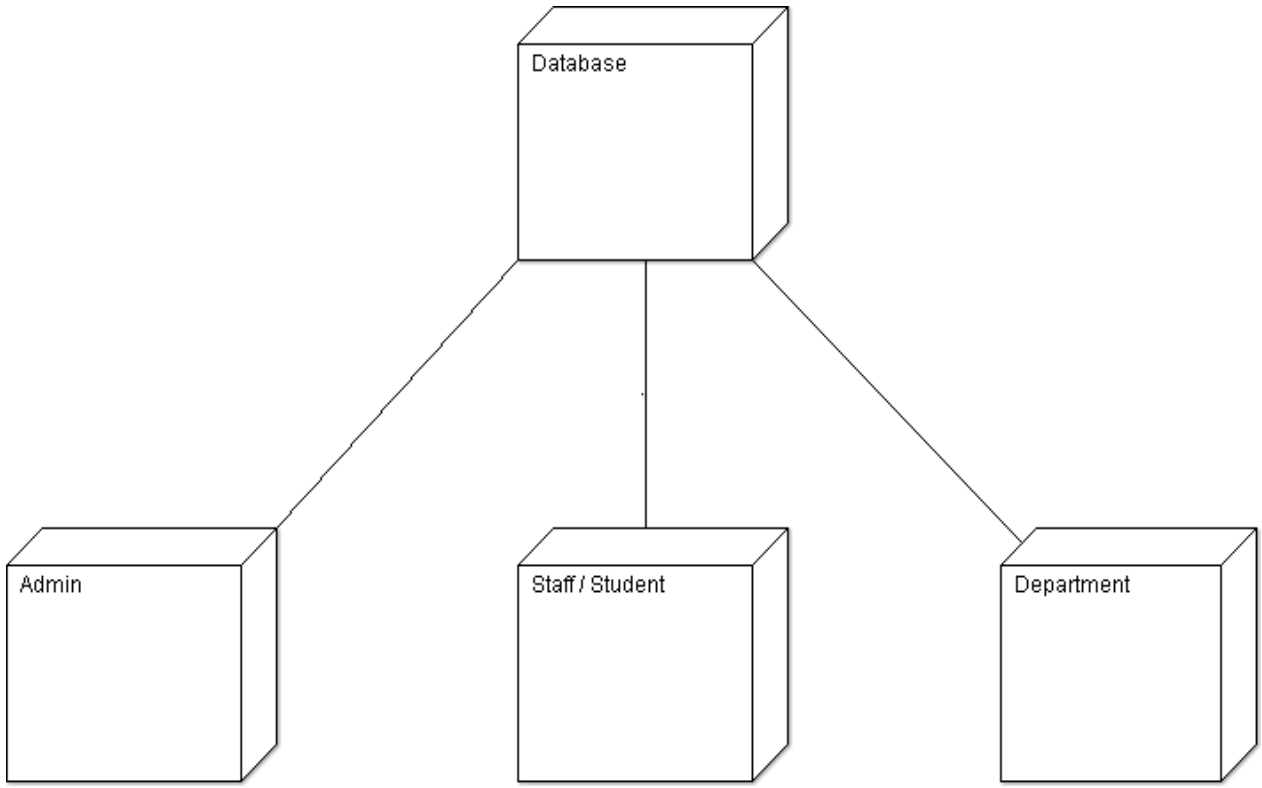
**COLLABRATION DIAGRAM:**




**COMPONENT DIAGRAM:**



**DEPLOYMENT DIAGRAM:**




**Result:**

Thus the UML diagram for Conference Management System is drawn and code generated successfully.

**Ex. No: 13**
**Date :**

# BPO MANAGEMENT SYSTEM

## PROBLEM STATEMENT:

To develop a BPO Management System. The system developed should contain the following features:

- This system adopts a comprehensive approach to minimize the manual work and schedule resources, time in a cogent manner.
- The client places a project order to the system and also providing the requirements for the particular project.
- The BPO employee enters into the system and selects the project.
- The employee classifies the project into voice and on voice based mode.
- Then the same project into classified into outsourcing service type(IT/SOFTWARE, BACKOFFICE/ACCOUNTING/FINANCIAL/KLNOWLEDGE BASED).
- The BPO employee processes the project and finally submits the project.
- The project is delivered to the client if the payments are received.

## PROJECT PROCESSING MODULE

This use case starts when the client places the order to the BPO management system..

**Flow of Events:**

**Basic flow:**

The use case starts when the client places a project order to the system and also providing the requirements for the particular project. The BPO employee enters into the system and selects the project. The employee classifies the project into voice and on voice based mode.

Then the same project into classified into outsourcing service type like:

- IT/SOFTWARE
- CUSTOMER INTERACTION
- BACKOFFICE
- ACCOUNTING
- FINANCIAL
- KNOWLEDGE BASED.

The BPO employee processes the project and finally submits the project. The project is delivered to the client if the payments are received.

**Alternative flow:**

If the BPO employee doesn't classify the service type into voice or non voice based mode, then error occurs and the project cannot be processed.

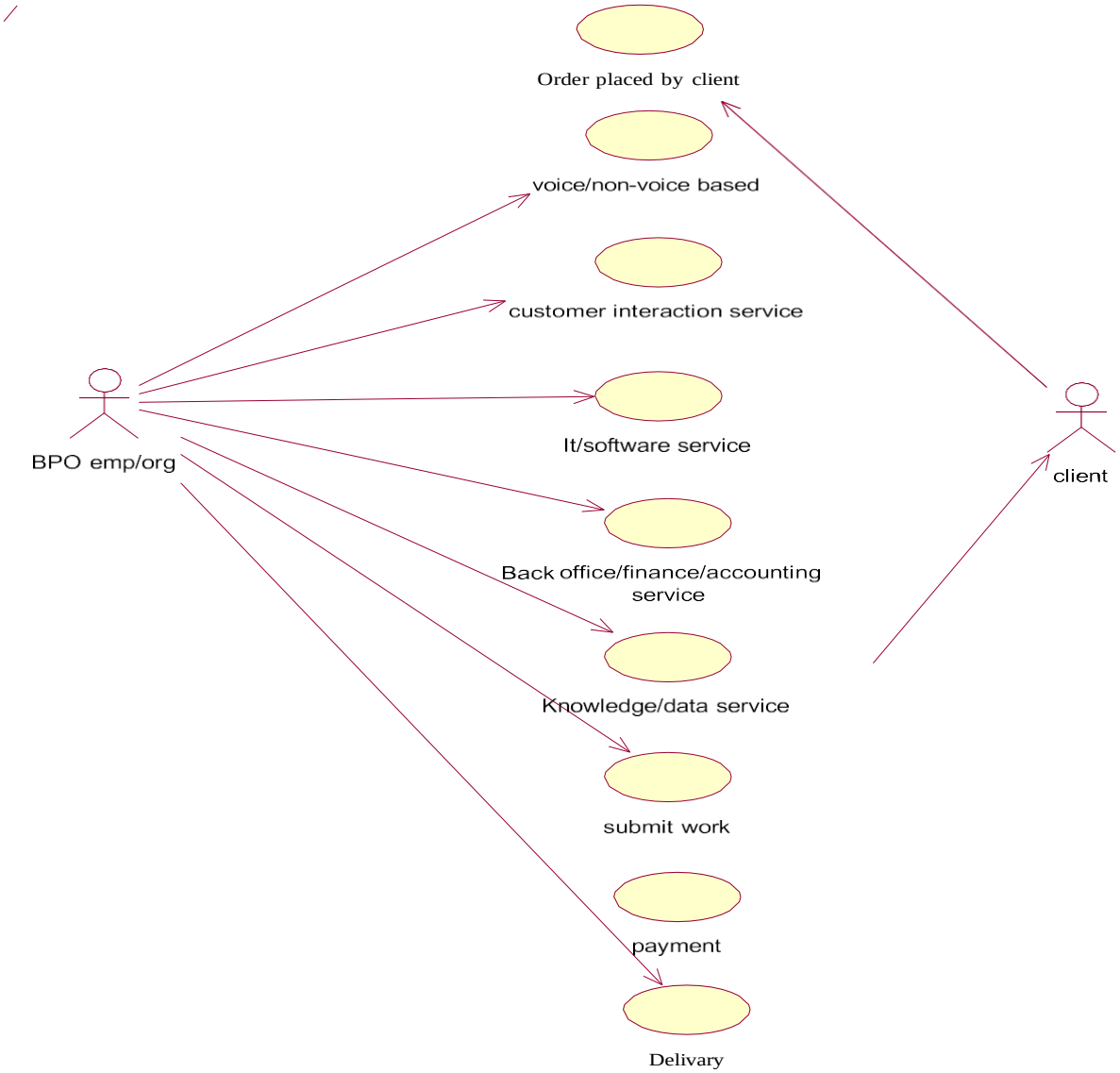
**Pre- condition:**

None

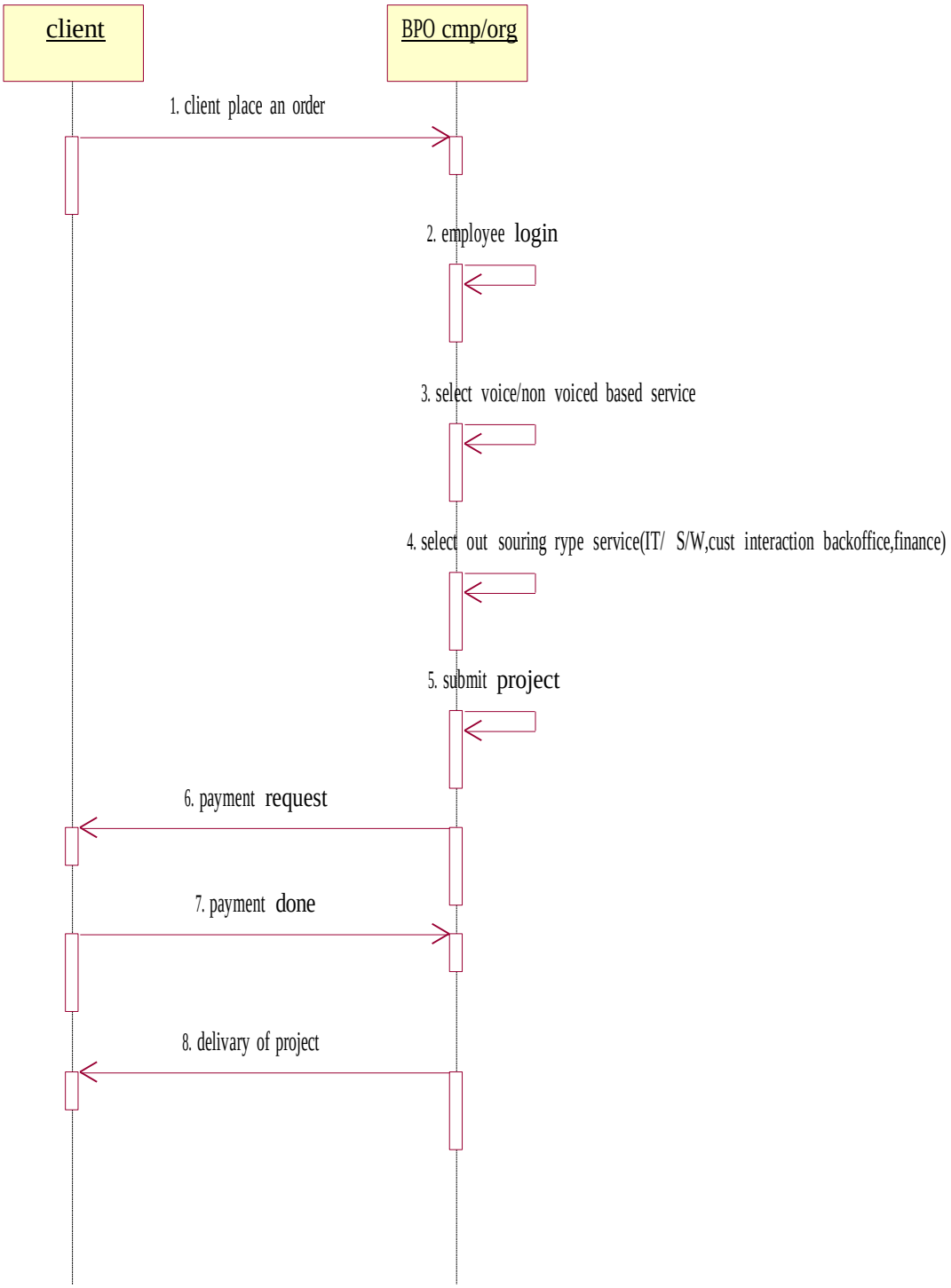
**Post- condition:**

After completion of this use case, the information of the Client and project will be maintained by the system.

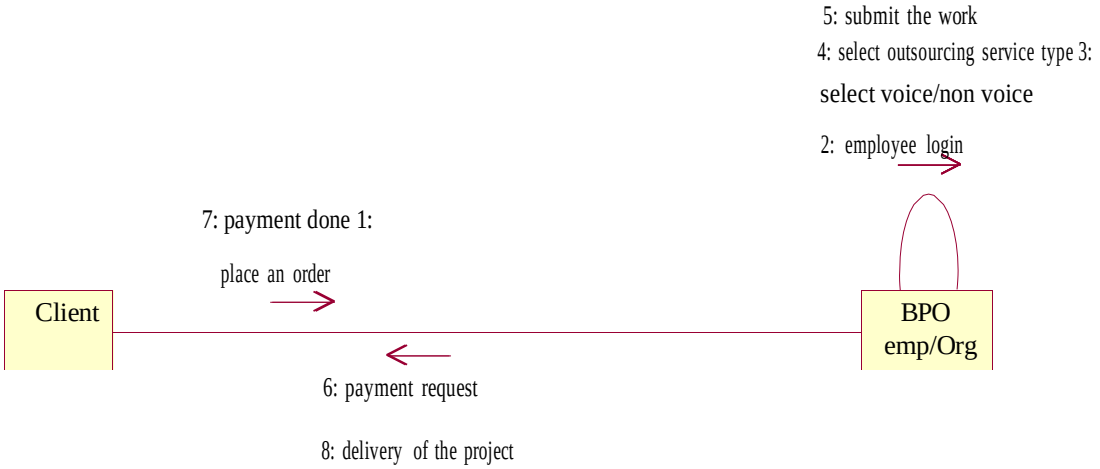
**USECASE DIAGRAM**



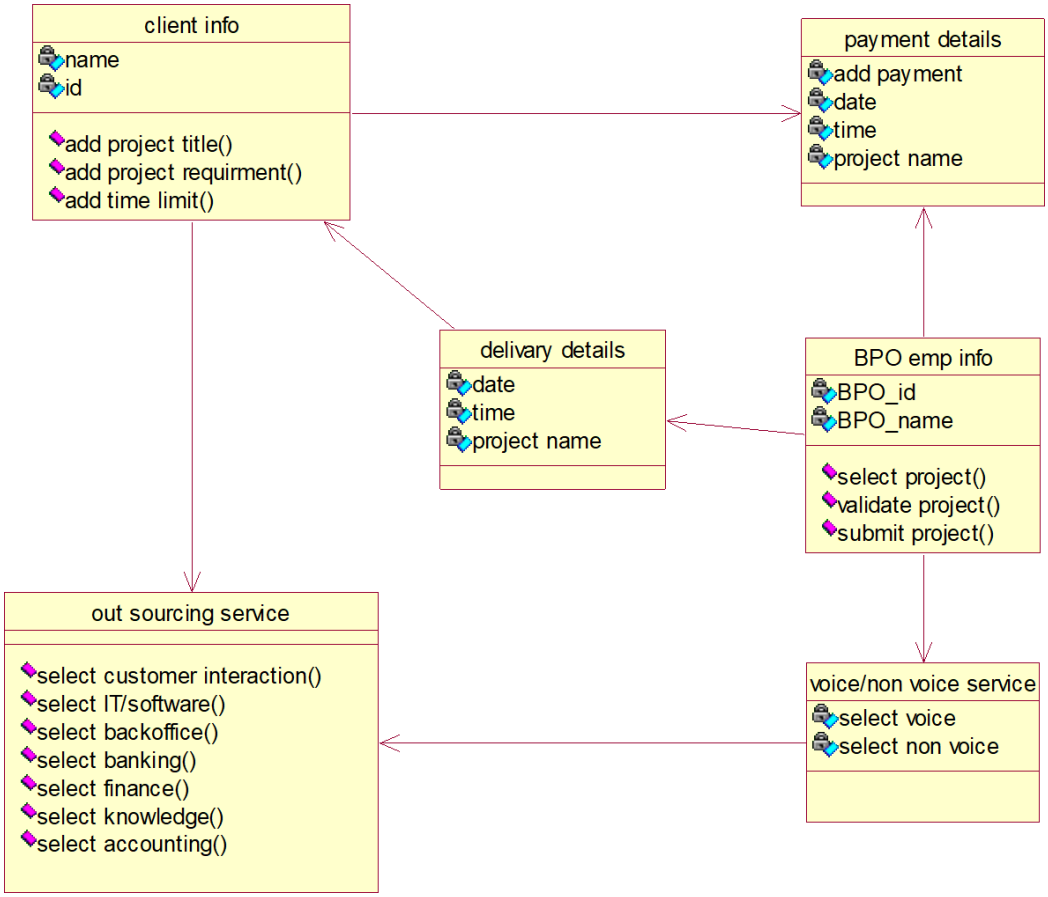
## SEQUENCE DIAGRAM



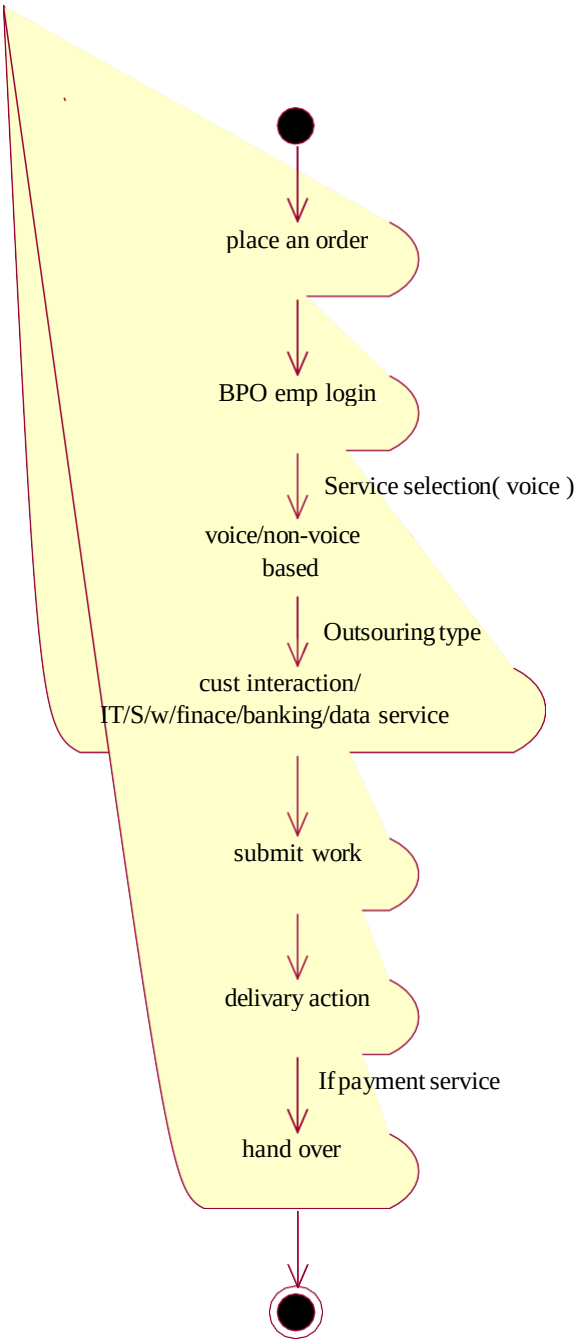
## COLLABORATION DIAGRAM



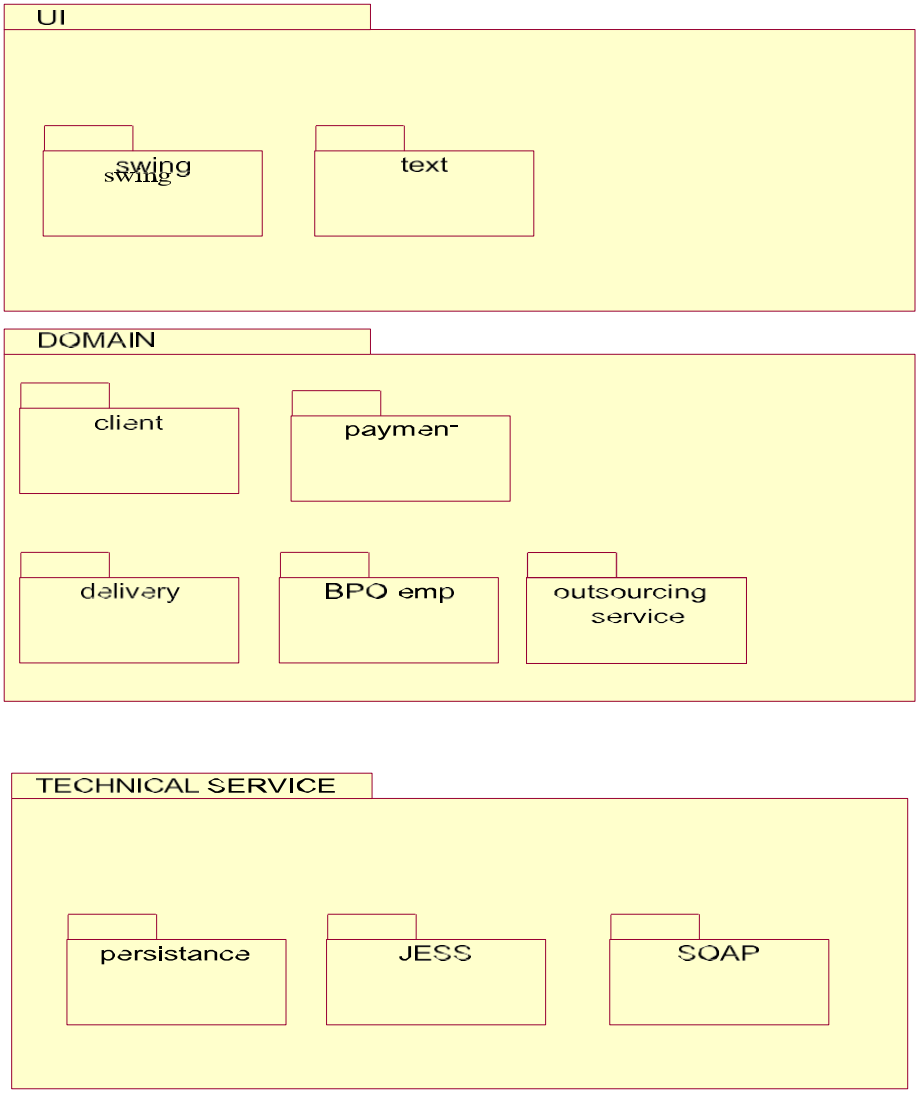

## CLASS DIAGRAM



**ACTIVITY DIAGRAM:**

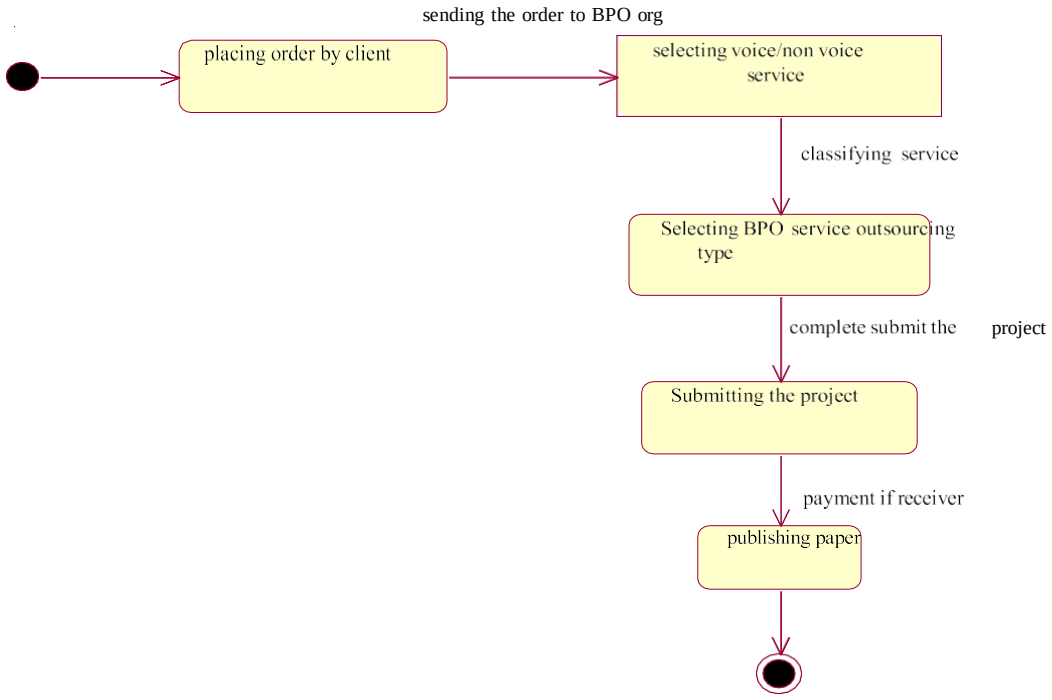


**PACKAGE DIAGRAM**

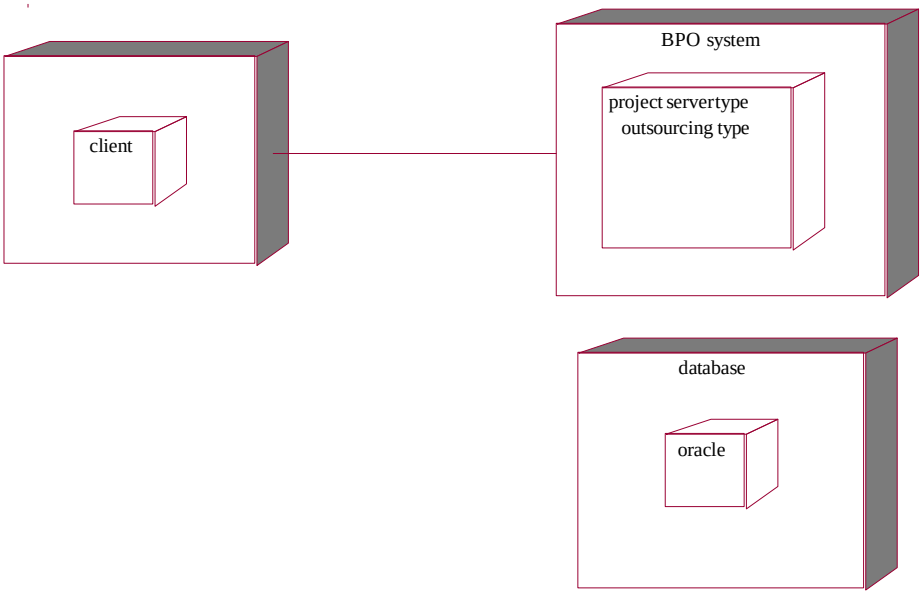



**COMPONENT DIAGRAM:**

## STATECHART DIAGRAM




## DEPLOYMENT DIAGRAM




**Result:**

Thus the UML diagram for BPO Management System is drawn and code generated successfully.

**Ex. No: 14**

**Date :** **LIBRARY MANAGEMENT**

**Aim :**

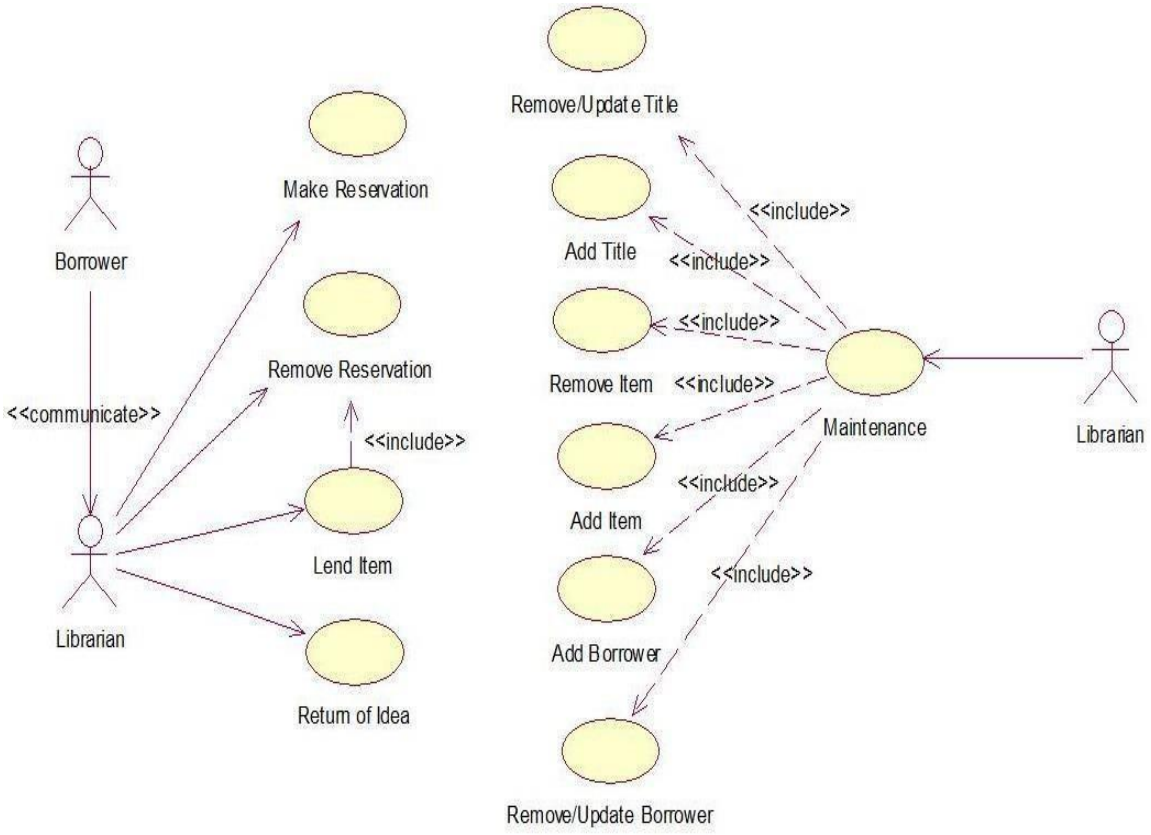
To implement the library management system using UML diagrams.

**Problem Statement**

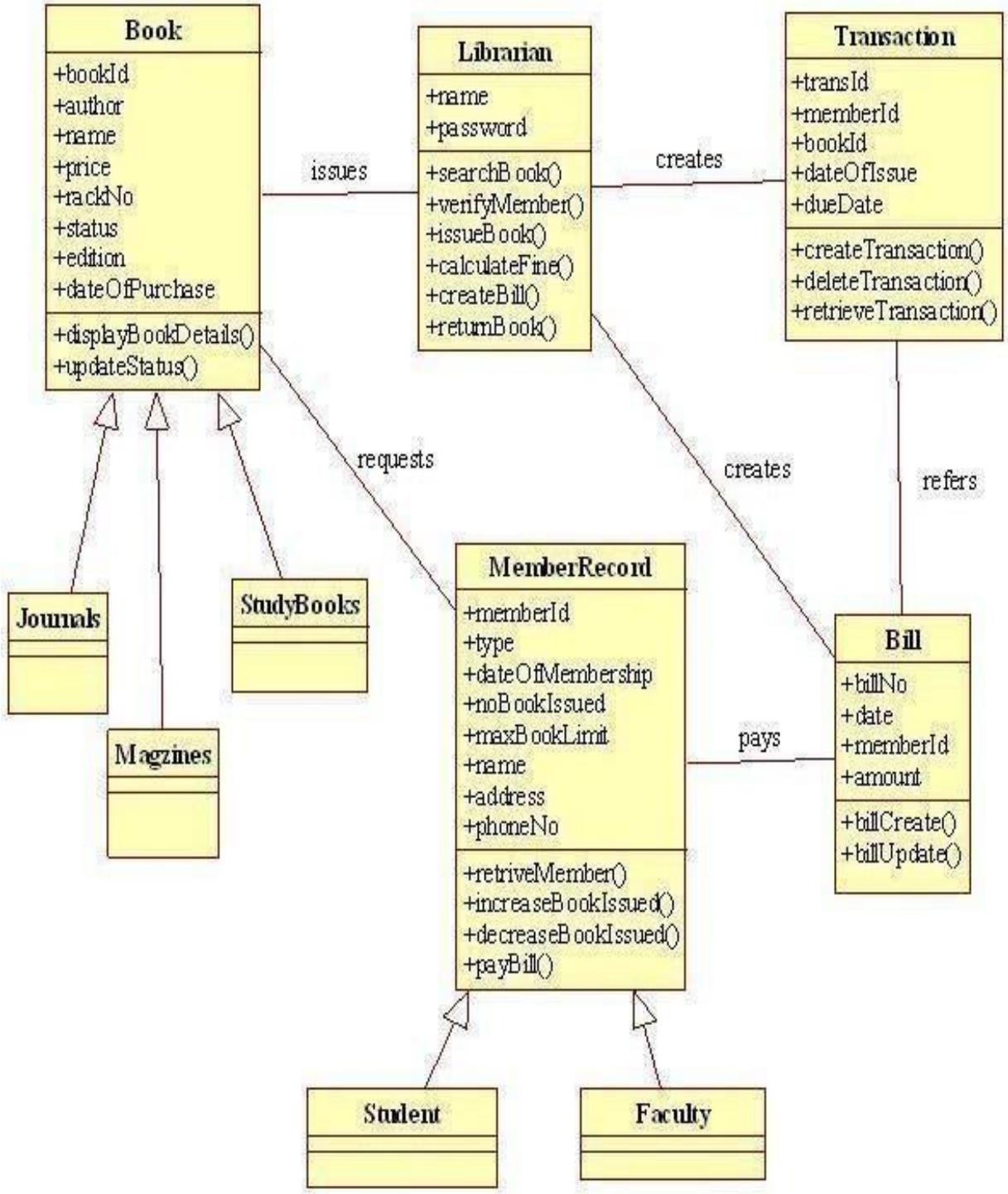
The library management system is a software system that issues book and magazines to registered students only the student has to login after getting registered to the system.

The borrower of the book can perform various functions such as searching for desired book. Make the reservation for the book and issued. Cancel the reservation for the book and return the book this system are handled the function related to the librarian such as managing the title of the book database managing the title of the book database managing borrowers, building the identity of the user.

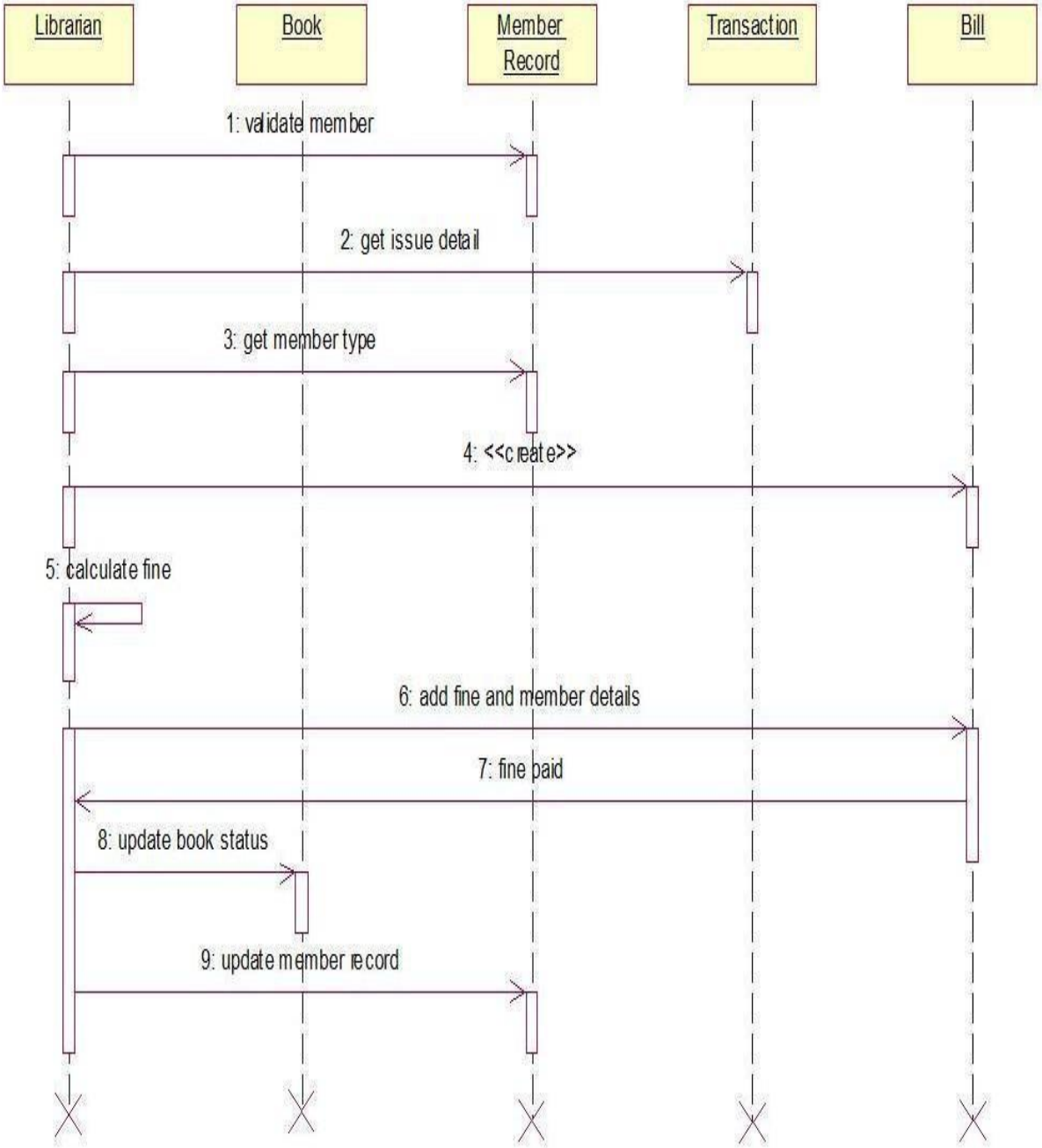
**Usecase Diagram**



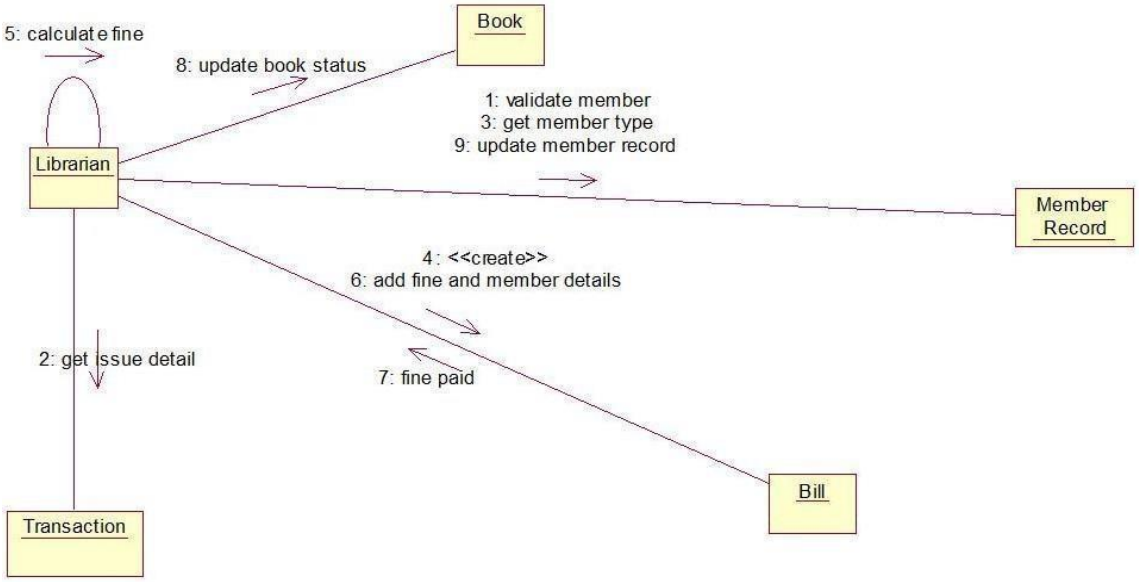
**Class Diagram**



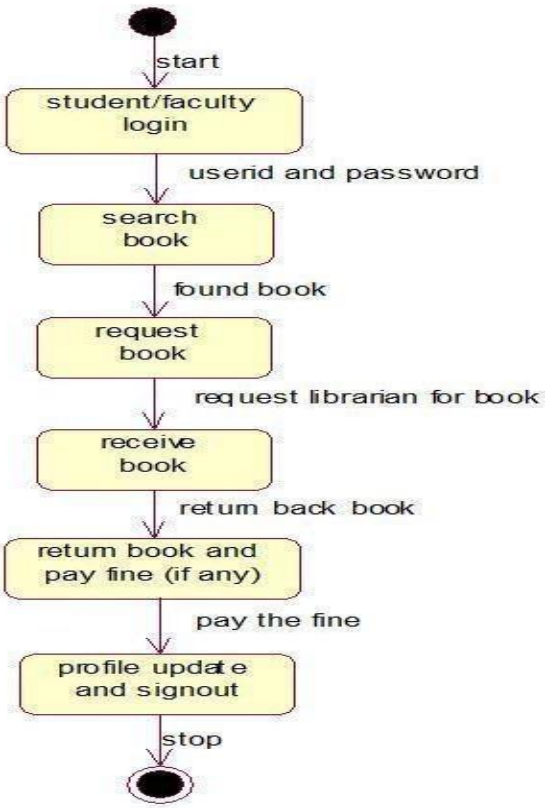
**Sequence Diagram**



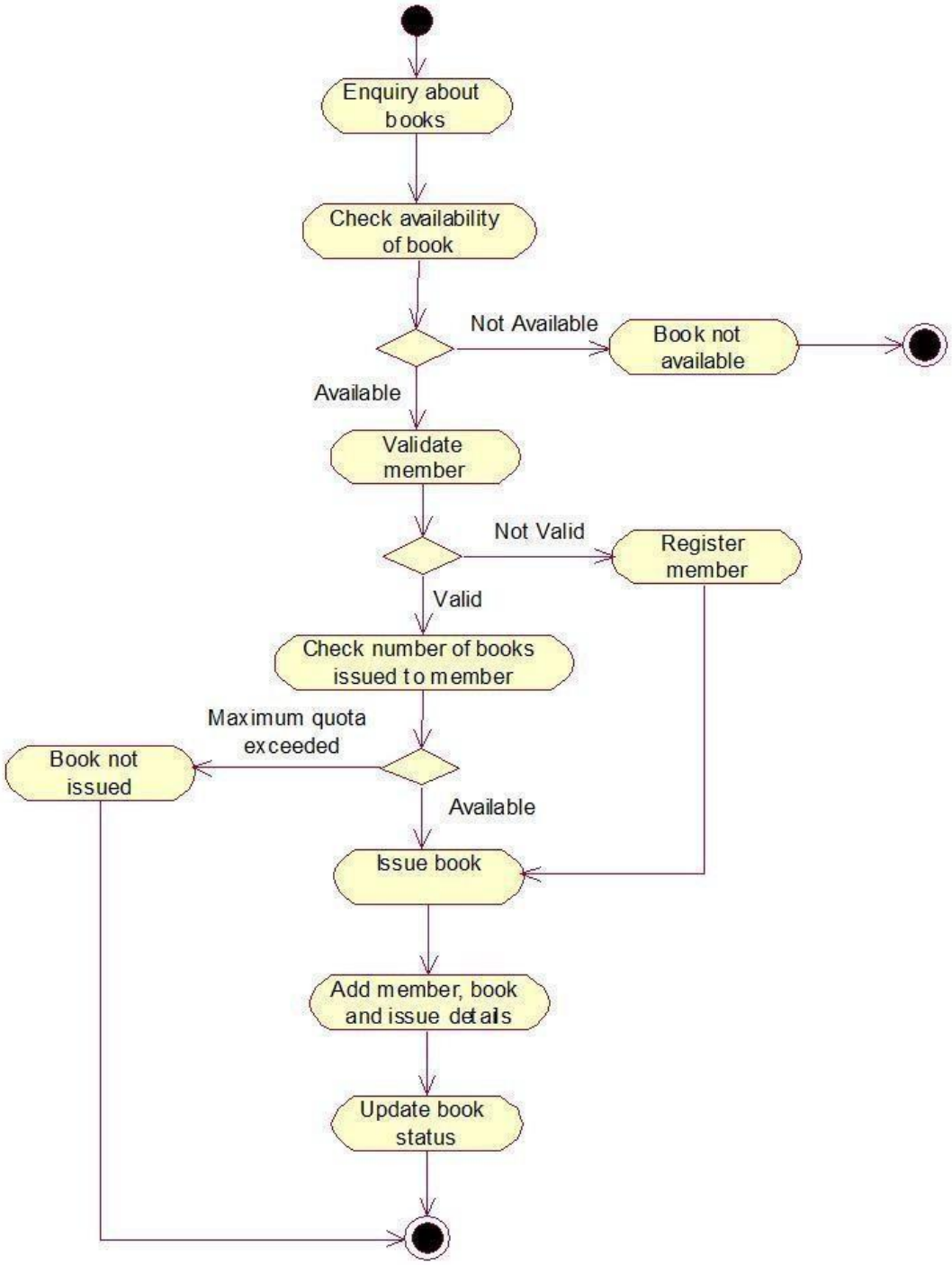
## Collaboration Diagram



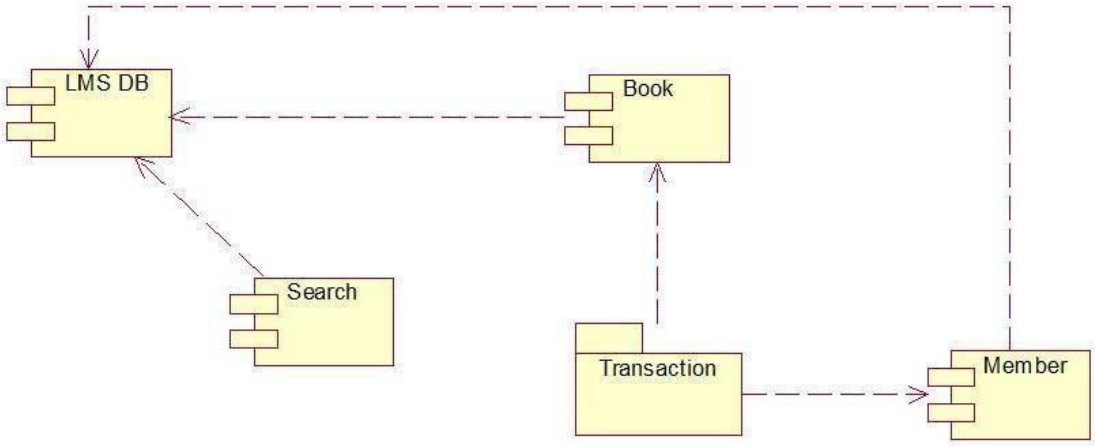

## State Diagram



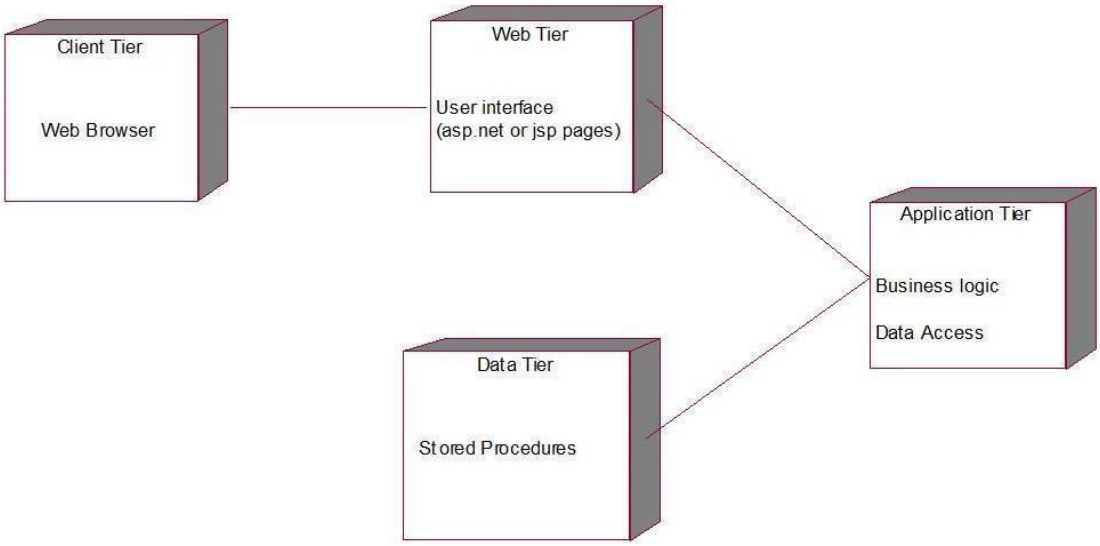
**Activity Diagram**



**Component Diagram**




**Deployment Diagram**




**Result:**

Thus the UML diagram for Library Management System is drawn and code generated successfully.

**Ex. No: 15**

**Date :** **STUDENT INFORMATION SYSTEM**

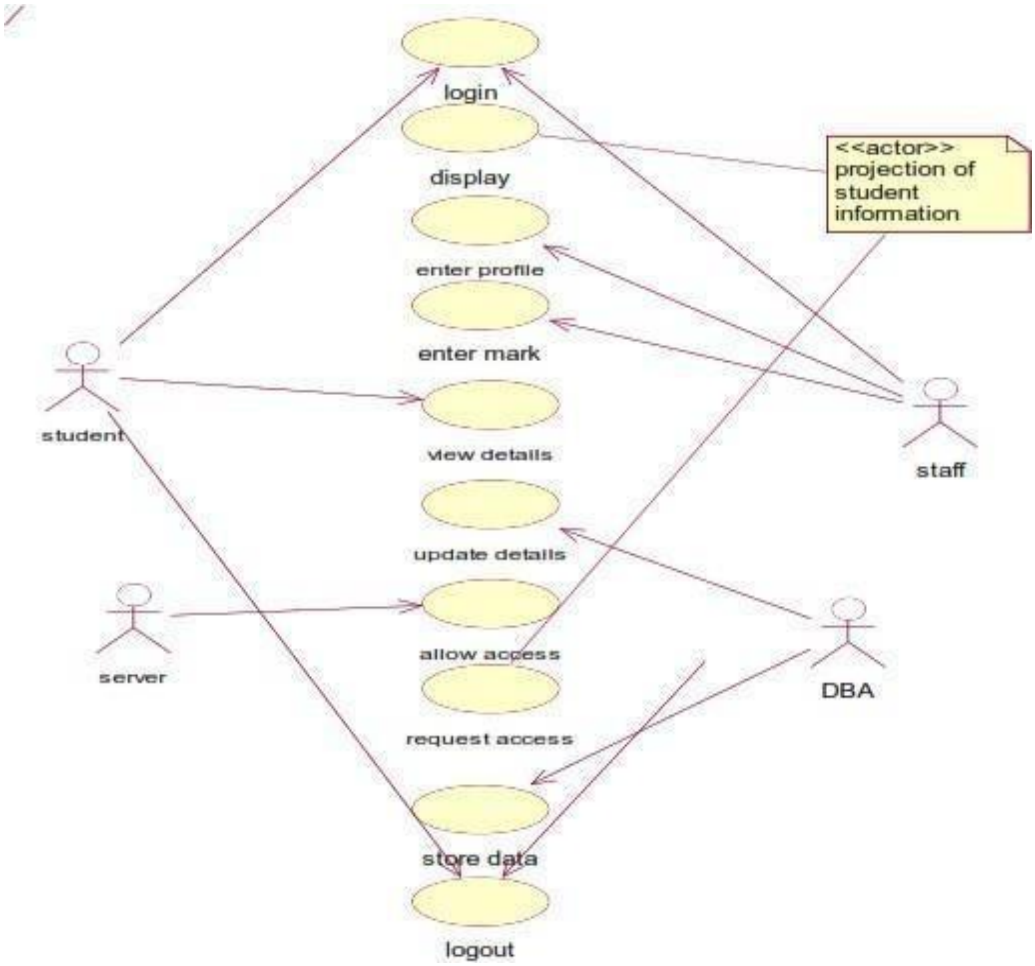
**AIM**

To develop a project Student Information System using UML diagrams.

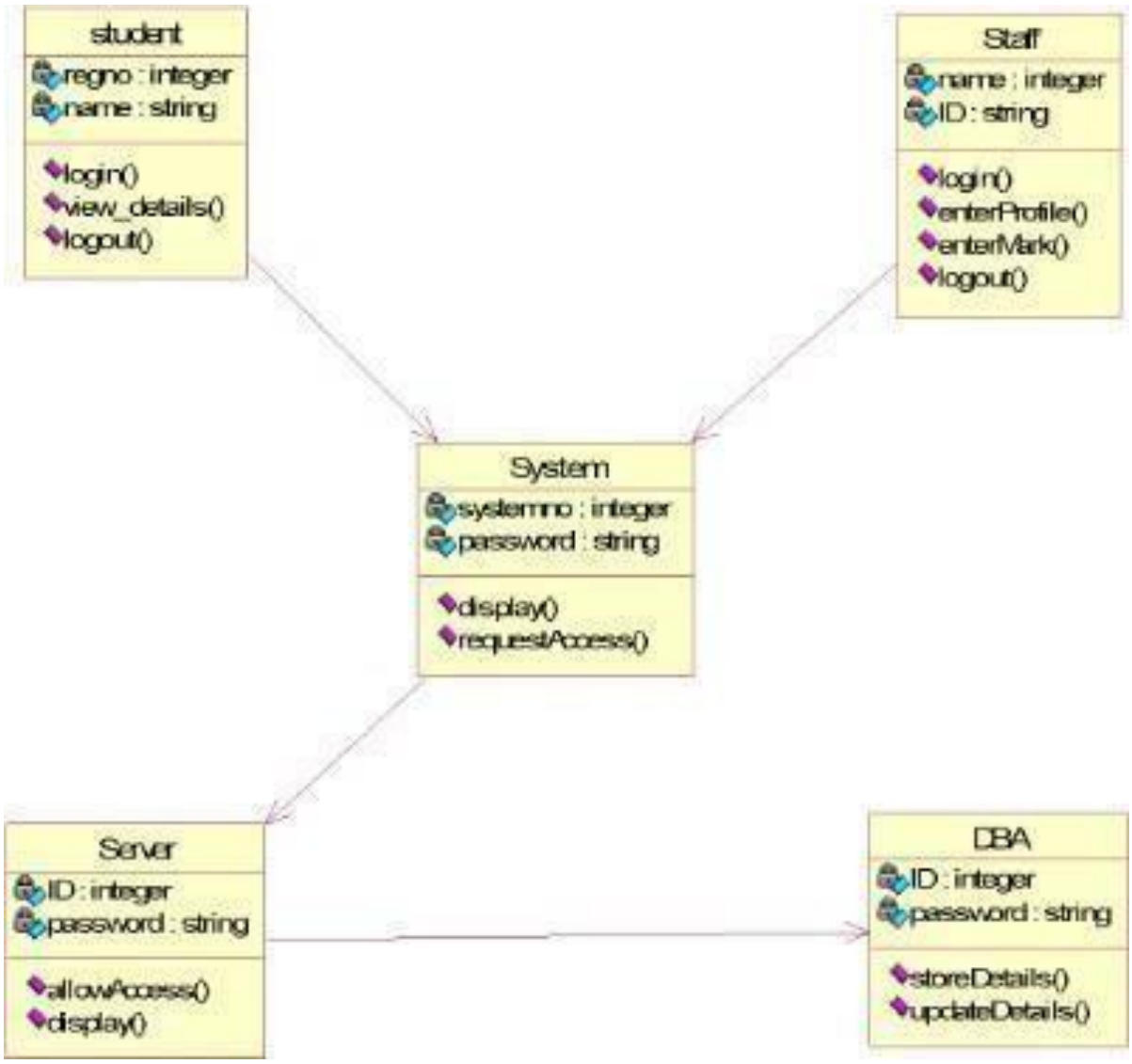
**PROBLEM ANALYSIS AND PROJECT PLANNING**

A Student information system (SIS) is a software application for educational establishments to manage student data. Student information systems provide capabilities for entering student test and other assessment scores building student schedules tracking student attendance and managing many other student related data needs in a school college or university.

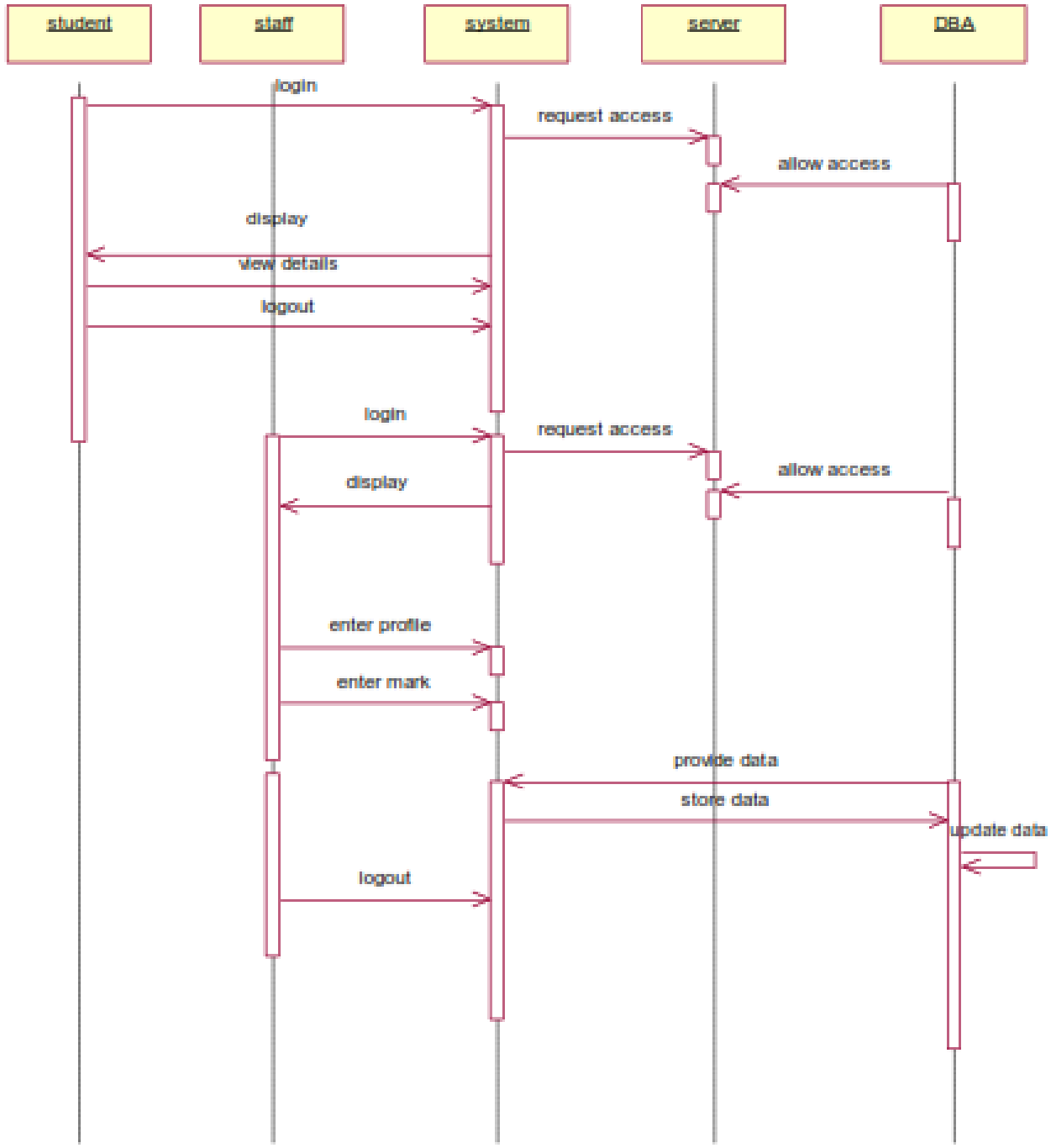
**Use case Diagram**



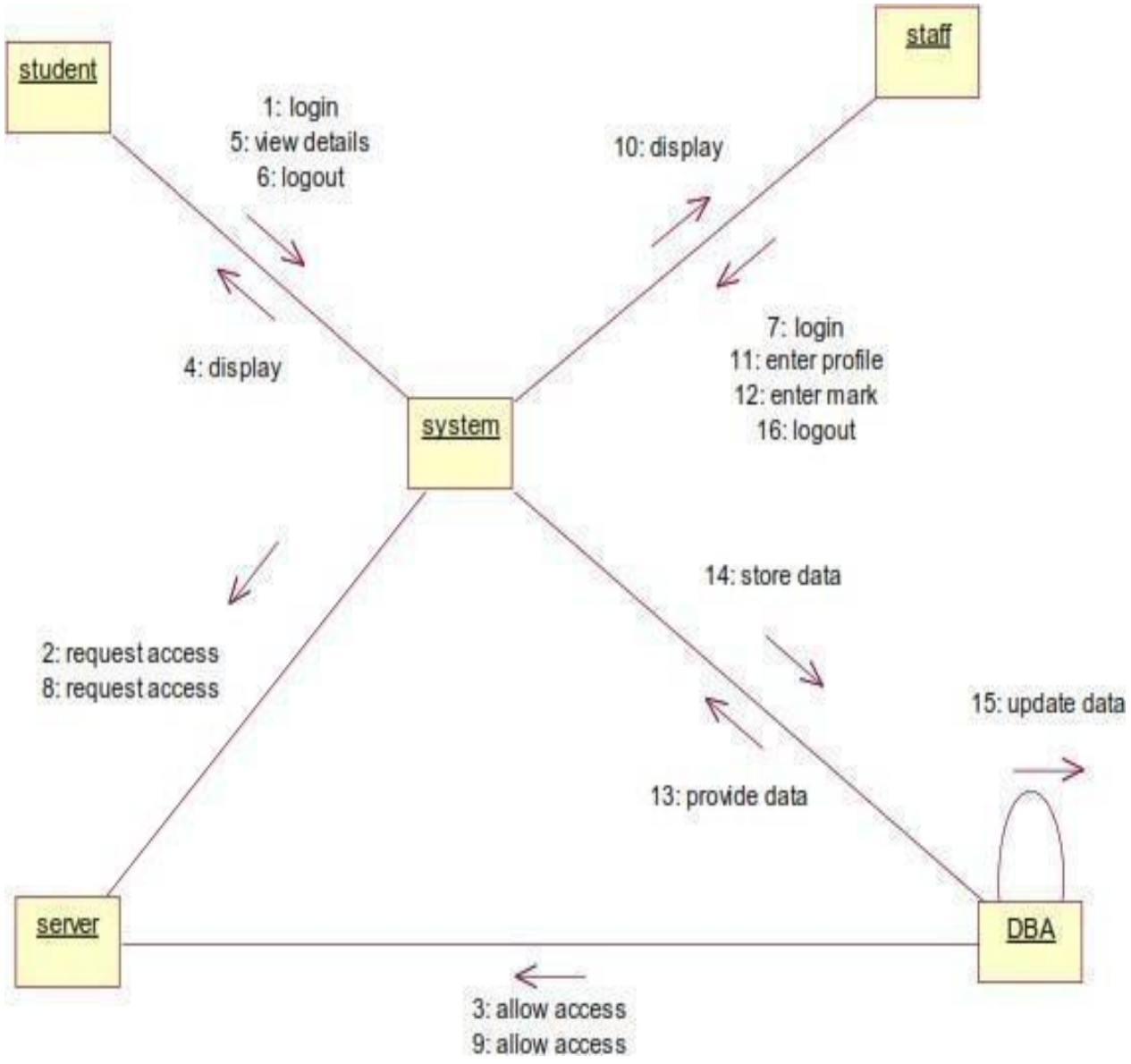
**Class diagram**



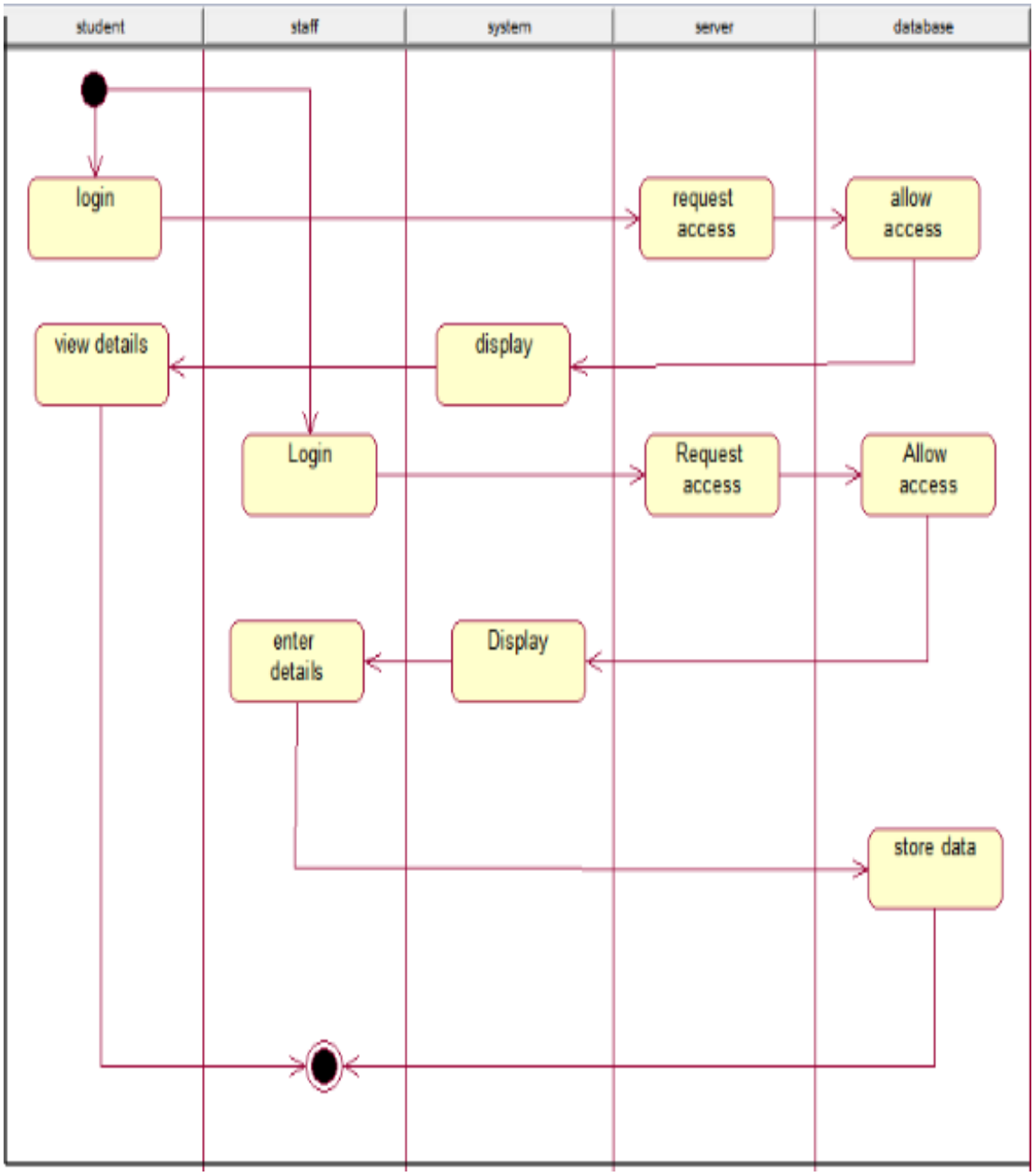
**Sequence diagram**



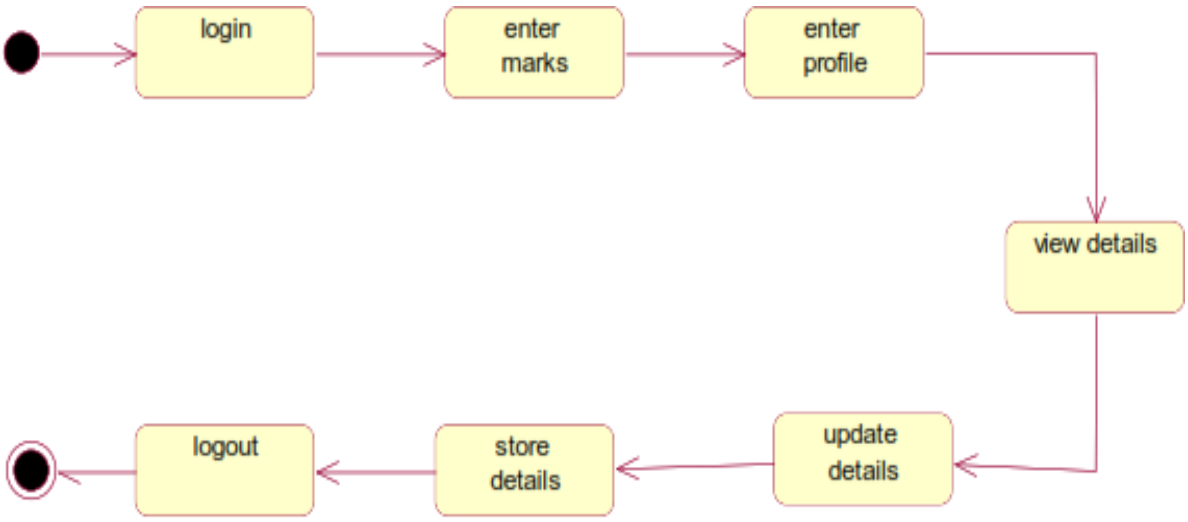
**Collaboration diagram**



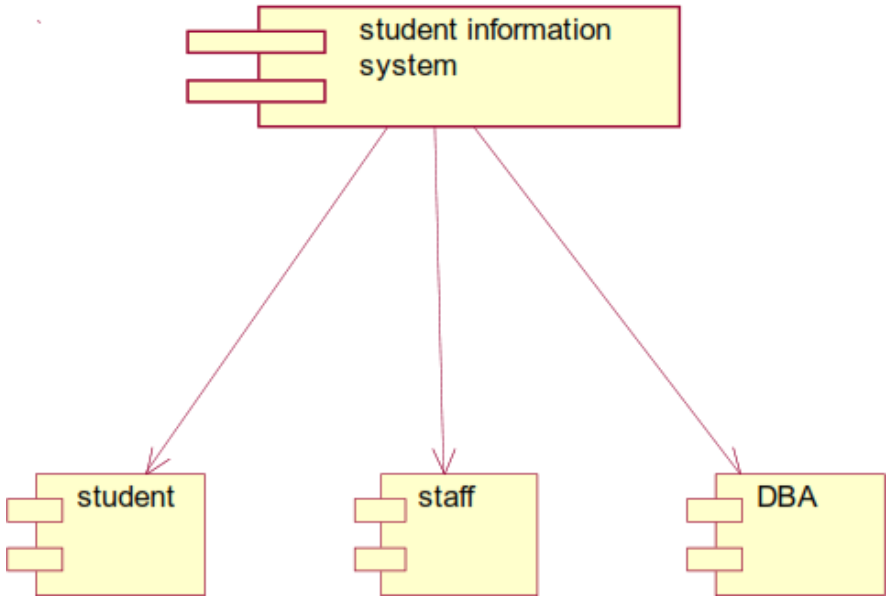
**Activity Diagram**



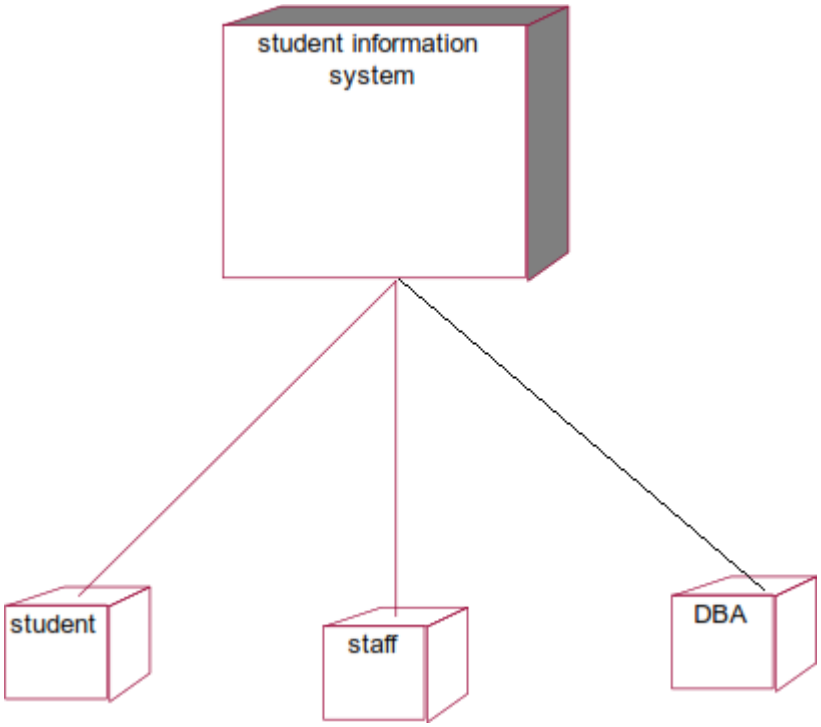
**State Diagram**




**Component diagram**



**Deployment Diagram**




**Result:**

Thus the UML diagram for Student Information System is drawn and code generated successfully.