EX.NO.1: CASE TOOLS

INTRODUCTION:

Case tools known as computer-aided software engineering tools is a kind of component-based development which allows its users to rapidly develop information systems. The main goal of case technology is the automation of the entire information systems development life cycle process using a set of integrated software tools, such as modeling, methodology and automatic code generation. Component based manufacturing has several advantages over custom development. The main advantages are the availability of high quality, defect free products at low cost and at a faster time. The prefabricated components are customized as per the requirements of the customers. The components used are pre-built, ready-tested and add value and differentiation by rapid customization to the targeted customers. However, the products we get from case tools are only a skeleton of the final product required and a lot of programming must be done by hand to get a fully finished, good product.

CHARACTERISTICS OF CASE:

- Some of the characteristics of case tools that make it better than customized development are:
    - It is a graphic oriented tool.
    - It supports decomposition of process.
- Some typical case tools are:
    - Unified modeling language
    - Data modeling tools
    - Source code generation tools

INTRODUCTION TO UML (UNIFIED MODELING LANGUAGE):

- The uml is a language for specifying, constructing, visualizing, and documenting the software system and its components.

- The uml is a graphical language with sets of rules and semantics. The rules and semantics of a model are expressed in english in a form known as ocl (object constraint language). The uml is not intended to be a visual programming language.

- However it has a much closer mappingto object-oriented programming languages, so that the best of both can be obtained

- It is a very expensive language addressing all views needed to develop and then to display system even though understand to use. Learning to apply uml effectively starts forming a conceptual mode of languages which requires learning.

Three major language elements:

- Uml basic building blocks
- Rules that dictate how this building blocks put together
- Some common mechanism that apply throughout the language the primary goals in the design of uml are:
  - Provides users ready to use, expressive visual modeling language as well so they can develop and exchange meaningful models.
  - Provide extensibility and specialization mechanisms to extend the core concepts.
  - Be independent of particular programming languages and development processes.

The uml defines nine graphical diagrams:

- Class diagram
- Use-case diagram
- Behavior diagram
- Interaction diagram
- Sequence diagram
- Collaboration diagram
- State chart diagram
- Activity diagram
- Implementation diagram
  - Component diagram
  - Deployment diagram
  -

1. **Uml class diagram:**

   The uml class diagram is also known as object modeling. It is a static analysis diagram. These diagrams show the static structure of the model. A class diagram is a connection of static model elements, such as classes and their relationships, connected as a graph to each other and to their contents.

2. **Use-case diagram:**

   The functionality of a system can be described in a number of different use-cases, each of which represents a specific flow of events in a system. It is a graph of actors, a set of use-cases enclosed in a boundary, communication, associations between the actors and the use-cases, and generalization among the use-cases.

3. **Behavior diagram**:

   It is a dynamic model unlike all the others mentioned before. The objects of an object oriented system are not static and are not easily understood by static diagrams. The behavior of the class's instance (an object) is represented in this diagram. In conjunction with the use-case diagram we may provide a script or interaction diagram to show a time line of events. It consists of sequence and collaboration diagrams.

4. **Interaction diagram**

   It is the combination of sequence and collaboration diagram. It is used to depict the flow of events in the system over a timeline. The interaction diagram is a dynamic model which shows how system behaves during dynamic execution.

5. **State chart diagram:**

   It consists of state, events and activities. State diagrams are a familiar technique to describe the behavior of a system. In most oo techniques, state diagrams are drawn for a single class to show the lifetime behavior of a single object.

6. **Activity diagram:**

   It shows organization and their dependence among the set of components. These diagrams are particularly useful in connection with workflow and in describing behavior that has a lot of parallel processing. An activity is a state of doing something: either a real-world process, or the execution of a software routine.

7. **Implementation diagram:**

   It shows the implementation phase of the systems development, such as the source code structure and the run-time implementation structure. These are relatively simple high level diagrams compared to the others seen so far. They are of two sub-diagrams, the component diagram and the deployment diagram.

8. **Component diagram:**

   These are organizational parts of a uml model. These are boxes to which a model can be decomposed. They show the structure of the code itself. They model the physical components such as source code, user interface in a design. It is similar to the concept of packages.

NOTATION ELEMENTS:

These are explanatory parts of uml model. They are boxes which may apply to describe and remark about any element in the model. They provide the information for understanding the necessary details of the diagrams.

<u>Relations in the uml:</u>

These are four kinds of relationships used in an uml diagram, they are:

- **Dependency**: it is a semantic relationship between two things in which a change one thing affects the semantics of other things. Graphically a dependency is represented by a non-continuous line.
- **Association**: it is a structural relationship that describes asset of links. A link is being connected among objects. Graphically association is represented as a solid line possibly including label.
- **Generalization**: it is a specialized relationship in which the specialized elements are substitutable for object of the generalized element. Graphically it is a solid line with hollow arrow head parent.
- **Realization**: it is a semantic relation between classifiers. Graphically it is representedas a cross between generalization and dependency relationship.

Where uml can be used:

Uml is not limited to modeling software. In fact it is expressive to model non-software such as to show in structure and behavior of health case system and to design the hardware of the system.

Conceptual model be uml:

Uml you need to form the conceptual model of uml. This requires three major elements:

- Uml basic building blocks.
- Rules that dictate how this building blocks are put together.
- Some common mechanism that apply throughout the language.

Once you have grasped these ideas, you may be able to read. Uml create some basic ones. As you gain more experience in applying conceptual model using more advanced features of this language.

Class diagram:

- A class diagram describes the type of objects in system and various kinds of relationships that exists among them.
- Class diagrams and collaboration diagramsare alternaterepresentations of object models During analysis, we use class diagram to show roles and responsibilities of entities that provide email client system behaviors design. We use to capture the structure of classes that form the email client system architecture.
- A class diagram is represented as:
  - <<class name>>
  - <<attribute 1>>
  - <<attribute>>
  - <<operation ()>>
- Relationship used: a change in one element affects the other
- Generalization: it is a kind of relationship

State chart:

- The state chart diagram made the dynamic behavior of individual classes.
- State chart shows the sequences of states that an object goes through events and state transitions.
- A state chart contains one state ‘start’ and multiple ‘end’ states.
  - **State**: a state is a condition or situation during a life of an object in which itsatisfies condition or waits for some events.
  - **Transition**: it is a relationship between two activities and between states andactivities.
  - **Start state:** a start state shows the beginning of a workflow or beginning of astate machine on a state chart diagram.
  - **End state:** it is a final or terminal state.

Activity diagram

- Activity diagram provides a way to model the workflow of a development process. We can also model this code specific information such as class operation using activity diagram. Activity diagrams can model different types of diagrams. There are various tools involved in the activity diagram.
- **Activity:** an activity represents the performance of a task on duty. It may also represent the execution of a statement in a procedure.
- **Decision:** a decision represents a condition on situation during the life of an object, which it satisfies some condition or waits for an event.
- **Start state:** it represents the condition explicitly the beginning of a workflow on an activity.
- **Object flow:** an object on an activity diagram represents the relationship between activity and object that creates or uses it.
- **Synchronization:** it enables flow to activity.

End state: an end state a final or terminal state on an activity or state chart diagram **Sequence diagram:**

- Sequence diagram is a graphical view of scenario that shows object interaction in a time based sequence what happens first what happens next. The main difference between sequence and collaboration diagram is that sequence diagram show time based interaction while collaboration diagram shows objects associated with each other.
- The sequence diagram for the e-mail client system consists of the following objectives:
- Object: an object has state, behavior and identity. An object is not based is referred to as an instance.
- The various objects in e-mail client system are:
  - **User**
  - **Website**
  - **Login**
  - **Groups**

- **Message icon**: a message icon represents the communication between objects indicating that an action will follow. The message icon is the horizontal solid arrow connecting lifelines together.

Collaboration diagram:

- Collaboration diagram and sequence diagrams are alternate representations of an interaction. A collaboration diagram is an interaction diagram that shows the order of messages that implement an operation or a transaction.

CONCLUSION: Thus the study for case tools was done.

EX.NO.2: PASSPORT AUTOMATION SYSTEM

AIM: To create an automated system to perform the passport process.

(I) PROBLEM STATEMENT

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. 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.

(II) SOFTWARE REQUIREMENT SPECIFICATION:

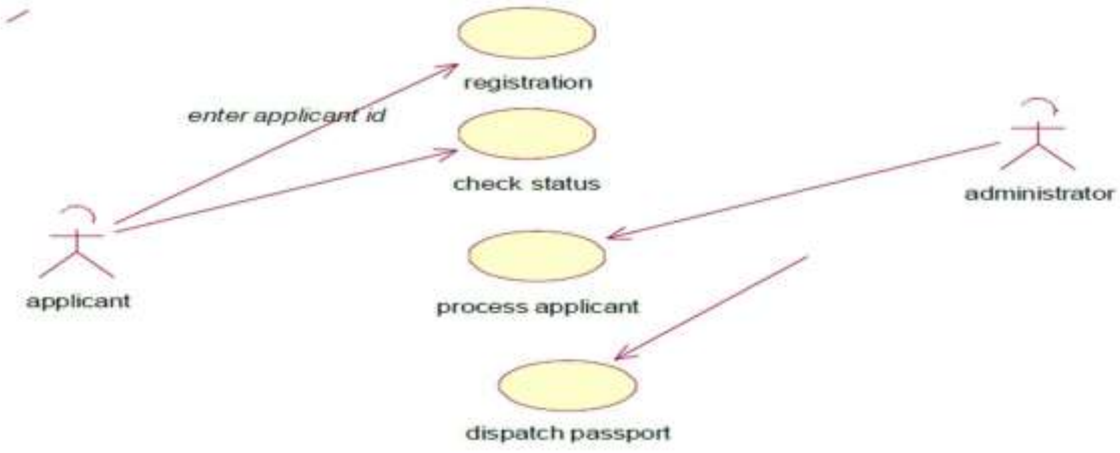
2.1 software Interface

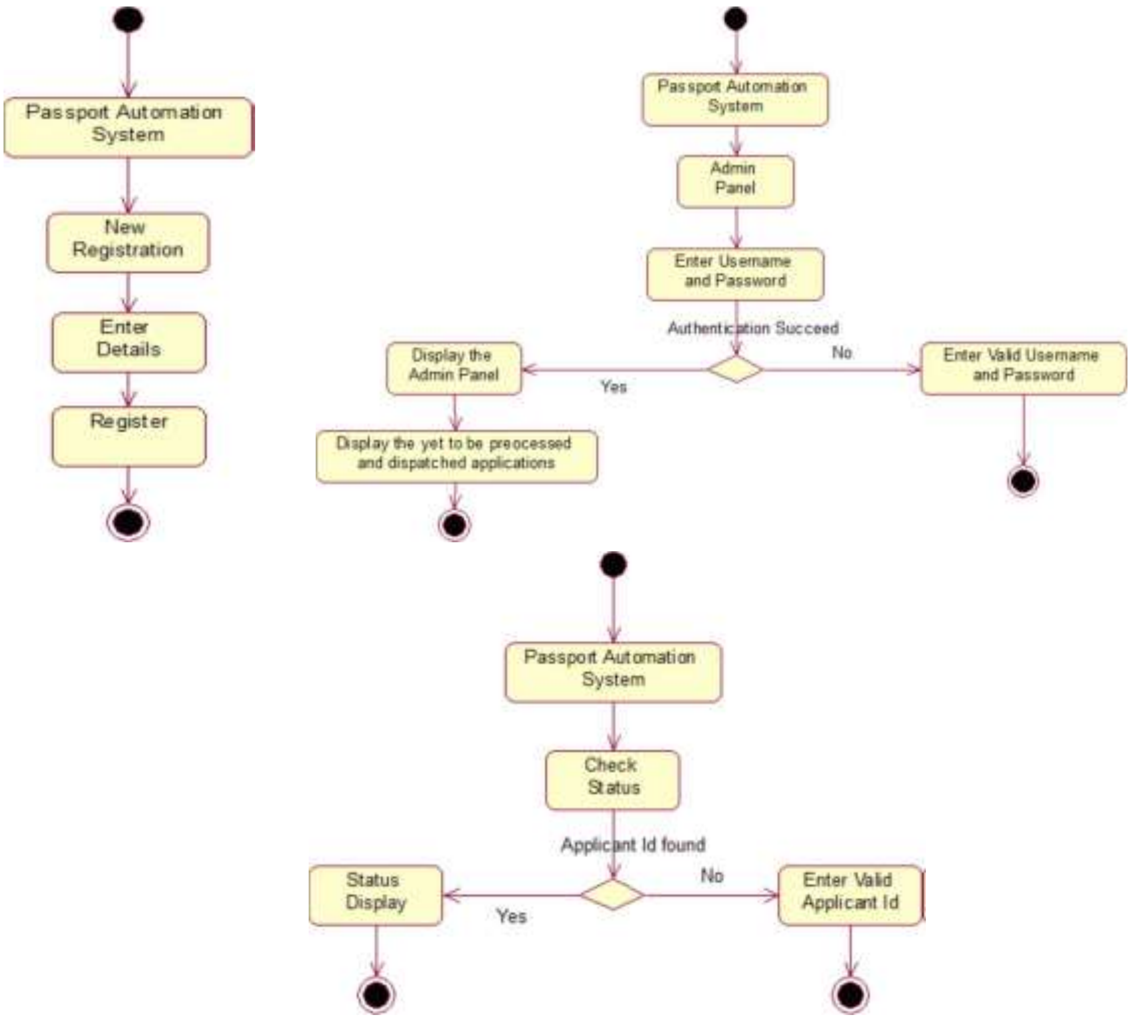
- Front end client - the applicant and administrator online interface is built using jsp and html. The administrators's local interface is built using java.
- Web server - glassfish application server(oracle corporation).
- Back end - oracle database.

2.2 hardware interface

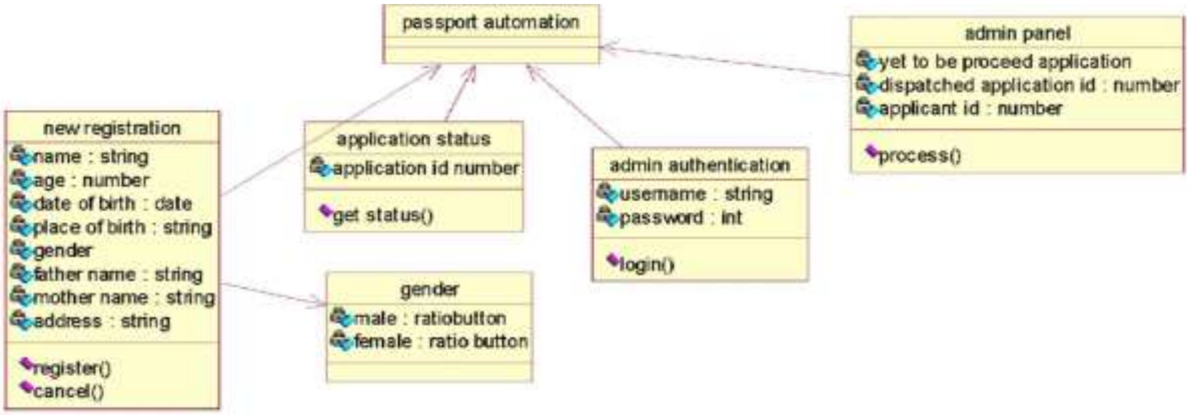
The server is directly connected to the client systems. The client systems have access to the database in the server.

(III) USE-CASE DIAGRAM:




Passport Automation System
New Registration
Enter Details
Register
Passport Automation System
Admin Panel
Enter Username and Password
Authentication Succeed
Display the Admin Panel
Yes
No
Enter Valid Username and Password
Display the yet to be preocessed and dispatched applications
Passport Automation System
Check Status
Applicant Id found
Status Display
Yes
No
Enter Valid Applicant Id

(V) CLASS DIAGRAM:



RESULT: thus, the mini project for passport automation system has been successfully executed and codes are generated.

EX.NO.3: BOOK BANK SYSTEM

AIM: to create a system to perform book bank operation

(I) PROBLEM STATEMENT:

A book bank lends books and magazines to member, who is registered in the system. Also, it handles the purchase of new titles for the book bank. Popular titles are brought into multiple copies. Old books and magazines are removed when they are out or date or poor in condition. A member can reserve a book or magazine that is not currently available in the book bank, so that when it is returned or purchased by the book bank, that person is notified. The book bank can easily create, replace and delete information about the tiles, members, loans and reservations from the system.

(II) SOFTWARE REQUIREMENTS SPECIFICATION:

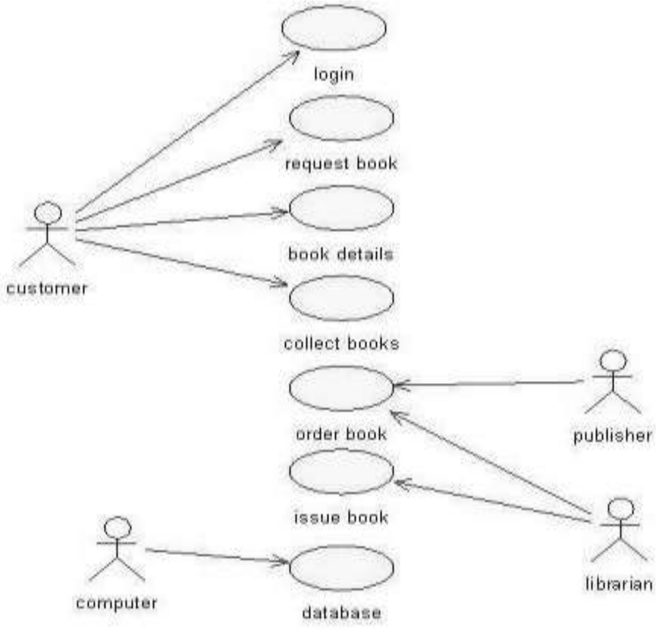
2.1 software interface

- Front end client - the student and librarian online interface is built using jsp and html. The librarians local interface is built using java.
- Web server - glassfish application server (oracle corporation).
- Back end - oracle database

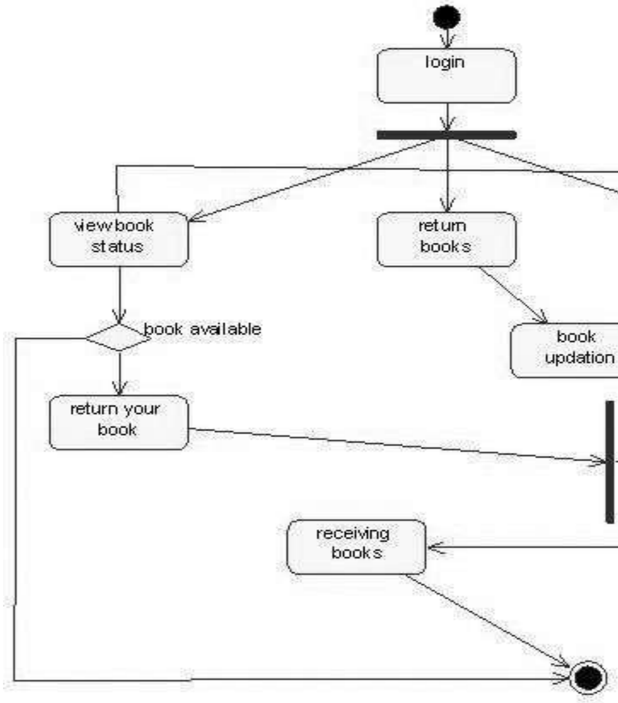
2.2 hardware interface

The server is directly connected to the client systems. The client systems have access to the database in the server.

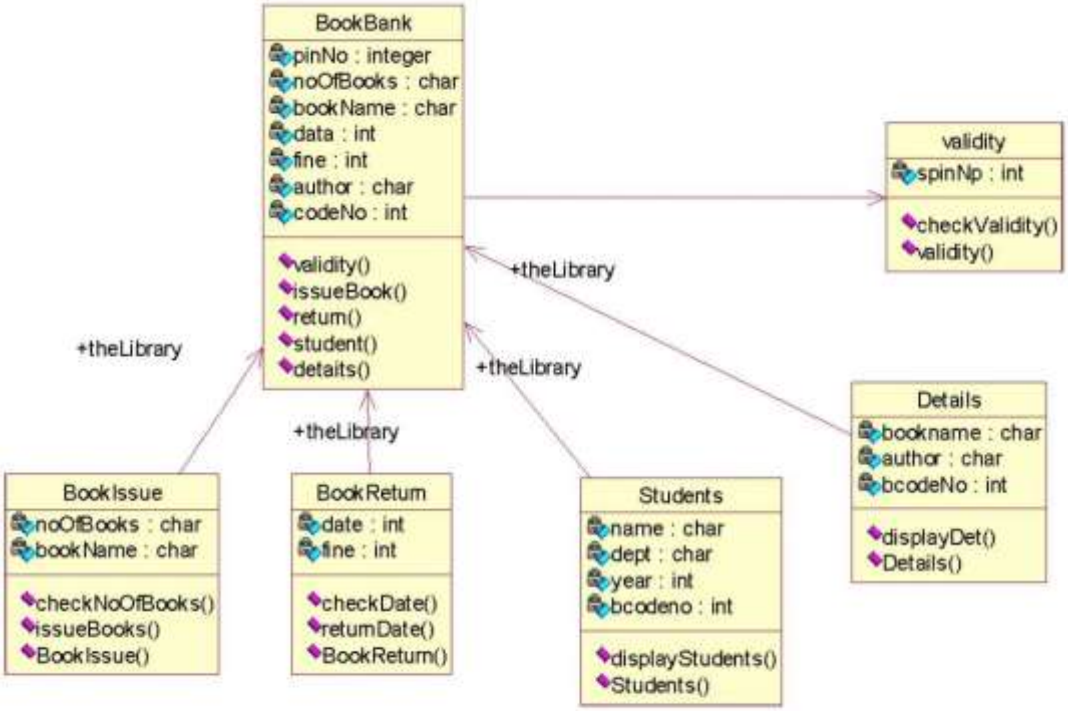
(III) USE-CASE DIAGRAM:



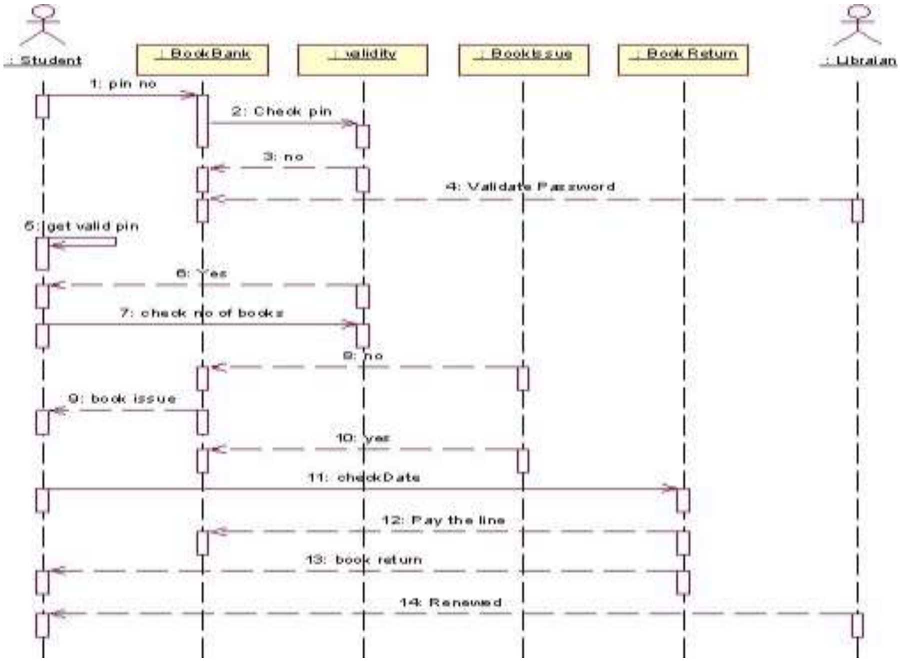
(IV) ACTIVITY DIAGRAM:

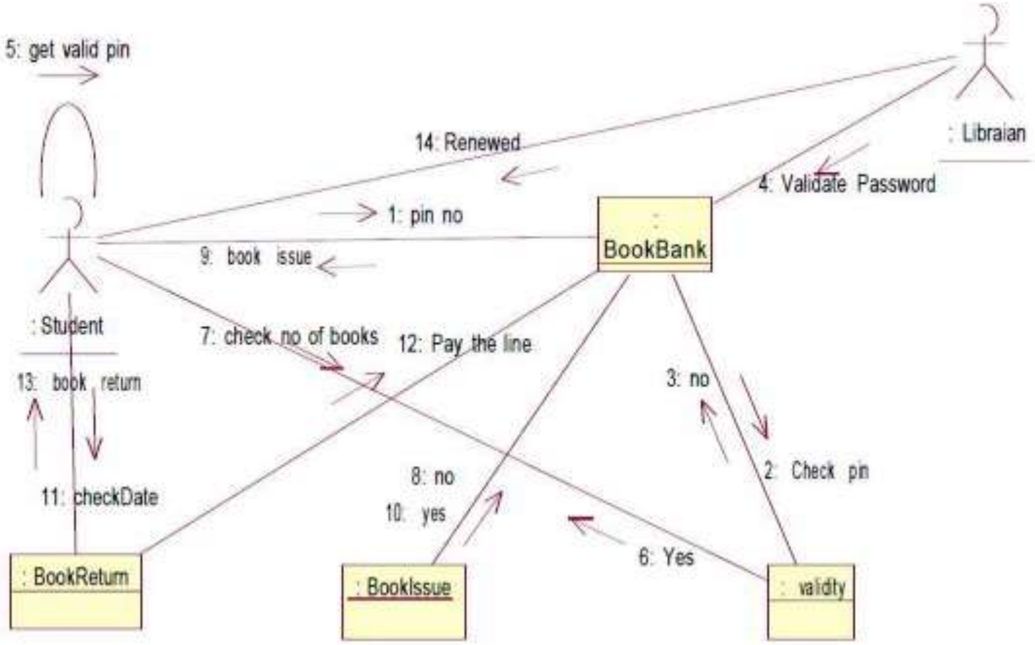


(V) CLASS DIAGRAM:



(VI) SEQUENCE DIAGRAM:





RESULT: thus, the mini project for book bank system has been successfully executed andcodes are generated.

EX.NO.4: EXAM REGISTRATION SYSTEM

AIM: to create a system to perform the exam registration system.

(I) PROBLEM STATEMENT:

Exam registration system.is used in the effective dispatch of registration form to all of the students. This system adopts a comprehensive approach to minimize the manual work and schedule resources, time in a cogent manner. The core of the system is to get the online registration form (with details such as name, reg.no etc.,) filled by the student whose testament is verified for its genuineness by the exam registration system with respect to the already existing information in the database.

(II) SOFTWARE REQUIREMENT SPECIFICATION:

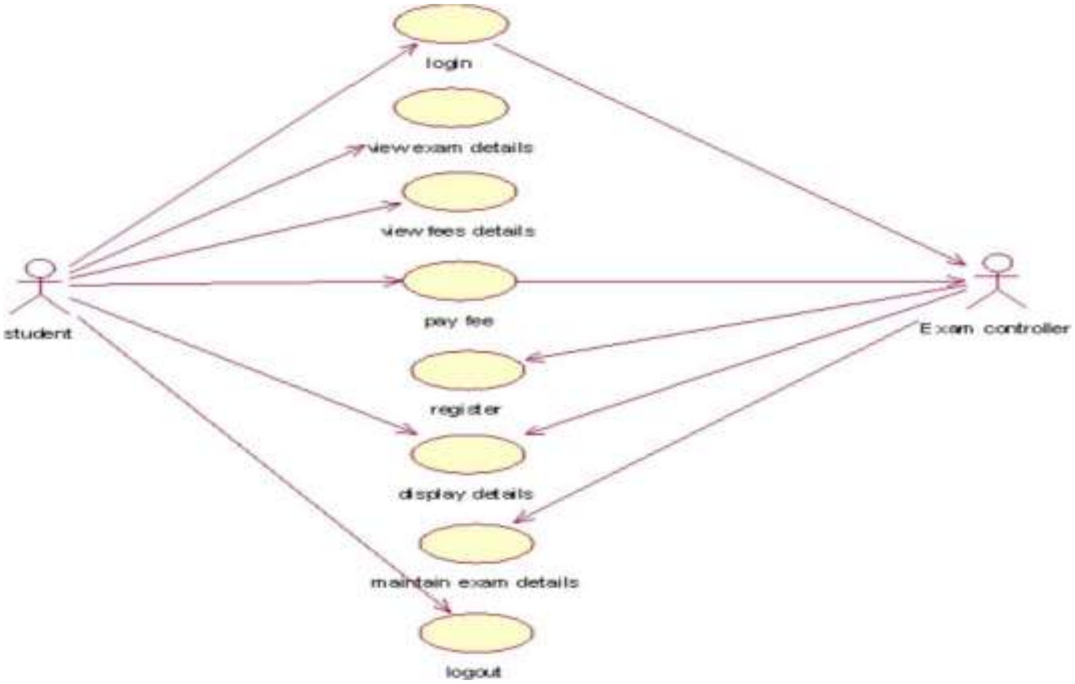
2.1 software interface

- Front end client - the student and controller online interface is built using jsp and html. The exam controller's local interface is built using java.
- Web server - glassfish application server(sqlcorporation).
- Back end - sql database.

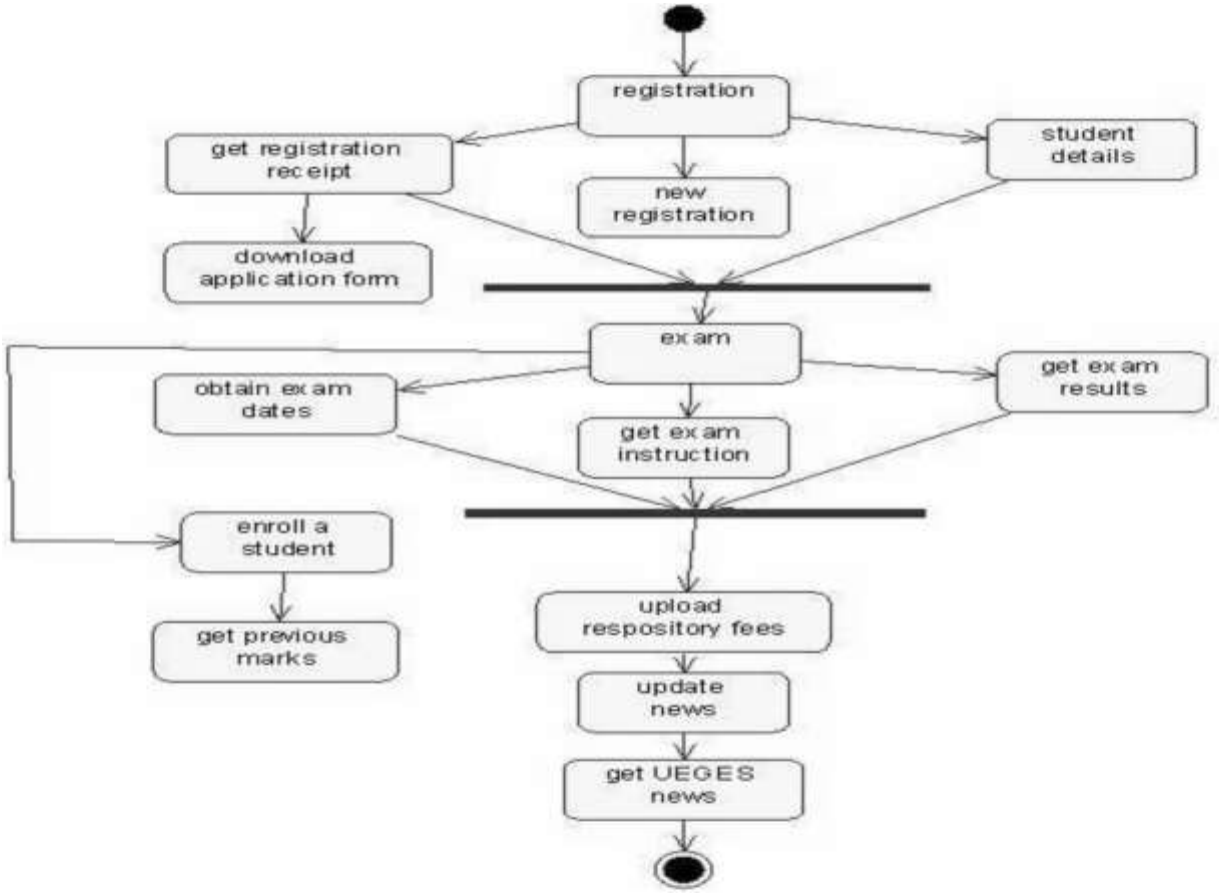
2.2 hardware interface

The server is directly connected to the client systems. The client systems have access to the database in the server.

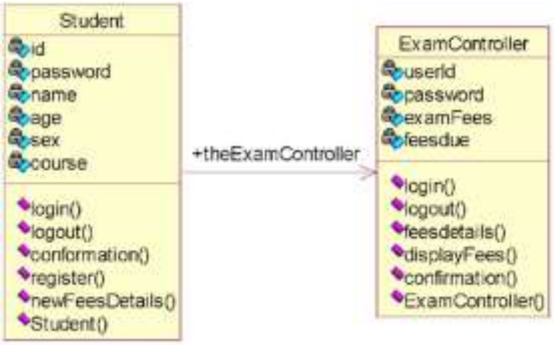
(III) USECASE DIAGRAM:



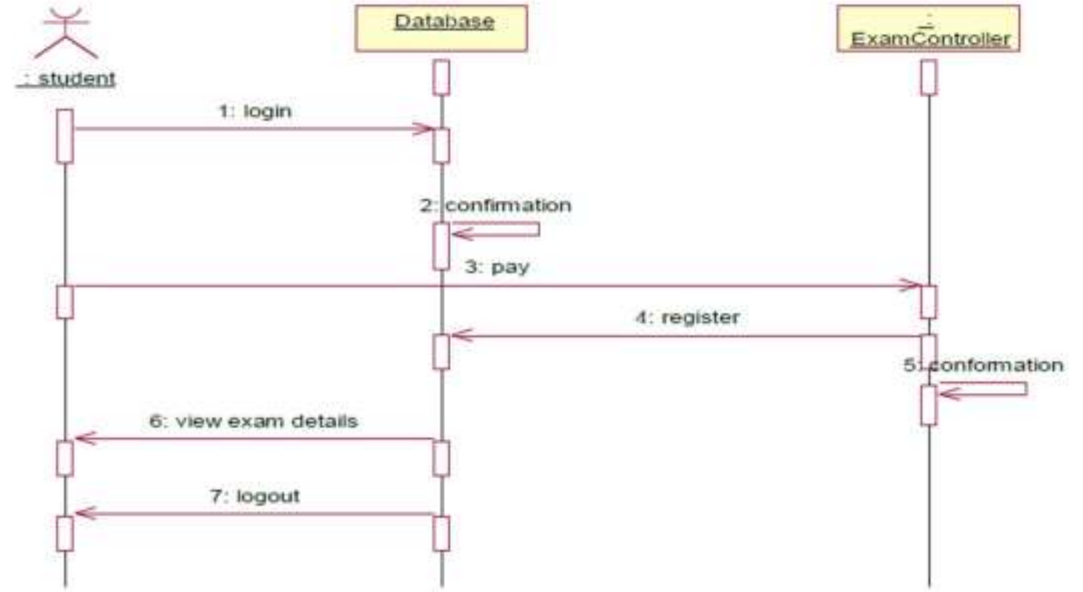
(IV) ACTIVITY DIAGRAM:

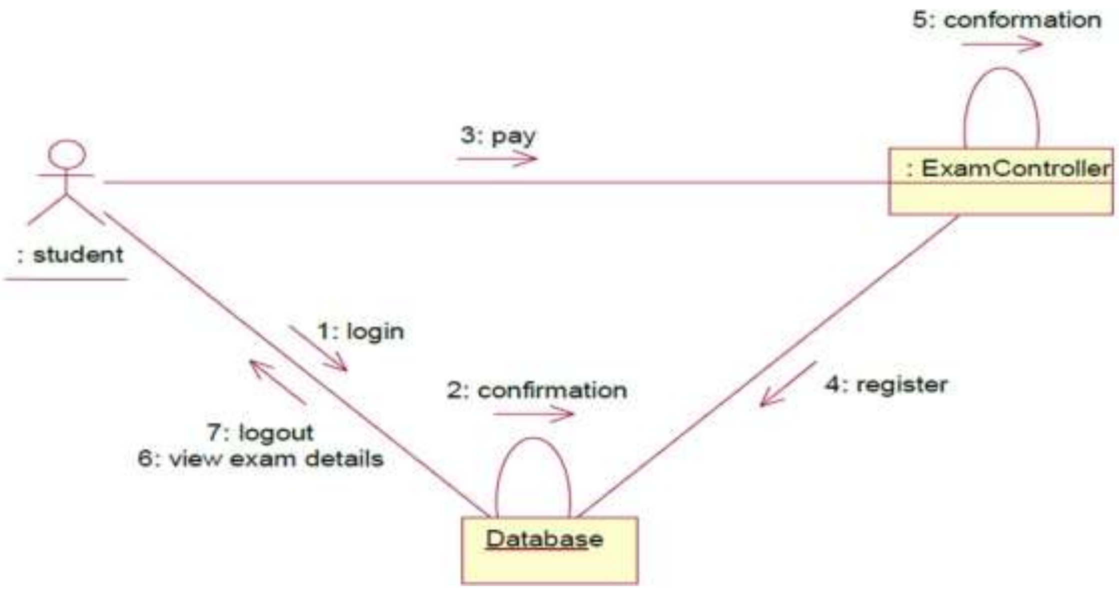


(V) CLASS DIAGRAM:



(VI) INTERACTION DIAGRAM:





RESULT: thus, the mini project for exam registration system has been successfully executed and codes are generated.

EX.NO.5: STOCK MAINTENANCE

AIM: to create a system to perform the stock maintenance

(I) PROBLEM STATEMENT

The stock maintenance system must take care of sales information of the company and must analyze the potential of the trade. It maintains the number of items that are added or removed.the sales person initiates this use case. The sales person is allowed to update information and view the database.

(II) SOFTWARE REQUIREMENT SPECIFICATION

Purpose

The entire process of stock maintenance is done in a manual manner considering the fact that the number of customers for purchase is increasing every year, a maintenance system is essential to meet the demand. So this system uses several programming and database techniques to elucidate the work involved in this process.

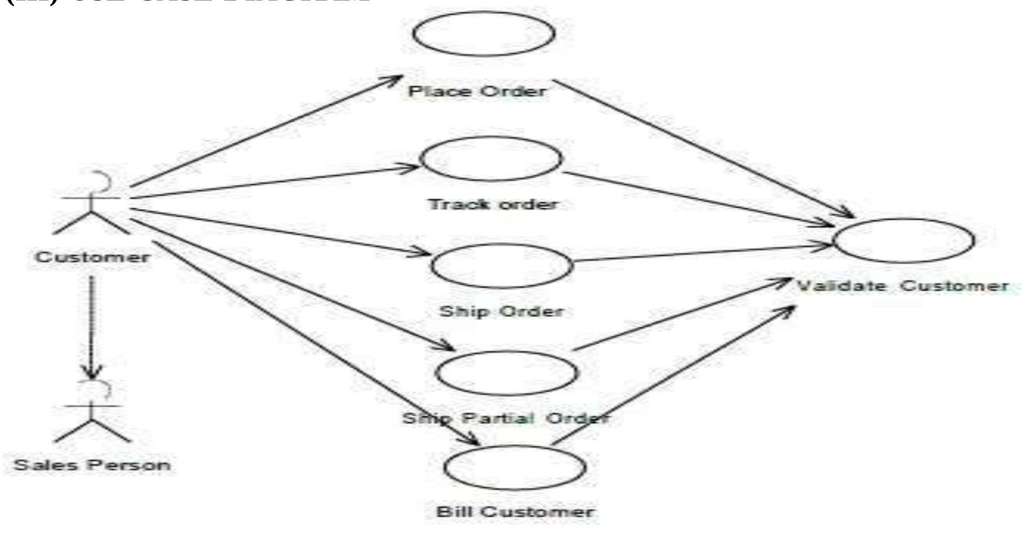
Scope

- The system provides an interface to the customer where they can fill in orders for the item needed.
- The sales person is concerned with the issue of items and can use this system.
- Provide a communication platform between the customer and the sales person.

Tools to be used

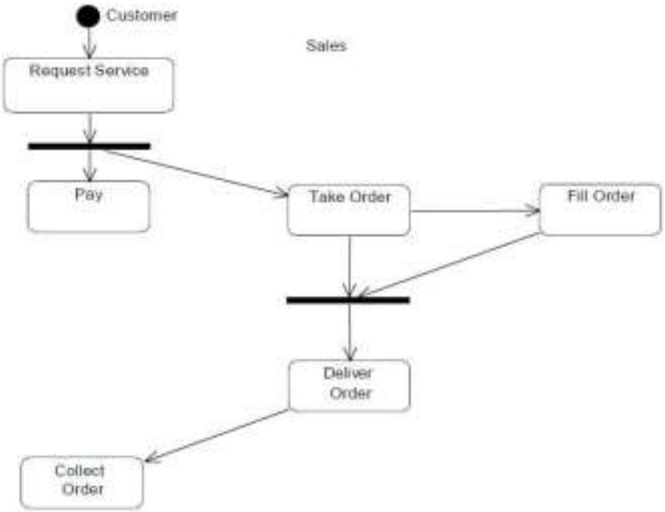
- Eclipse ide (integrated development environment)
- Rational rose tool (for developing uml patterns)

(III) USE CASE DIAGRAM

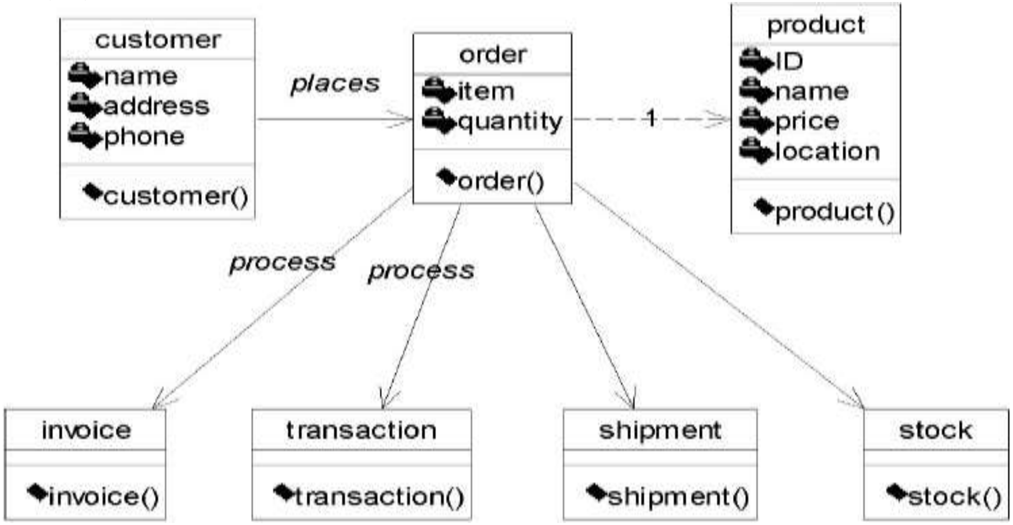


COLLABORATION DIAGRAM

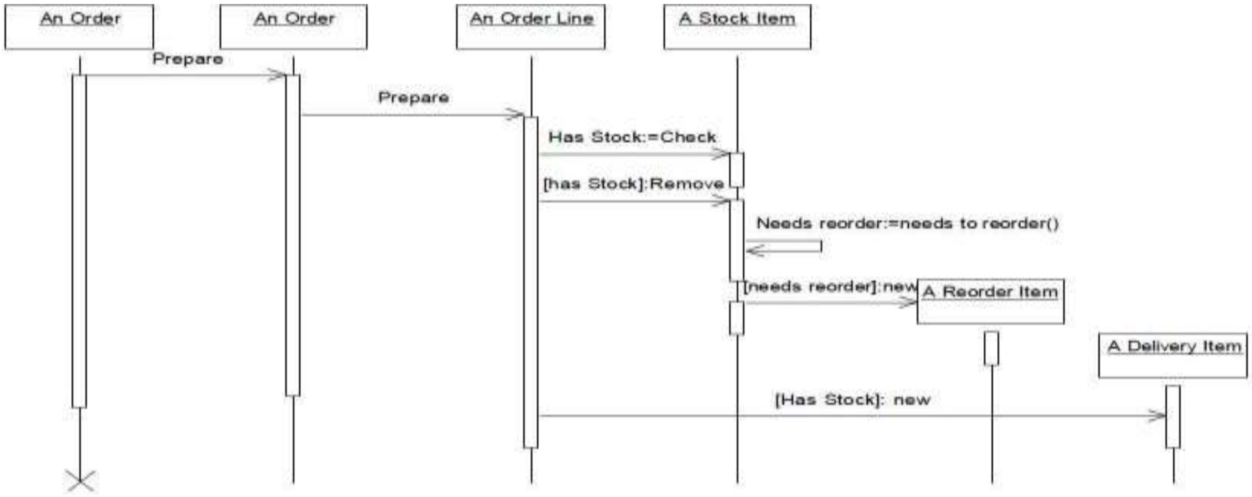
ACTIVITY DIAGRAM



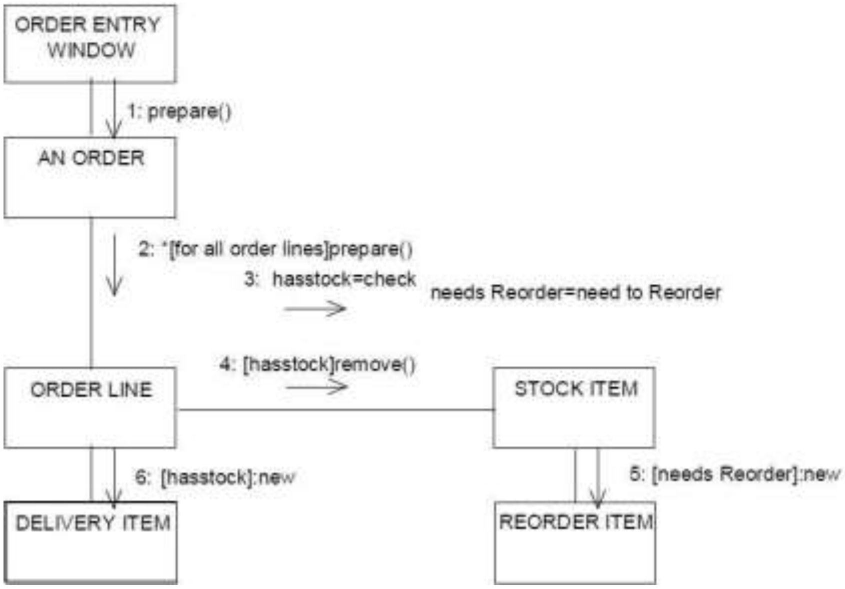
(IV) CLASS DIAGRAM



(V) UML INTERACTION DIAGRAMS



COLLABORATION DIAGRAM



RESULT: thus, the mini project for stock maintenance system has been successfullyexecuted and codes are generated.

EX.NO.6: ONLINE COURSE RESERVATION SYSTEM

AIM: to design an object oriented model for course reservation system.

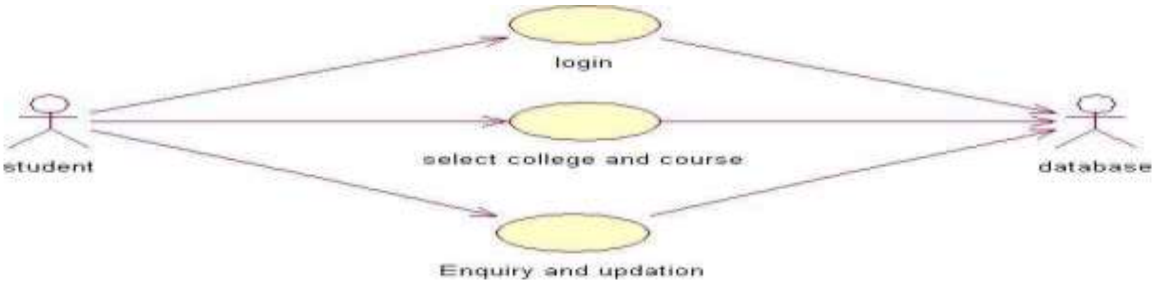
(I) PROBLEM STATEMENT

- Whenever the student comes to join the course he/she should be provided with the list of course available in the college.
- The system should maintain a list of professor who is teaching the course. At the end of the course the student must be provided with the certificate for the completion of the course.

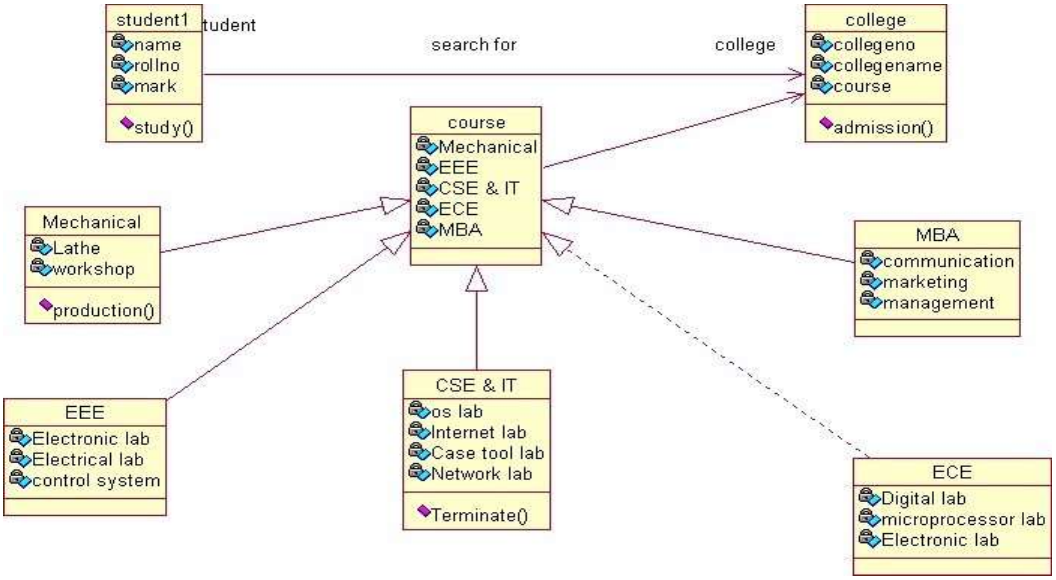
(II) SYSTEM REQUIEMENT SPECIFICATION

- Objectives
  - The main purpose of creating the document about the software is to know about the list of the requirement in the software project part of the project to be developed.
  - In this specification, we define about the system requirements that are about from the functionality of the system.
- Scope
  - It specifies the requirement to develop a processing software part that completes the set of requirement.
  - It tells the users about the reliability defined in usecase specification
- Functionality
  - Many members of the process line to check for its occurrences and transaction, we are have to carry over at sometimes
- Usability
  - The user interface to make the transaction should be effectively
- Performance
  - It is the capability about which it can performed function for many user at sometimes efficiently (ie) without any ever occurrences
- Reliability
  - The system should be able to the user through the day to day transaction.
  -

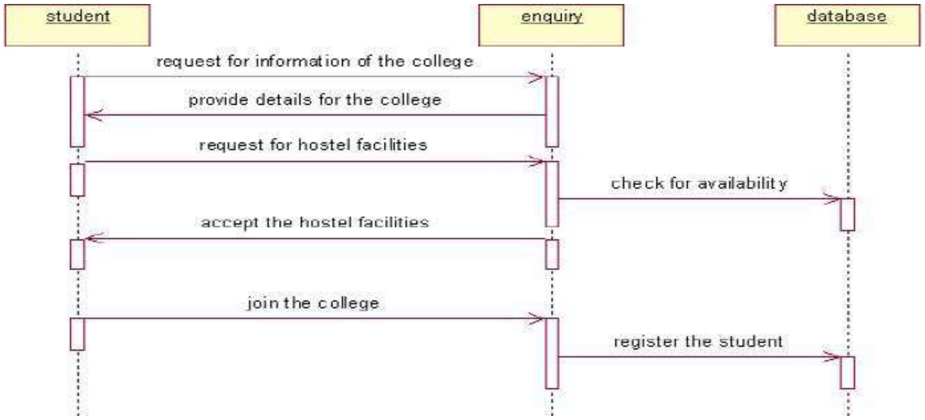
(III) USECASE DIAGRAM

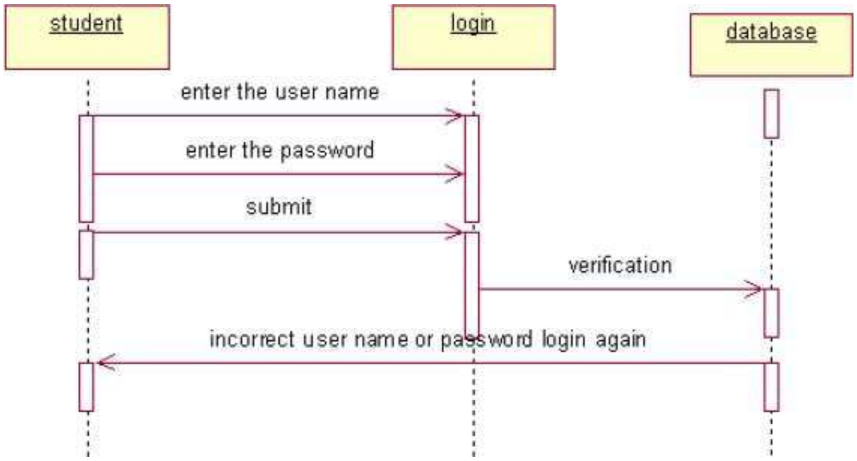


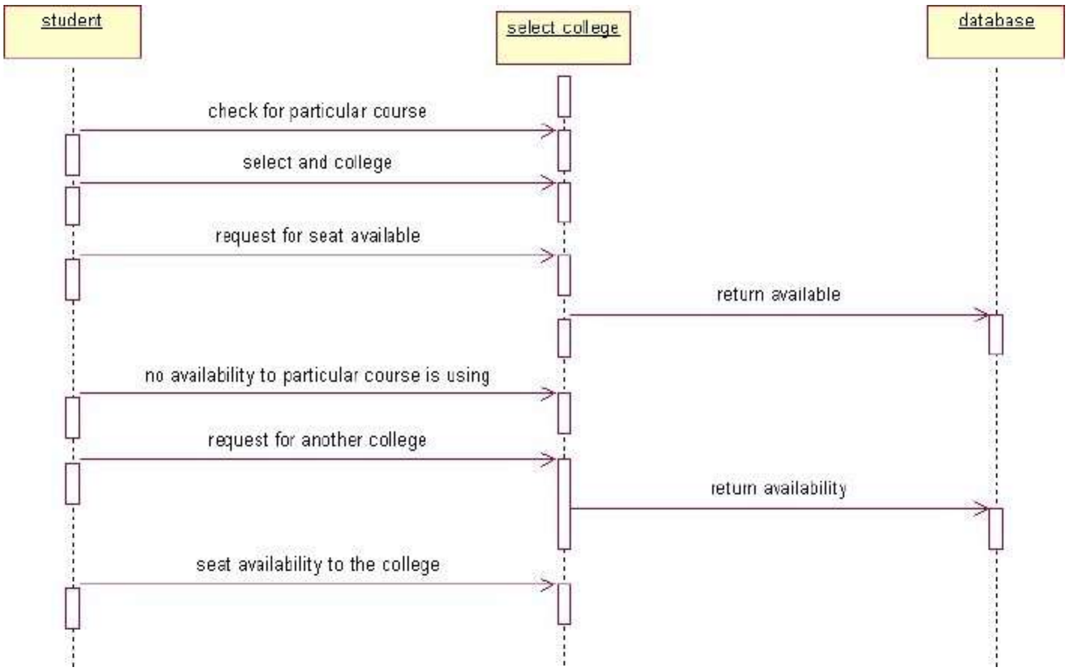
CLASS DIAGRAM:



SEQUENCE DIAGRAM

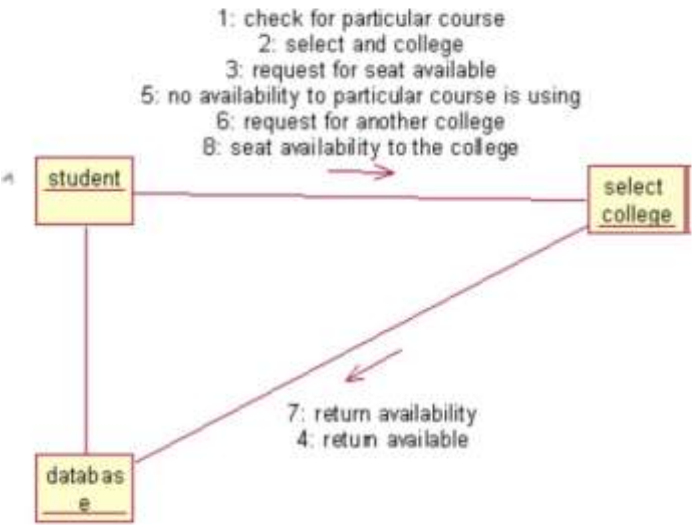

student
enquiry
database
request for information of the college
provide details for the college
request for hostel facilities
check for availability
accept the hostel facilities
join the college
register the student





student
select college
database
check for particular course
select and college
request for seat available
return available
no availability to particular course is using
request for another college
return availability
seat availability to the college

COLLABORATION DIAGRAM



1: check for particular course
2: select and college
3: request for seat available
5: no availability to particular course is using
6: request for another college
8: seat availability to the college
student
select college
7: return availability
4: return available
database

RESULT: Thus the mini project for online course reservation system has beensuccessfully executed and codes are generated.

EX.NO.7: AIRLINE/RAILWAY RESERVATION SYSTEM

AIM: To develop the airline/railway reservation system.

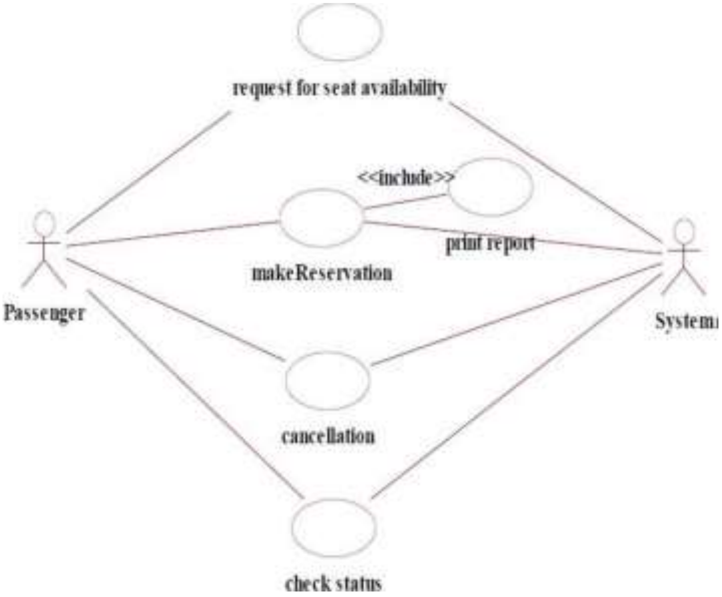
(I) PROBLEM ANALYSIS AND PROJECT PLANNING

In the airline/railway reservation system the main process is a applicant have to login the database then the database verifies that particular username and password then the user must fill the details about their personal details then selecting the flight and the database books the ticket then send it to the applicant then searching the flight or else cancelling the process.

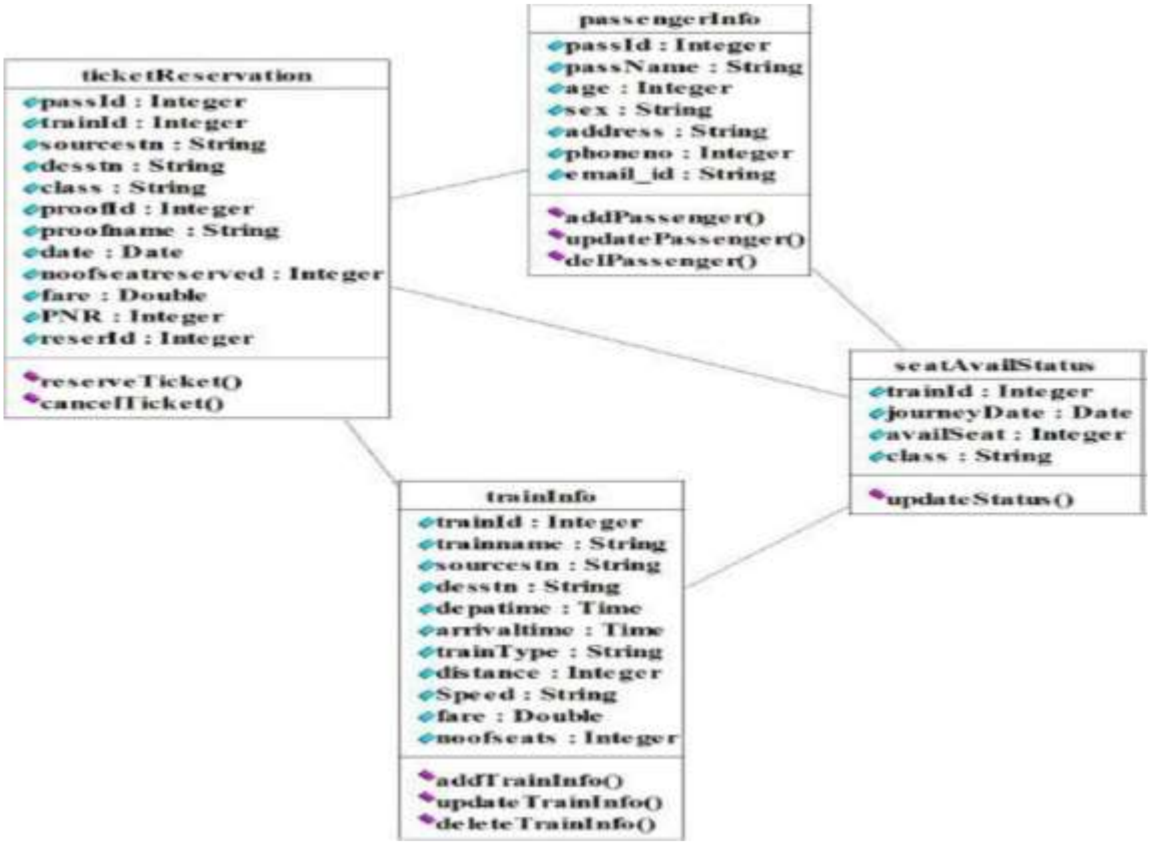
(II) OVERALL DESCRIPTION

- Functionality
  - The database should be act as an main role of the e-ticketing system it can be booking the ticket in easy way.
- Usability
  - The user interface makes the credit card processing system to be efficient.
- Performance
  - It is of the capacities about which it can perform function for many users at the same times efficiently that are without any error occurrence.
- Reliability
  - The system should be able to process the user for their corresponding request.

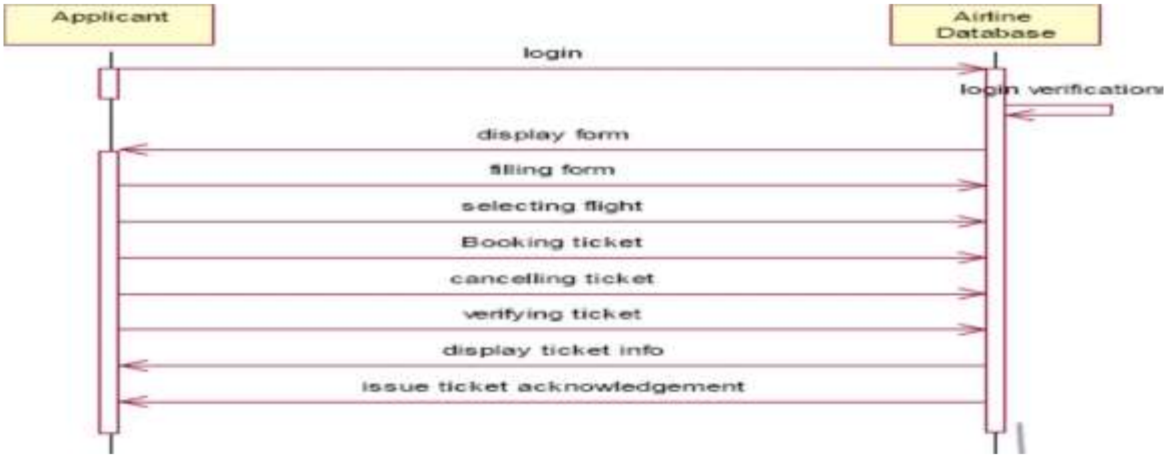
(III) USE CASE DIAGRAM



(IV) CLASS DIAGRAM



SEQUENCE DIAGRAM



RESULT: Thus the mini project for airline/railway reservation system has beensuccessfully executed and codes are generated.

EX.NO.8: SOFTWARE PERSONNEL MANAGEMENT SYSTEM

AIM: to implement a software for software personnel management system.

(I) PROBLEM STATEMENT:

Human resource management system project involves new and/or system upgrades of software of send to capture information relating to the hiring termination payment and management of employee. He uses system to plan and analyze all components and performance of metrics driven human resource functions, including recruitment, attendance, compensation, benefits and education. Human resources management systems should align for maximum operating efficiency with financial accounting operations customer relationship management, security and business lines as organization.

(II) SOFTWARE REQUIREMENT SPECIFICATION:

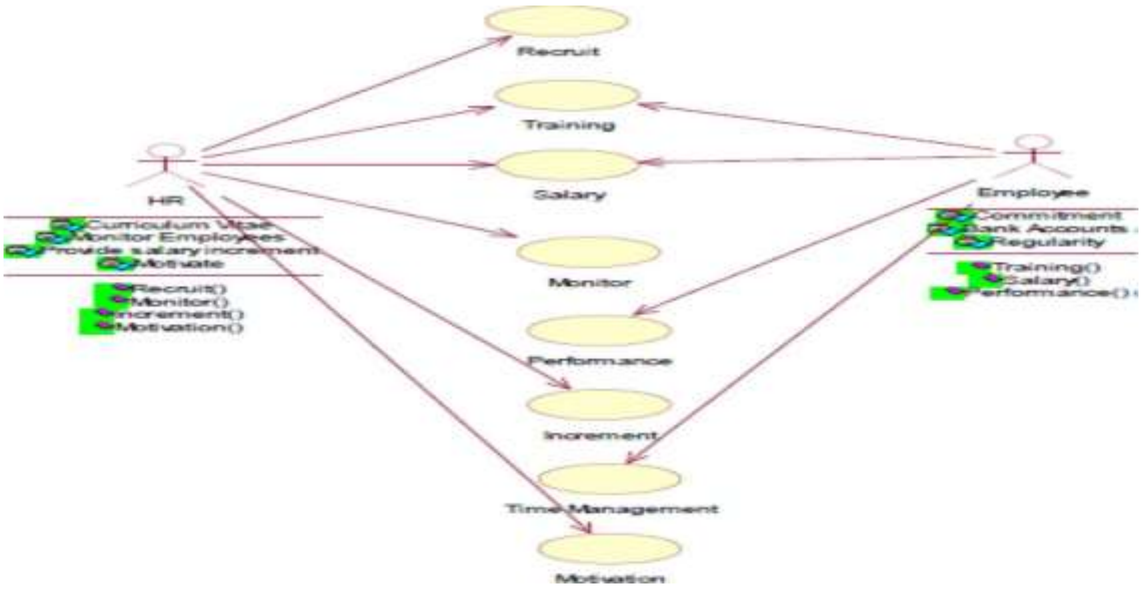
2.1 software interface

- Front end client - the applicant and administrator online interface is built using jsp and html. The hr's local interface is built using java.
- Server - glassfish application server(sql corporation).
- Back end - sql database.

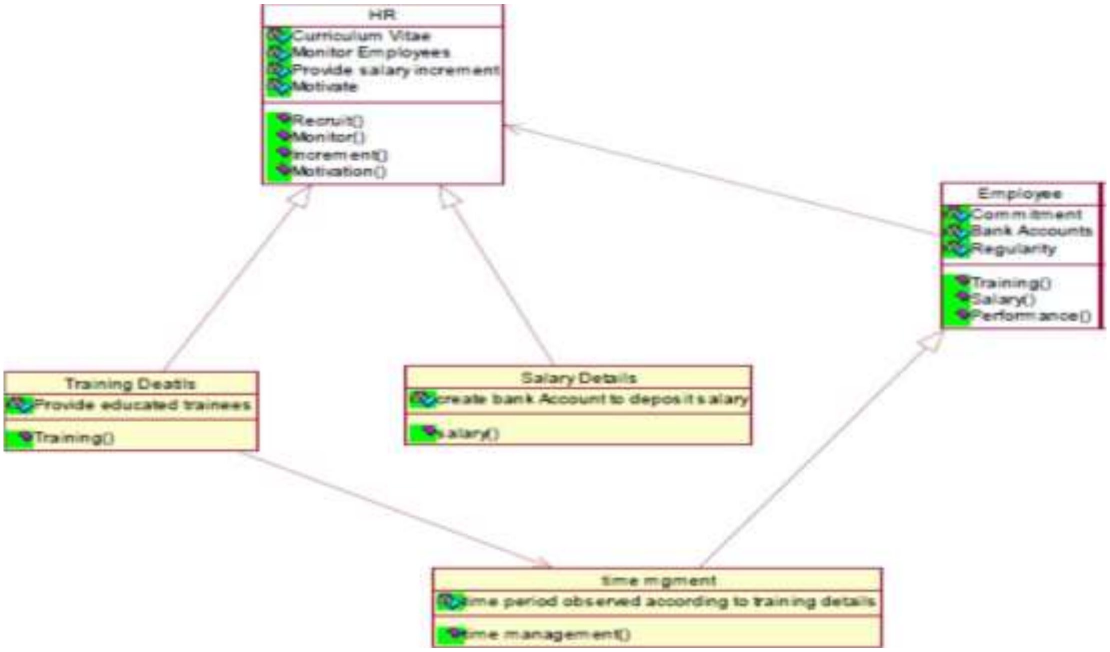
2.2 hardware interface

The server is directly connected to the client systems. The client systems have access to the database in the server.

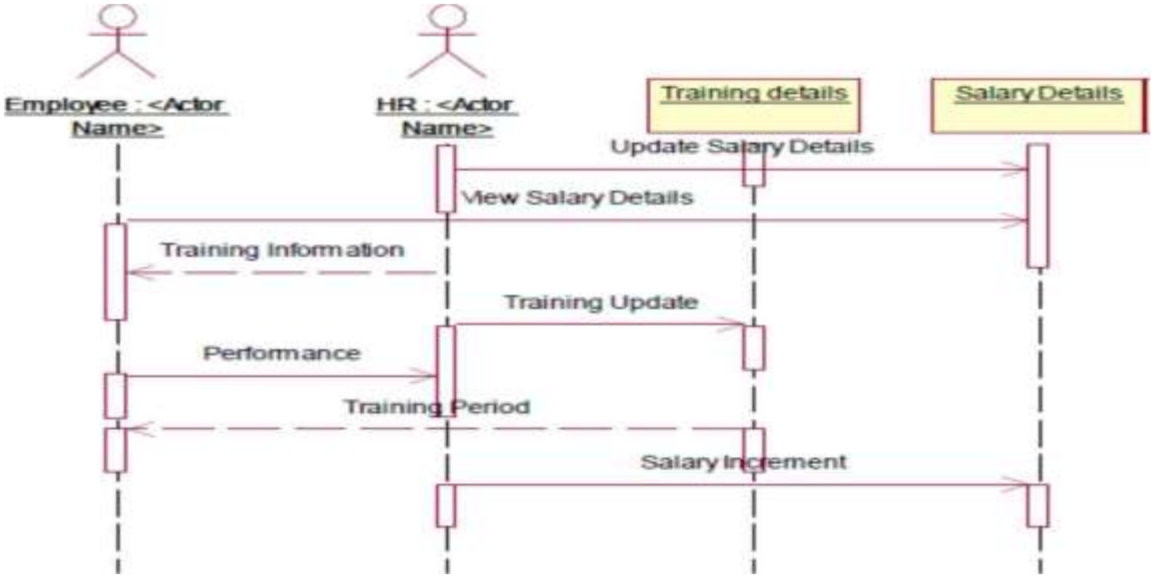
(III) USECASE DIAGRAM:



(V) CLASS DIAGRAM:



(VI) INTERACTION DIAGRAM:



RESULT: Thus the mini project for software personnel management system has been successfully executed and codes are generated.

. EX.NO.9: CREDIT CARD PROCESSING

AIM: to create a system to perform the credit card processing

(I) PROBLEM STATEMENT:

Credit card processing through offline involves the merchant collecting order information (including credit card numbers), storing this in a database on your site, and entering it using their on-site merchant credit card processing system. Takes time to manually enter credit card information for each order. This solution creates following cons:

(II) SOFTWARE REQUIREMENT SPECIFICATION:

Product Perspective

This solution involves signing up for a free business account. Once this is done and the e-commerce site is properly configured, you can accept payments from visa, mastercard, amex, and discover cards payments.

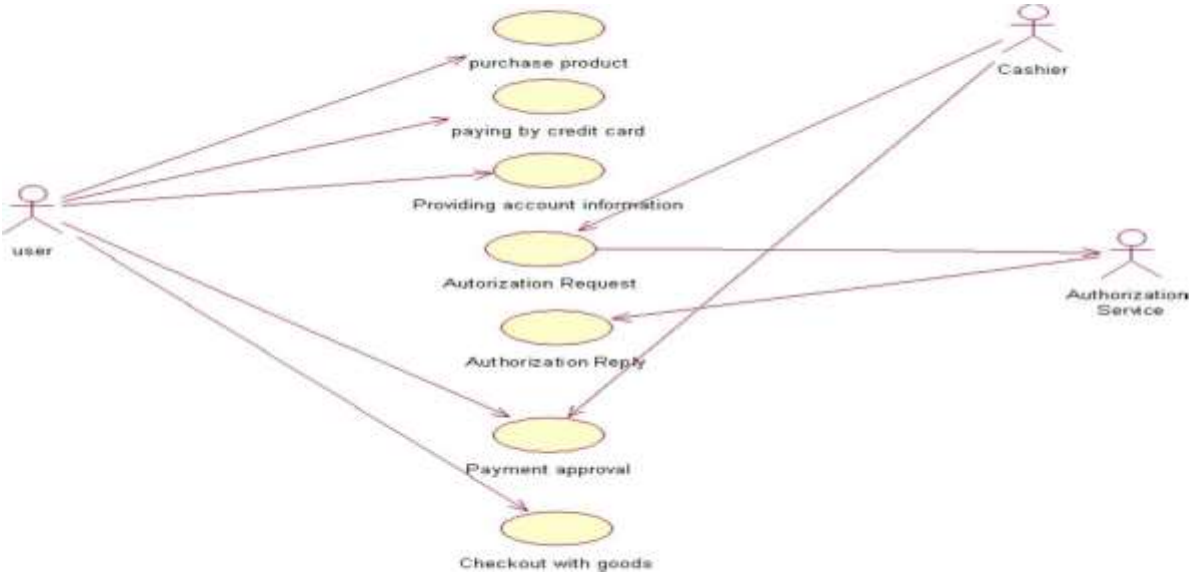
Software interface

- Front end client - the applicant and administrator online interface is built using jsp and html. The administrators's local interface is built using java.
- Web server - glassfish application server(sql corporation).
- Back end - sql database.

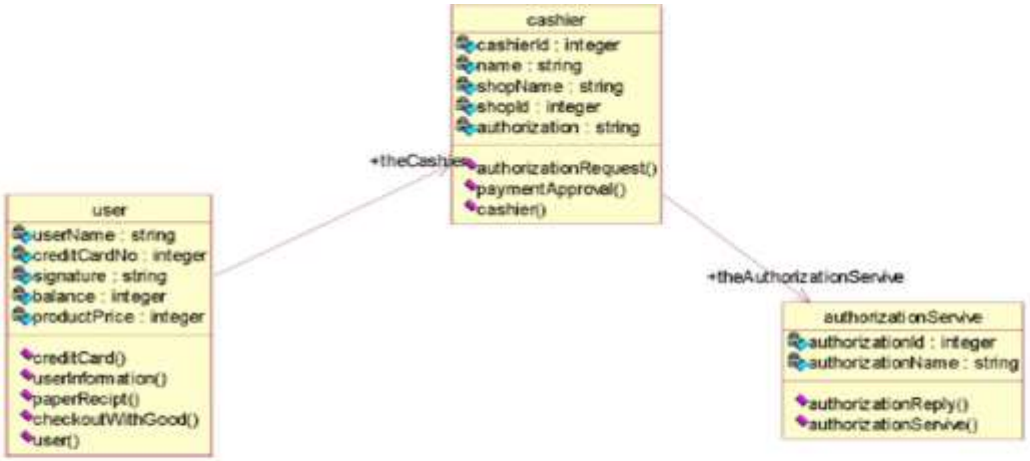
Hardware interface

The server is directly connected to the client systems. The client systems have access to the database in the server.

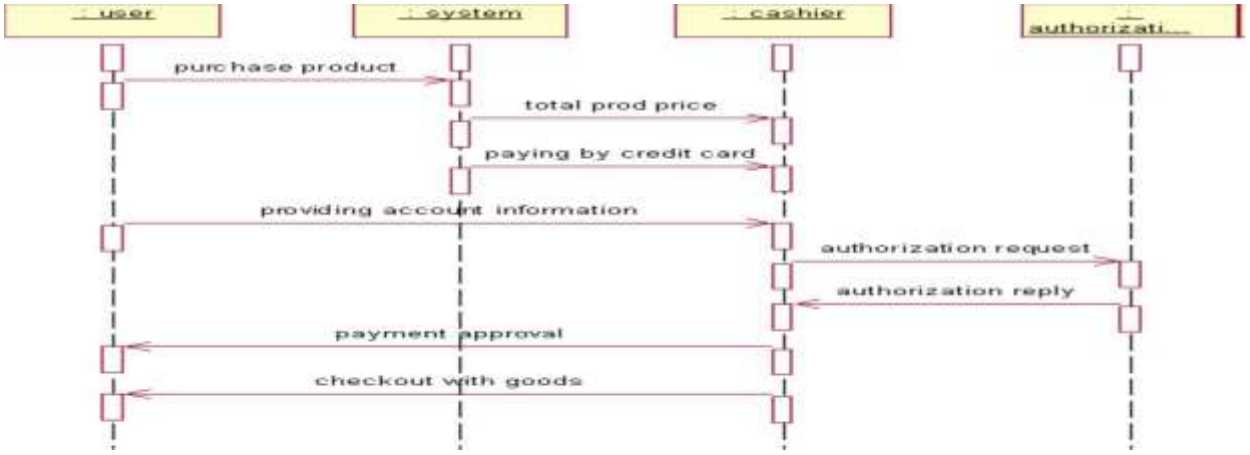
(III) USECASE DIAGRAM: USE-CASE NAME: PAYMENT APPROVAL

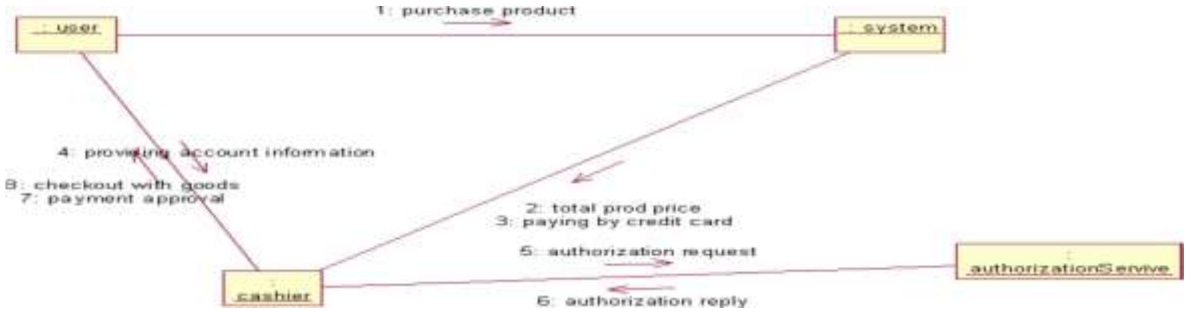


(IV) CLASS DIAGRAM:



(V) INTERACTION DIAGRAM:





RESULT: Thus the mini project for credit card processing system has been successfully executed and codes are generated.

EX.NO.10: BOOK MANAGEMENT SYSTEM

AIM: to create a system to perform e-book management system.

(I) PROBLEM STATEMENT:

An e-book lends books and magazines to member, who is registered in the system. Also it handles the purchase of new titles for the book bank. Popular titles are brought into multiple copies. Old books and magazines are removed when they are out or date or poor in condition. A member can reserve a book or magazine that is not currently available in the book bank, so that when it is returned or purchased by the book bank, that person is notified. The book bank can easily create, replace and delete information about the tiles, members, loans and reservations from the system.

(II) SOFTWARE RESOURCE SPECIFICATION:

Overall description

It will describe major role of the system components and inter-connections.

Product perspective

The ors acts as an interface between the user and the 'e-book manager'. This system tries to make the interface as simple as possible and at the same time not risking the security of data stored in. This minimizes the time duration in which the user receives the books or magazines.

Software interface

Front end client - the student and librarian online interface is built using jsp and html. The librarians local interface is built using java.

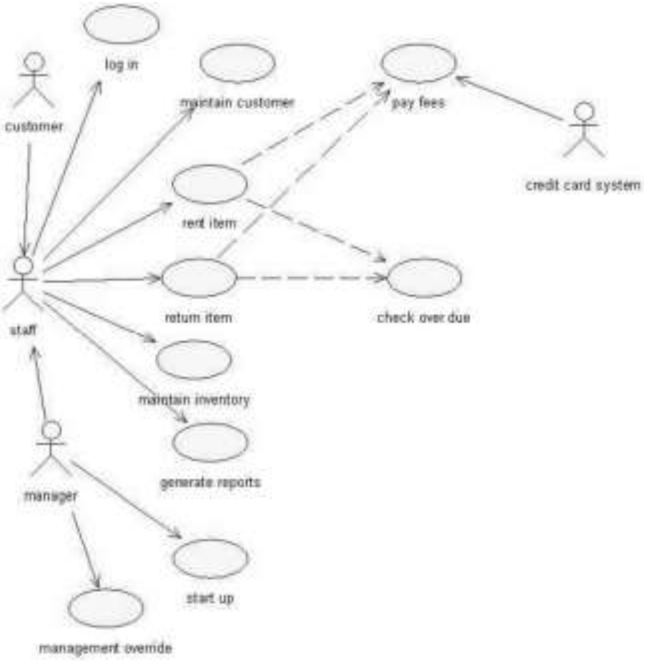
Web server - glassfish application server (oracle corporation).

Back end - oracle database

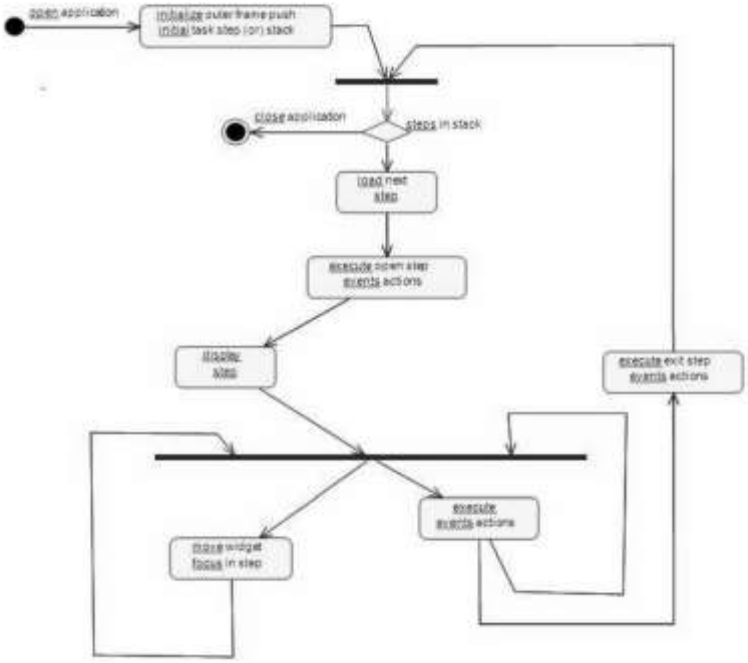
Hardware interface

The server is directly connected to the client systems. The client systems have access to the database in the server.

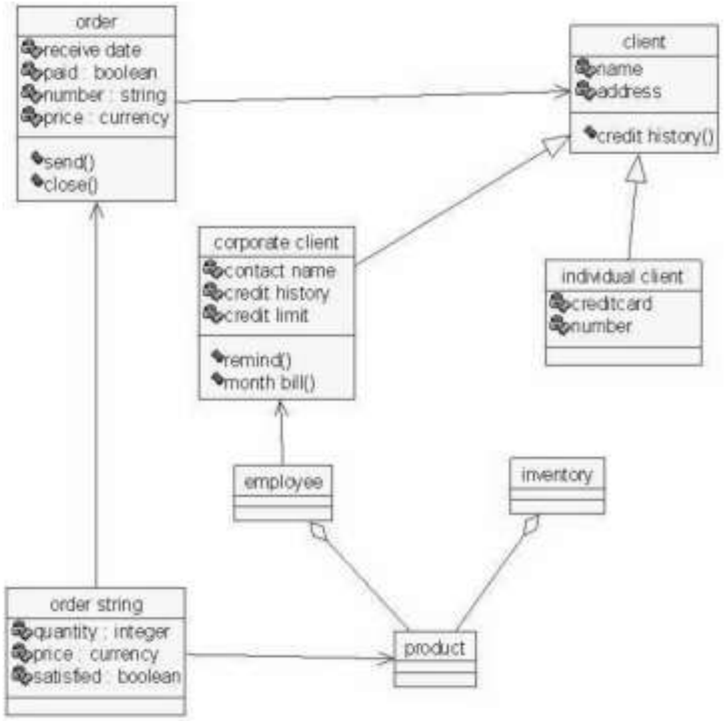
(III) USE-CASE DIAGRAM:



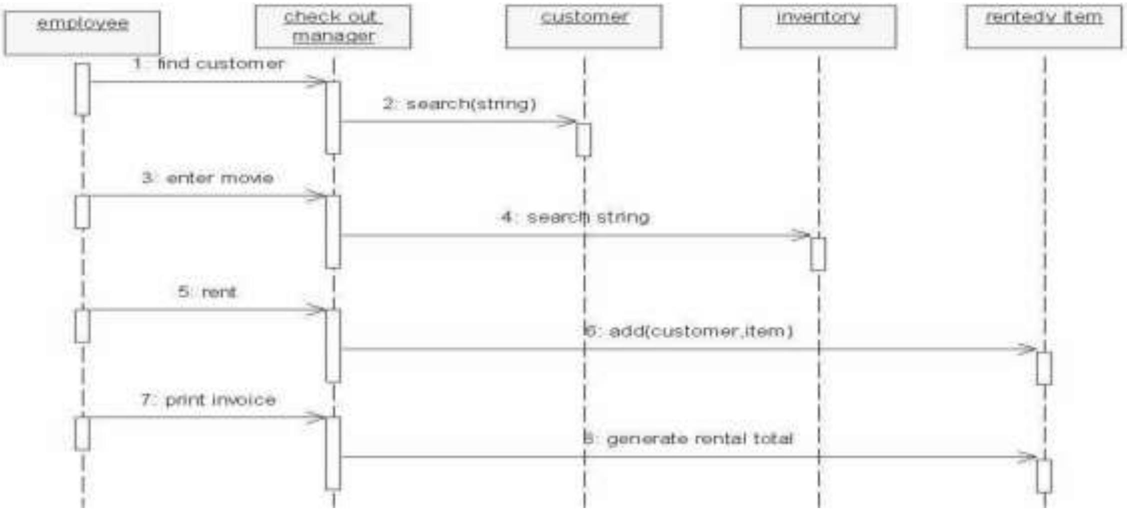
(IV) ACTIVITY DIAGRAM:



(V) CLASS DIAGRAM



(VI) INTERACTION DIAGRAM:



RESULT: Thus the mini project for e-book system has been successfully executed andcodes are generated.