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Ex. No. : 1

Date : 15/12/2023

LIBRARY MANAGEMENT SYSTEM

AIM :

To develop an analysis and design model for Library Management System using Star UML.

PROBLEM STATEMENT :

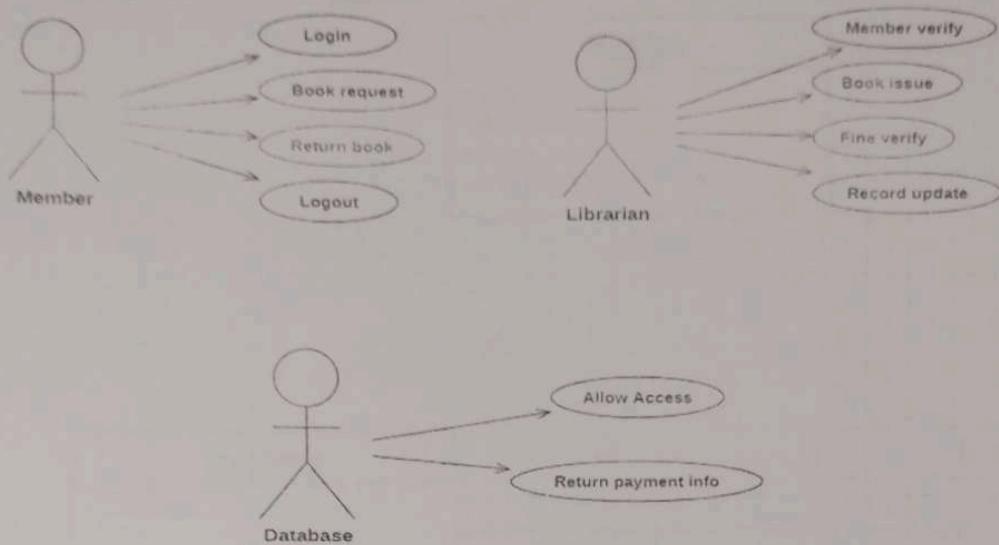
The Library Management System initial requirement is to develop a model about the purpose of monitoring and controlling and transactions in a library. The requirement are analyzed and refined which enables the end-users to efficiently use Library Management System. The complete model is developed after the analysis explaining about the scope and the model statement is prepared. The process of Library management is that the member login to the particular site to place the order by using member login to the particular site to place the order for the available book. The library management is described sequentially through steps. These steps are a member login to the particular site. They fill the member details. They place the order for their book. The librarian login and view the member details and their orders.

RESULT :

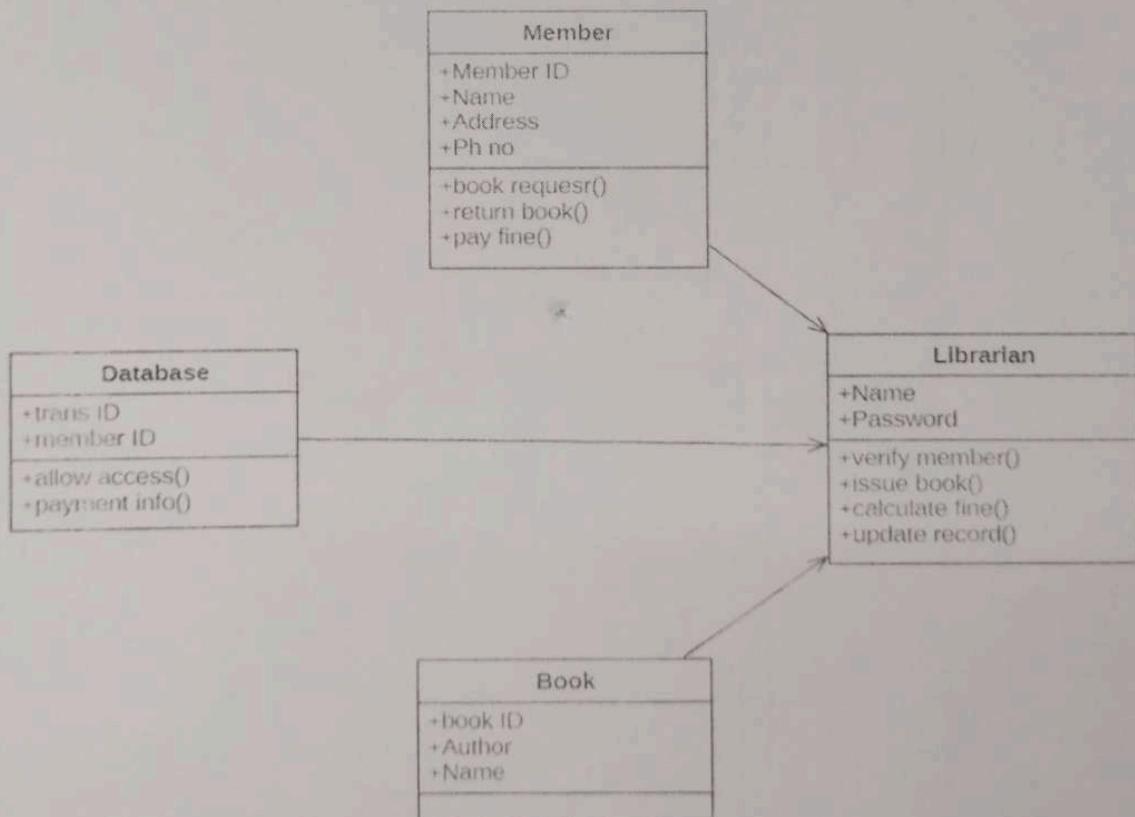
thus the various UML Diagrams for Library Management System have been created successfully.

✓

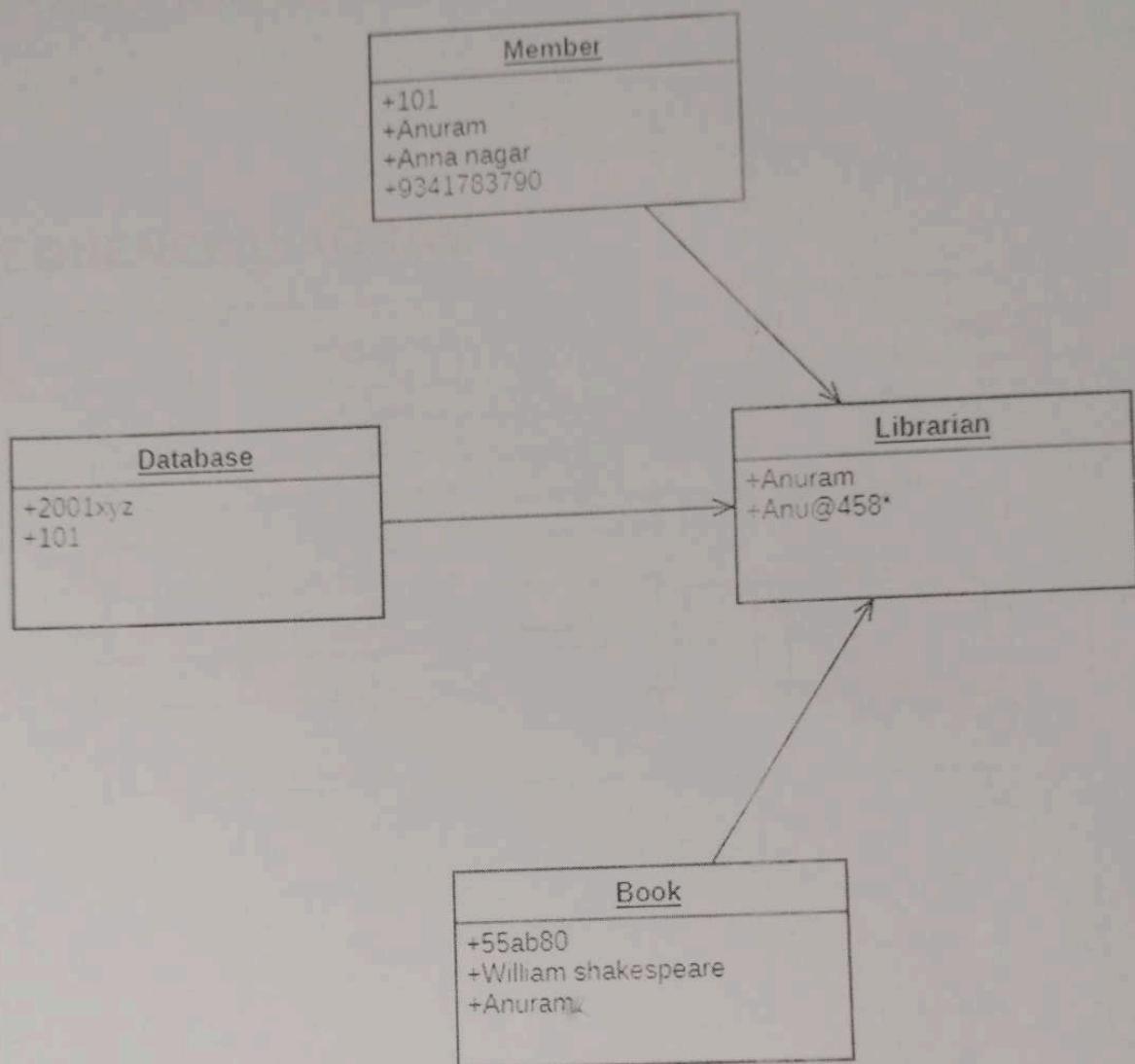
USE CASE DIAGRAM:



CLASS DIAGRAM:

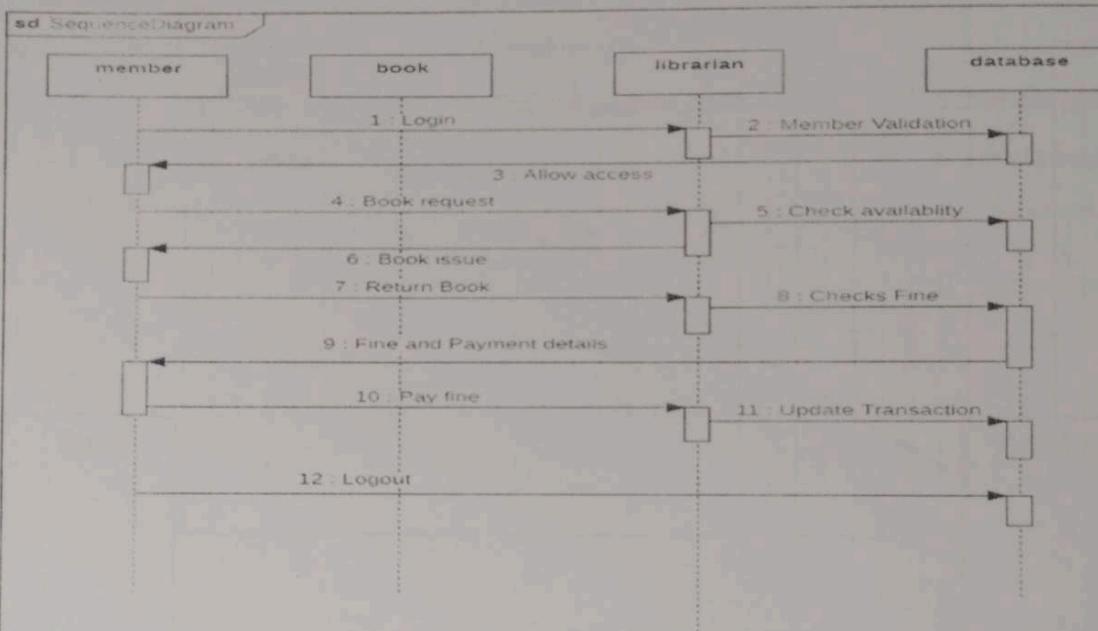


OBJECT DIAGRAM:

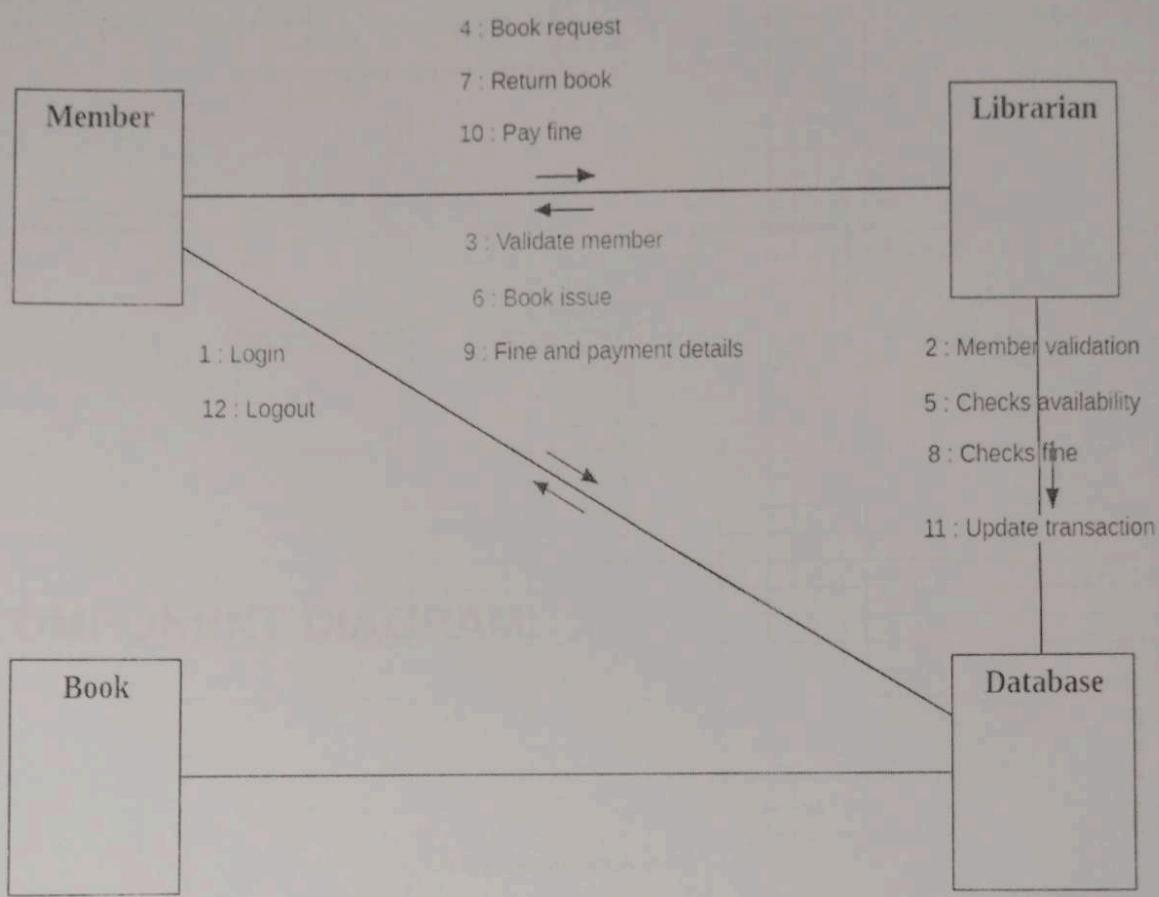


INTERACTION DIAGRAM

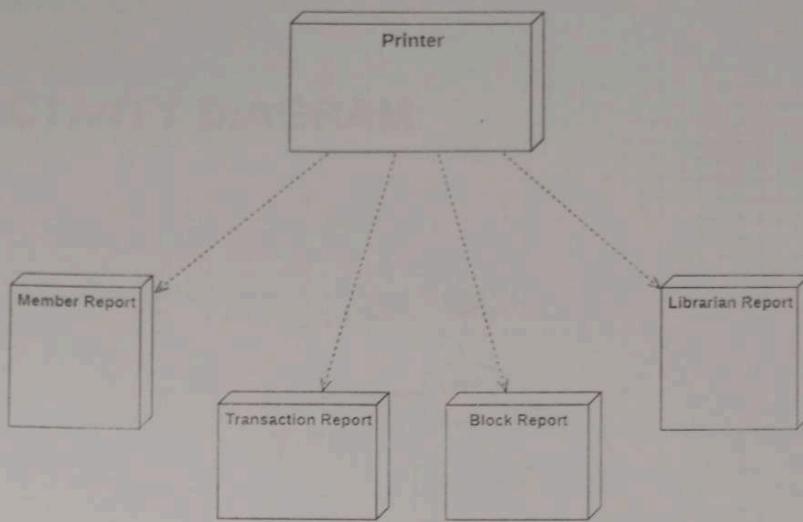
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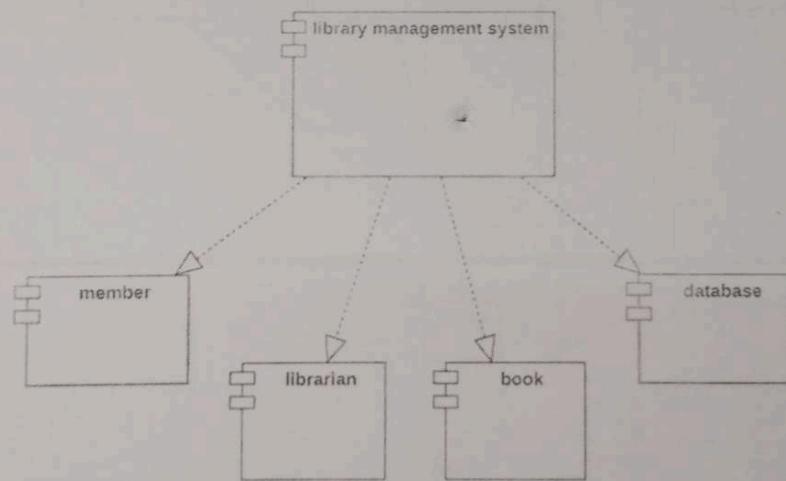
ii) COLLABORATION DIAGRAM:



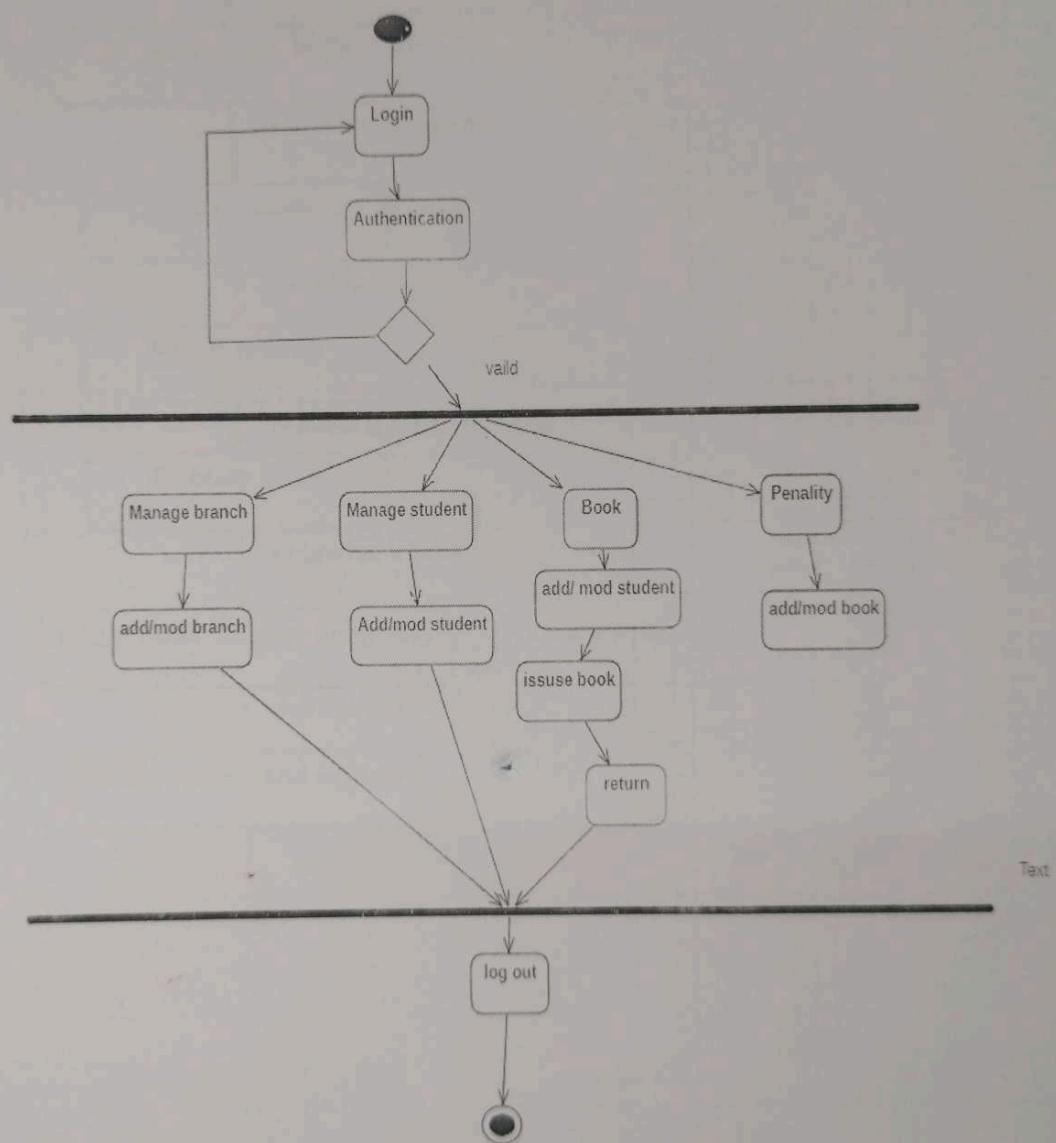
DEPLOYMENT DIAGRAM:



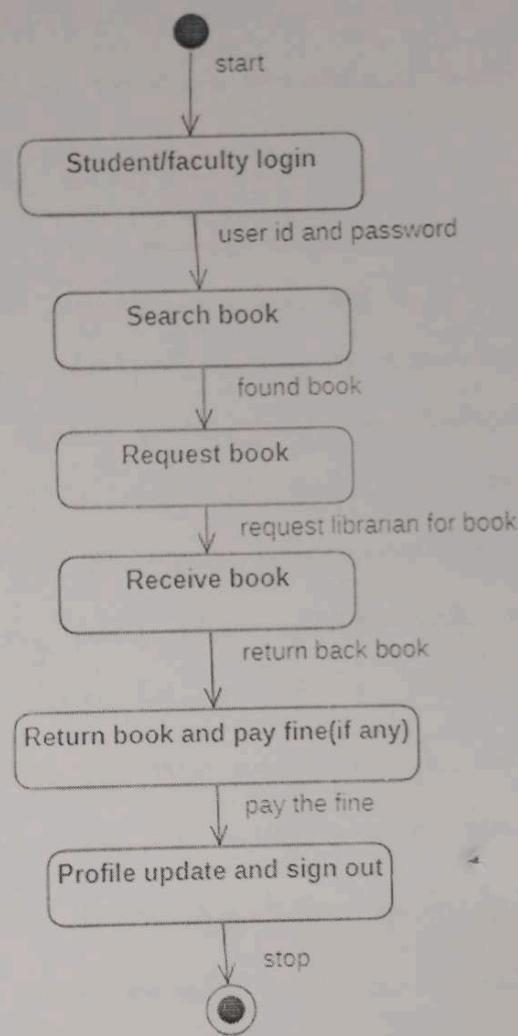
COMPONENT DIAGRAM:



ACTIVITY DIAGRAM:



STATE CHART DIAGRAM:



Ex. No.: 2

Date: 22/12/2023

AUTOMATIC TELLER MACHINE

(3)

AIM:

To develop an analysis and design model for Automatic Teller Machine using star UML.

PROBLEM STATEMENT:

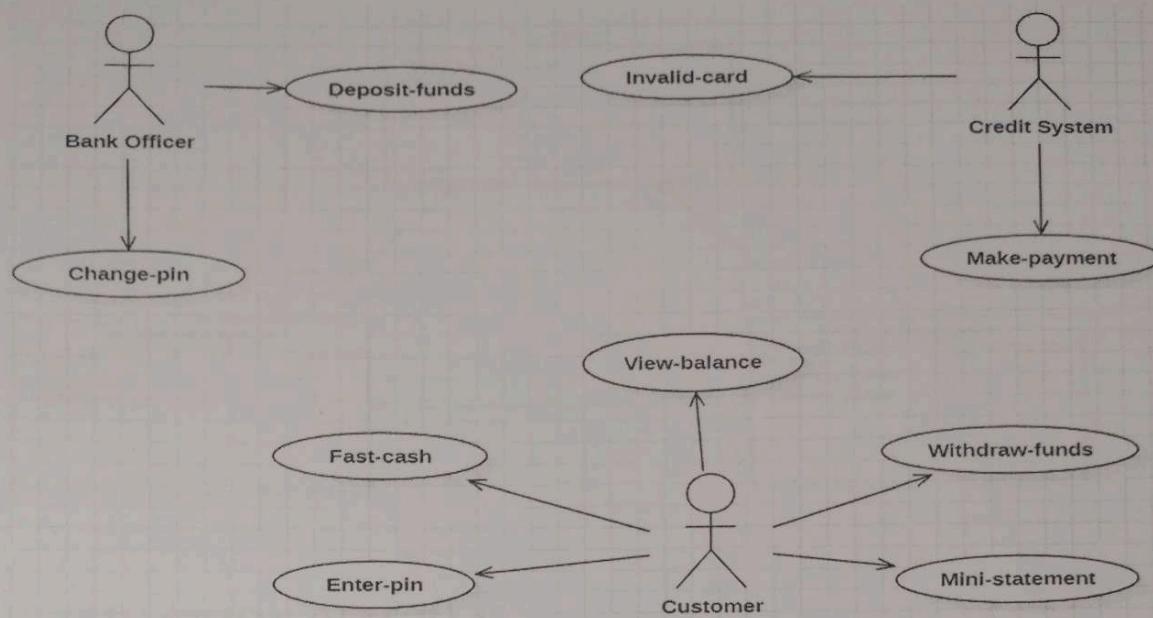
The user must input the pin number or code number that the system user to verify an ATM card against the customer database. A transaction can be carried out if the code precisely matches the customer's database. The user is asked to enter the access card pin number, again if it does not match the customer database, and they are then allowed to proceed. If the funds are available in their accounts, users may withdraw the money. The user have the option of cash deposits as well. There will be a receipt available at the end. the ATM system satisfies the user's diverse needs by enabling a variety of actions.

RESULT:

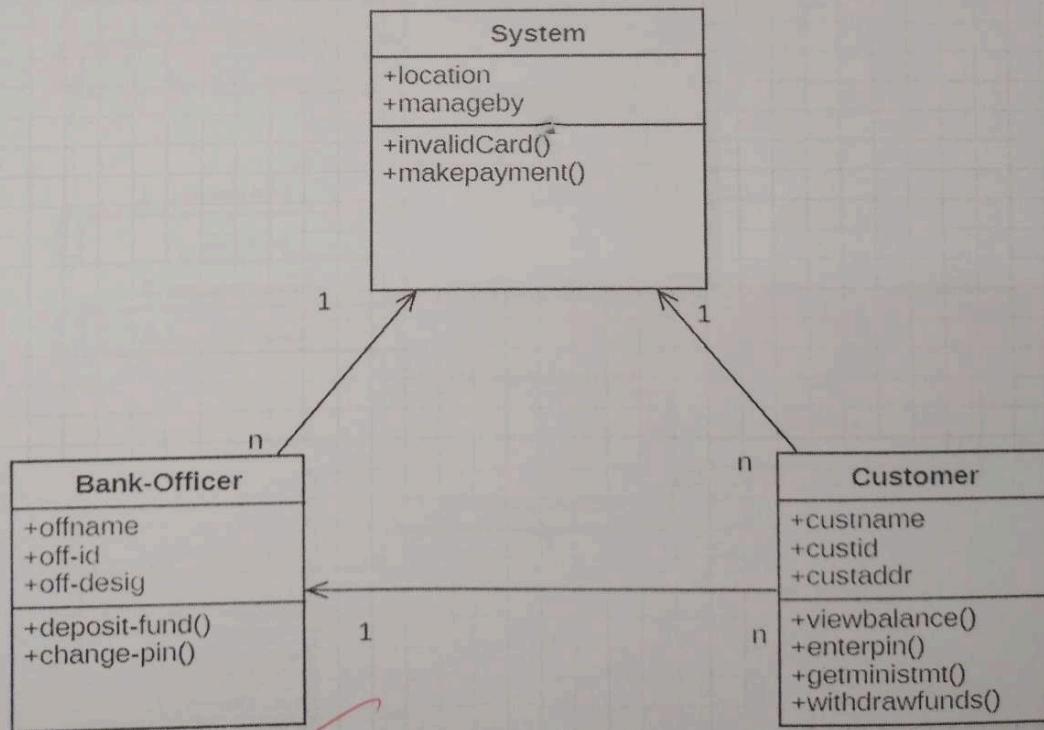
Thus the various UML diagrams for Automatic Teller machine have been created successfully.



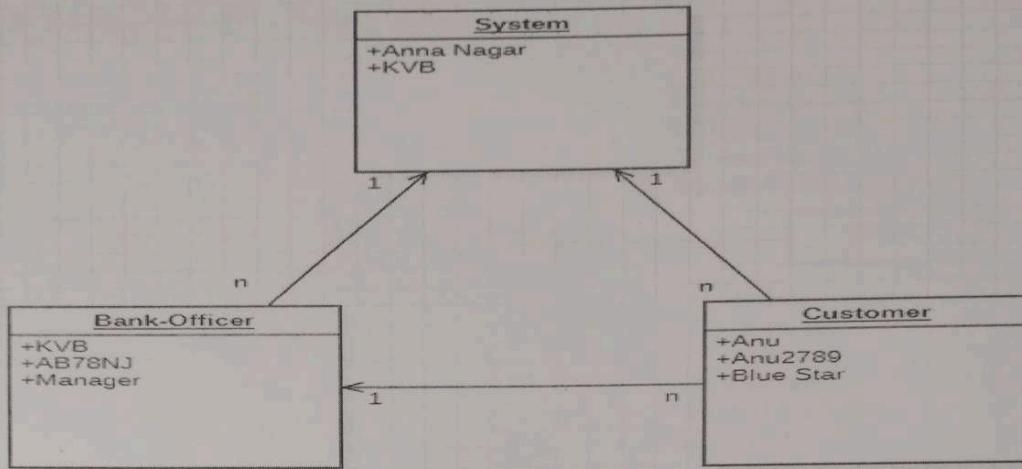
USE CASE DIAGRAM :



CLASS DIAGRAM :

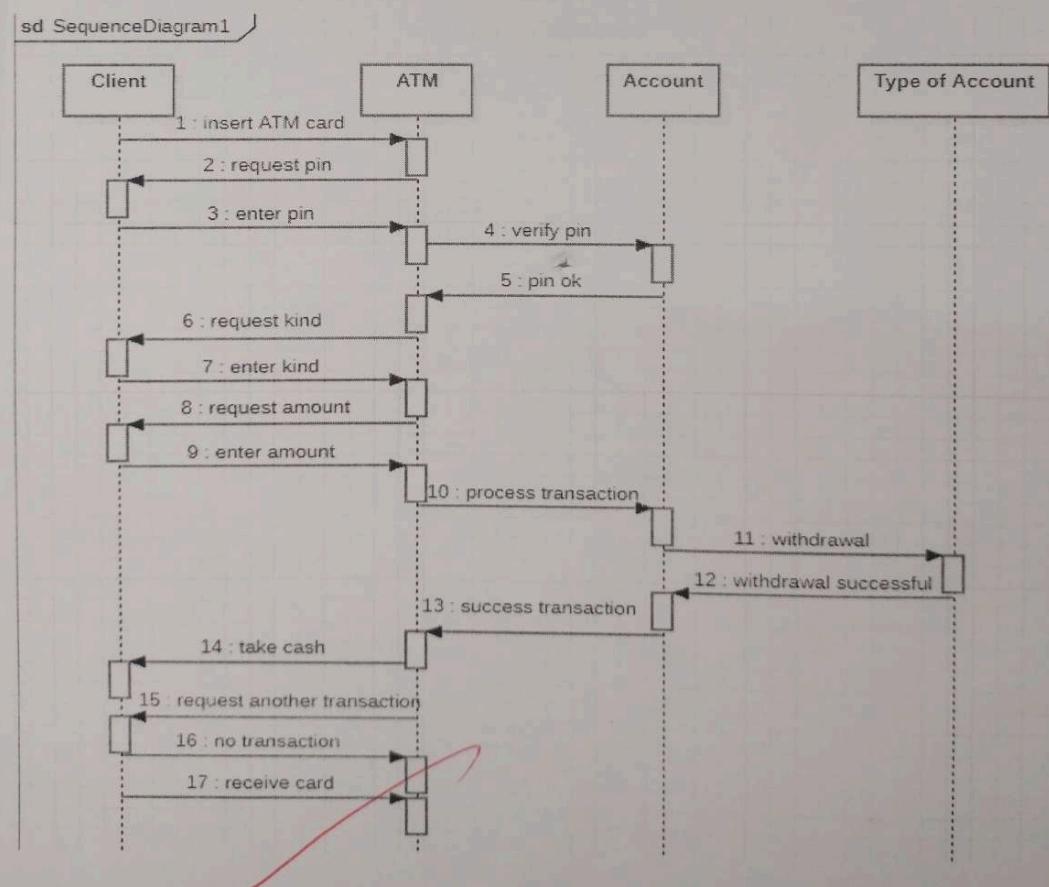


OBJECT DIAGRAM :

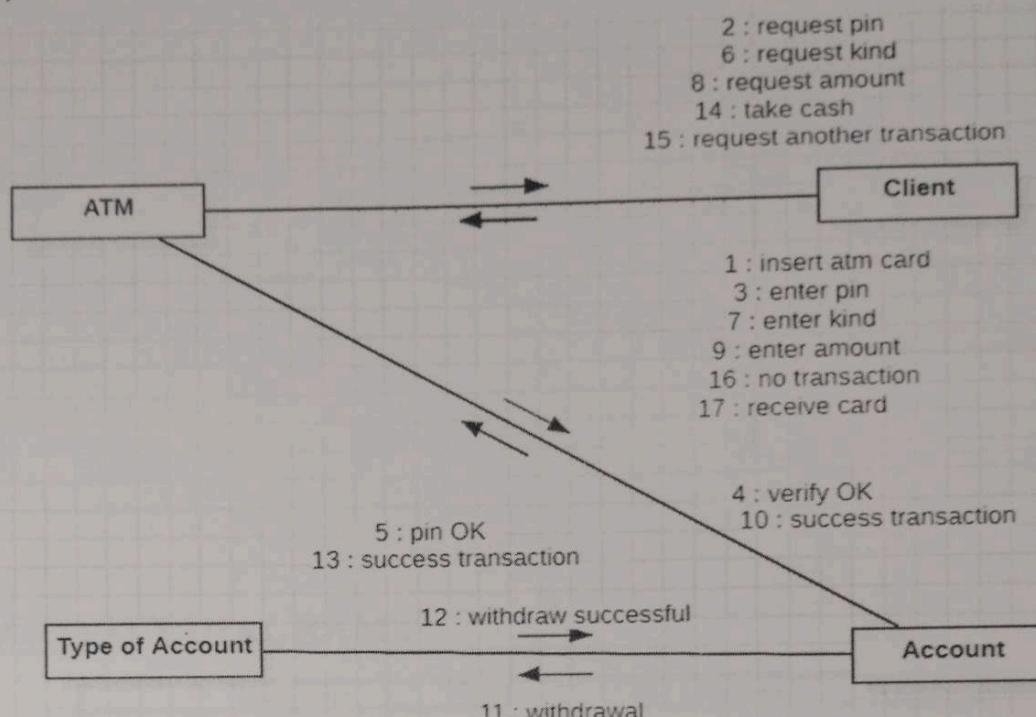


INTERACTION DIAGRAM

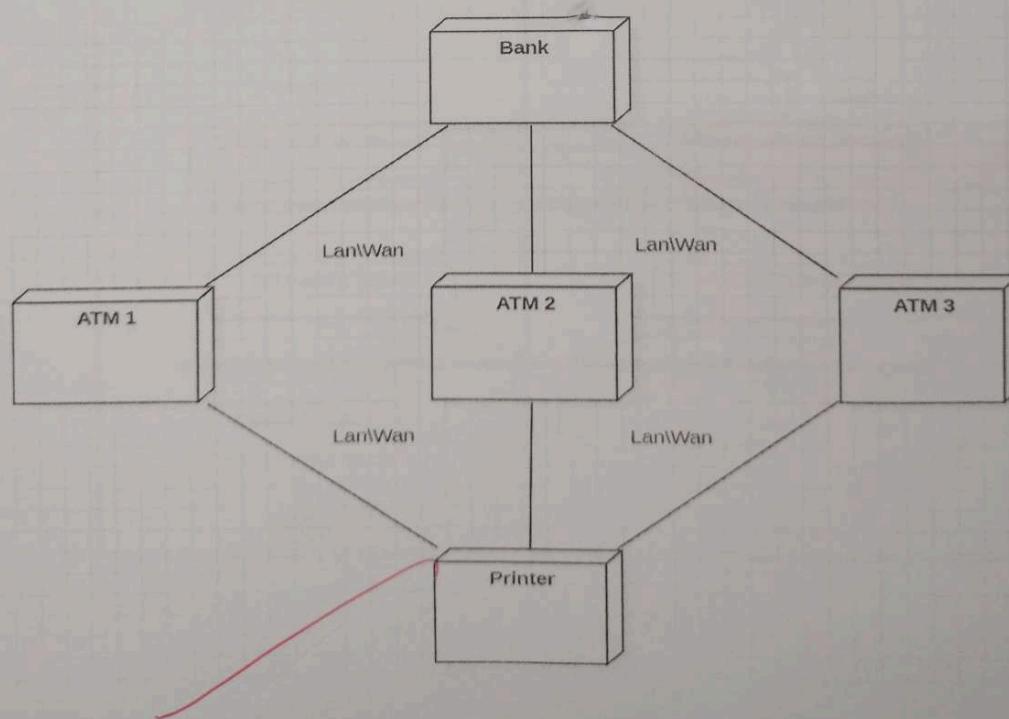
(i) SEQUENCE DIAGRAM :



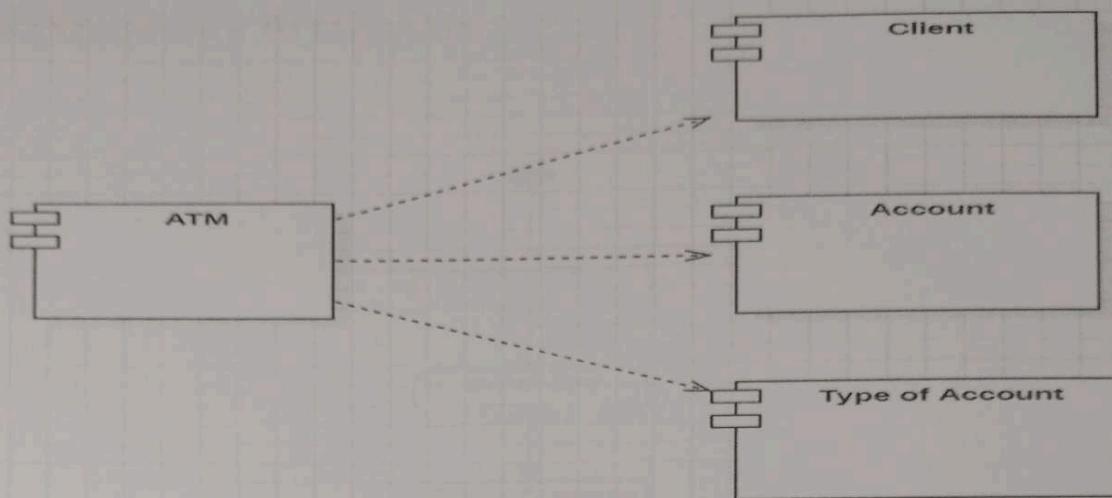
(ii) COLLABORATION DIAGRAM :



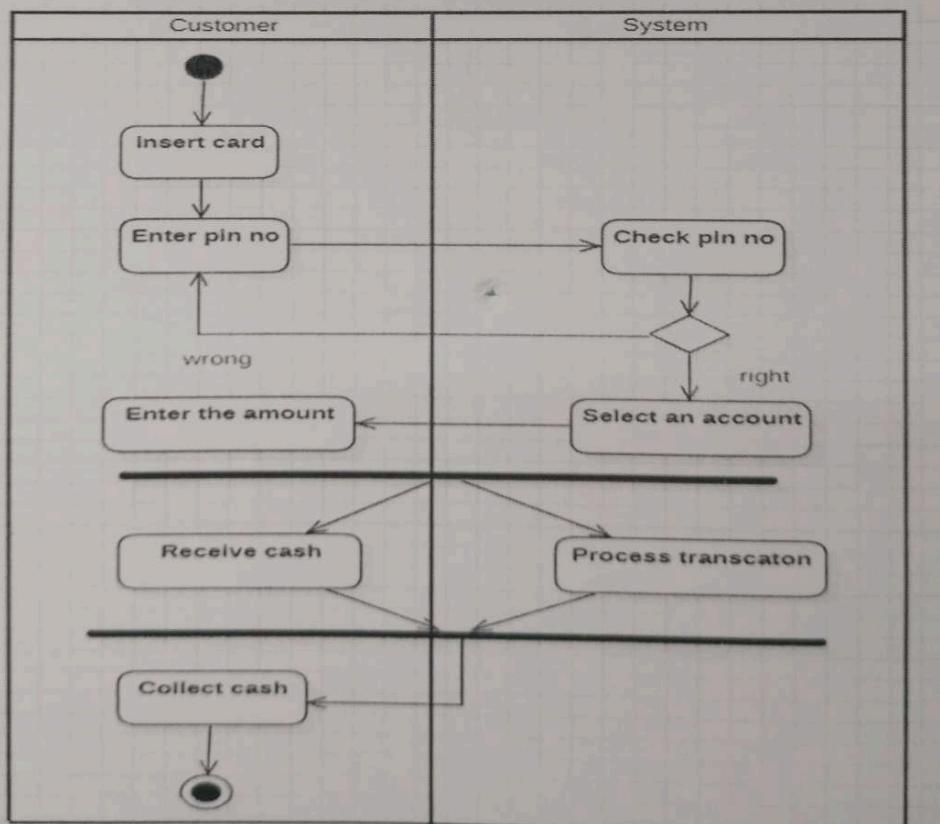
DEPLOYMENT DIAGRAM:-



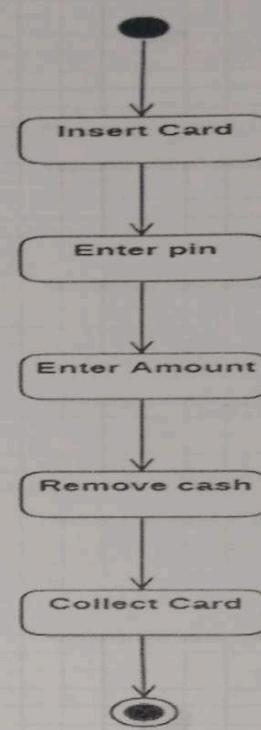
COMPONENT DIAGRAM :



ACTIVITY DIAGRAM :



STATE CHART DIAGRAM:-



Ex. No.: 3

Date: 08/01/2024

STUDENT INFORMATION MANAGEMENT

(15)

AIM:

To develop an analysis and design model for Student Information Management using Star UML.

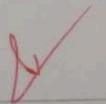
PROBLEM STATEMENT:

The problem is to design a system for managing Student Information using UML. The System should be able to store, update and retrieve student information such as name, student id and marks.

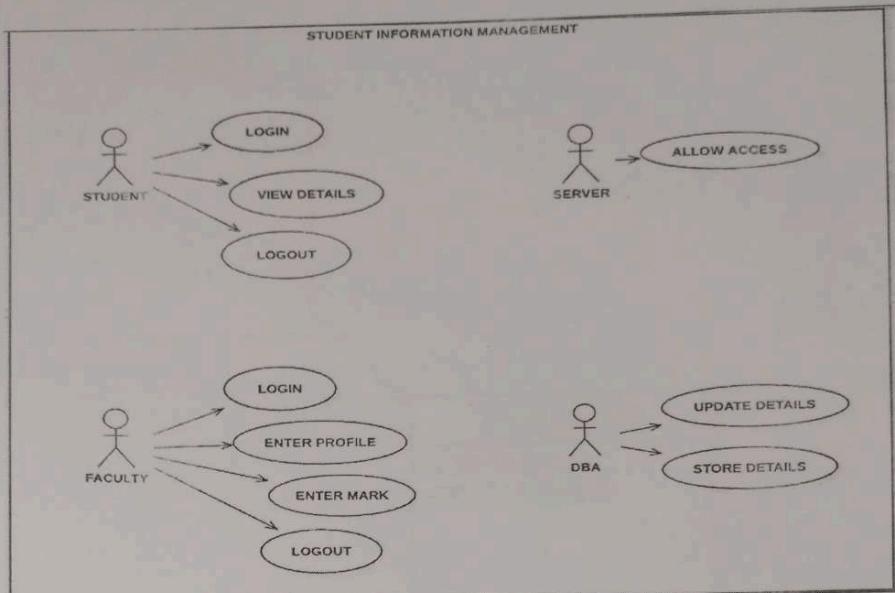
The system should provide a user-friendly interface for students, teachers and administrative staff to access the information. The administrative staff to access the faculties to enter the student profile and marks, students to view their details and maintain them.

RESULT:

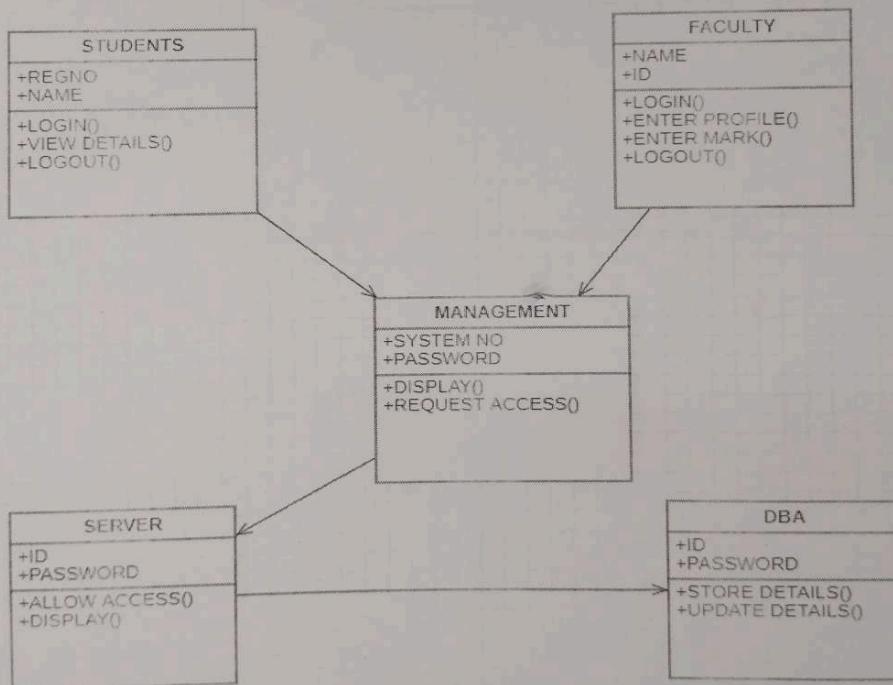
Thus the various UML diagrams the student Information Management have been created successfully.



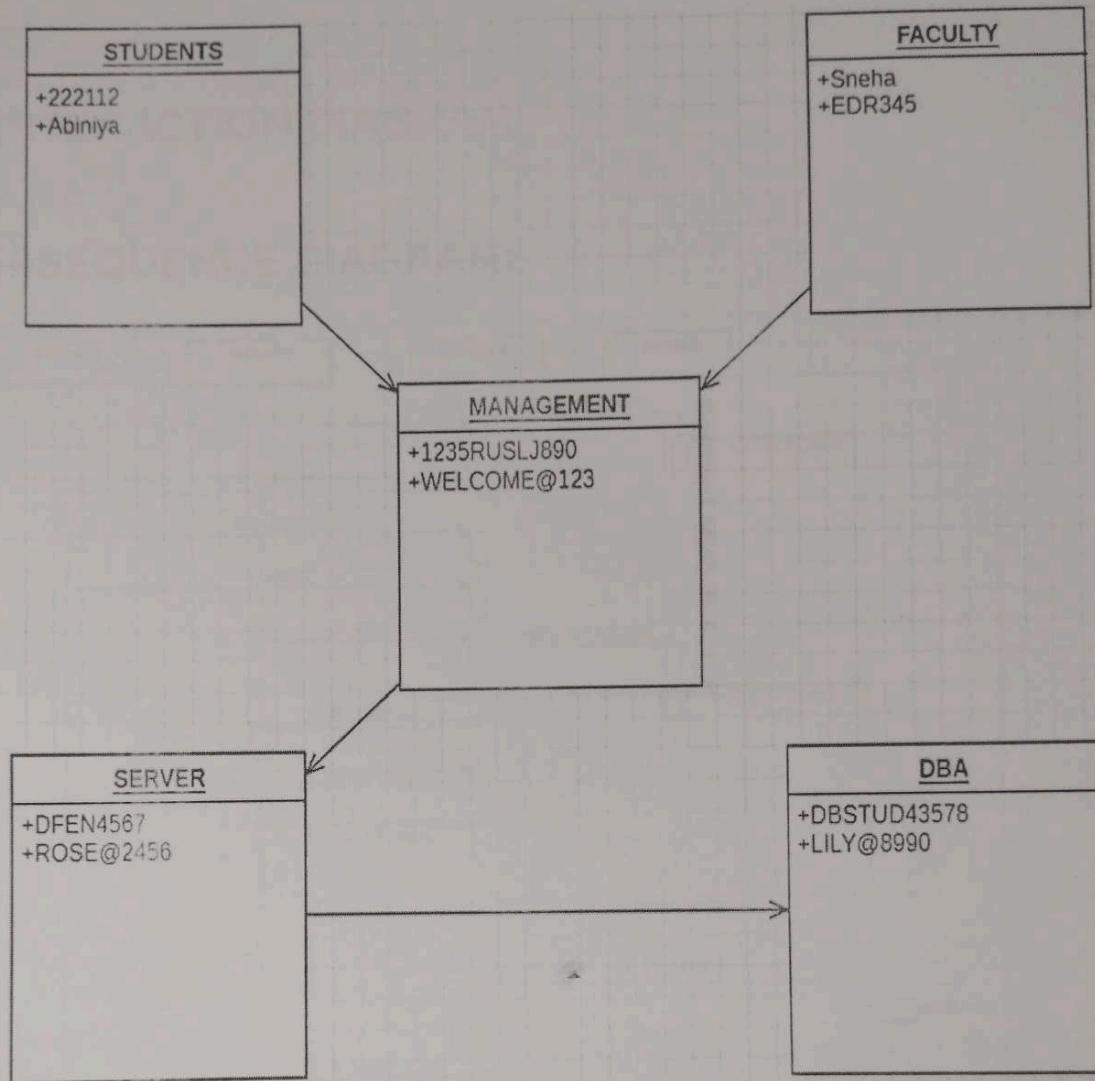
USECASE DIAGRAM:



CLASS DIAGRAM:

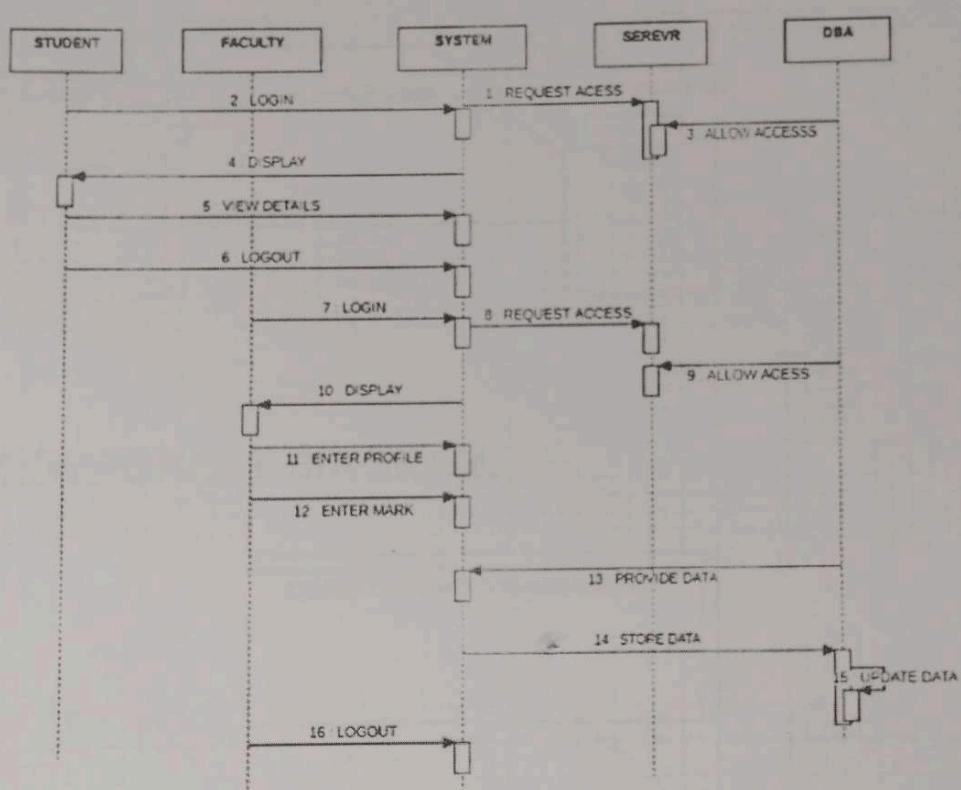


OBJECT DIAGRAM:

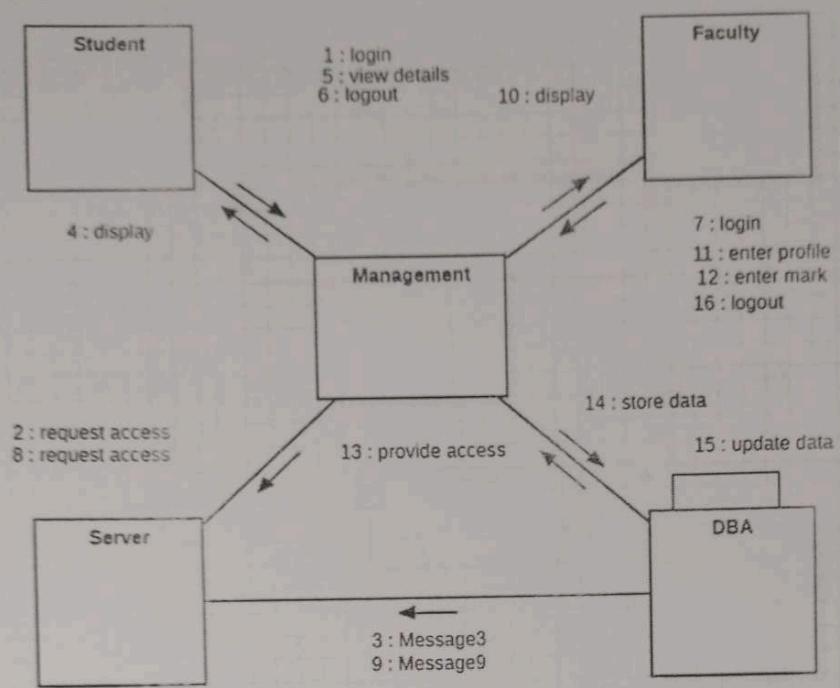


INTERACTION DIAGRAM:

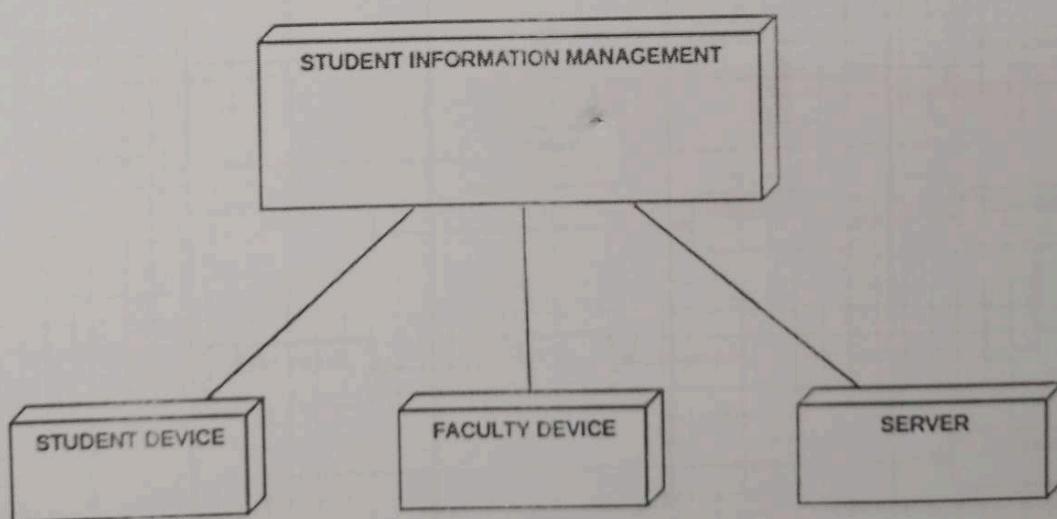
(i) SEQUENCE DIAGRAM:



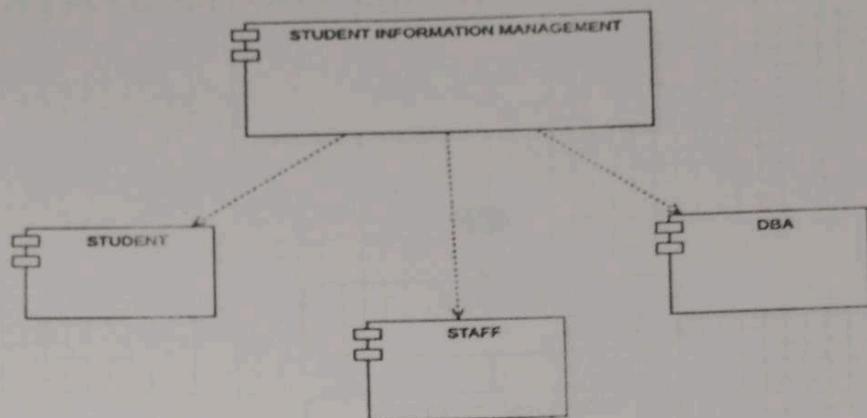
(ii) COLLABORATION DIAGRAM:



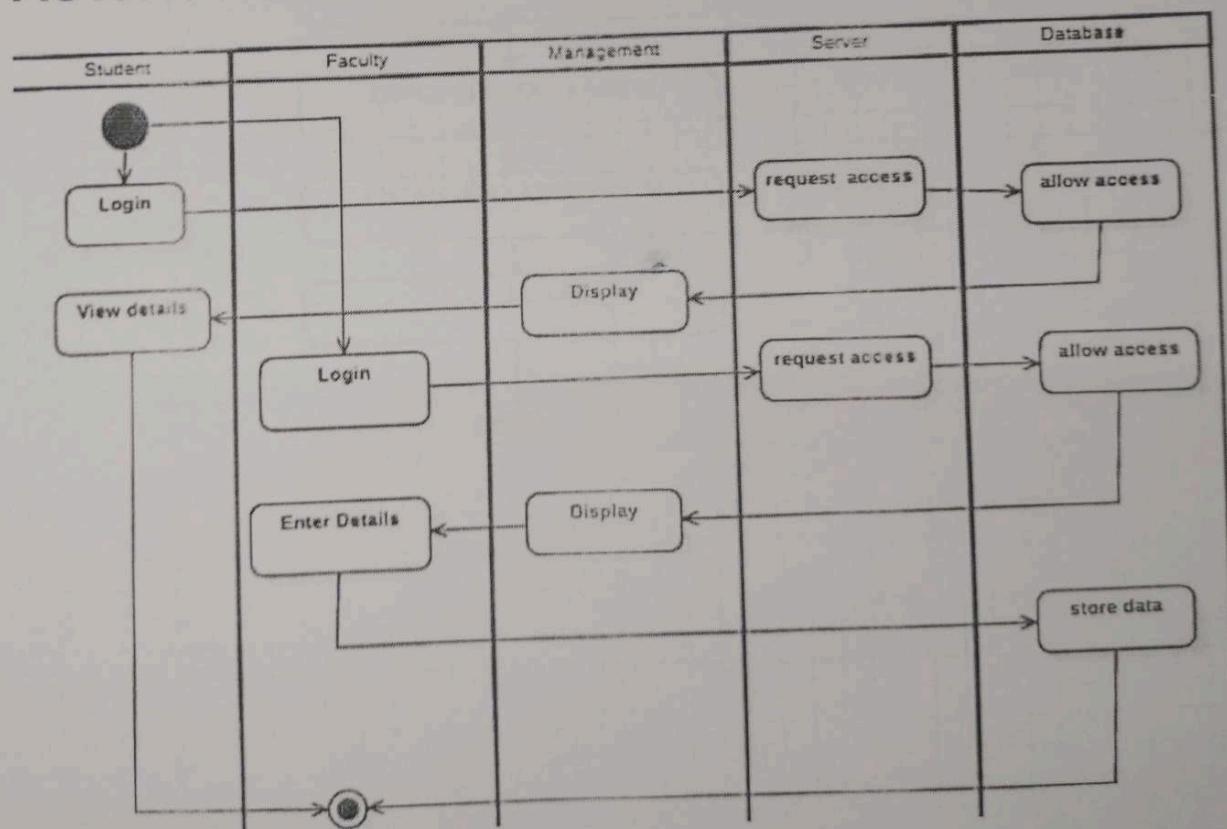
COMPONENT DIAGRAM:



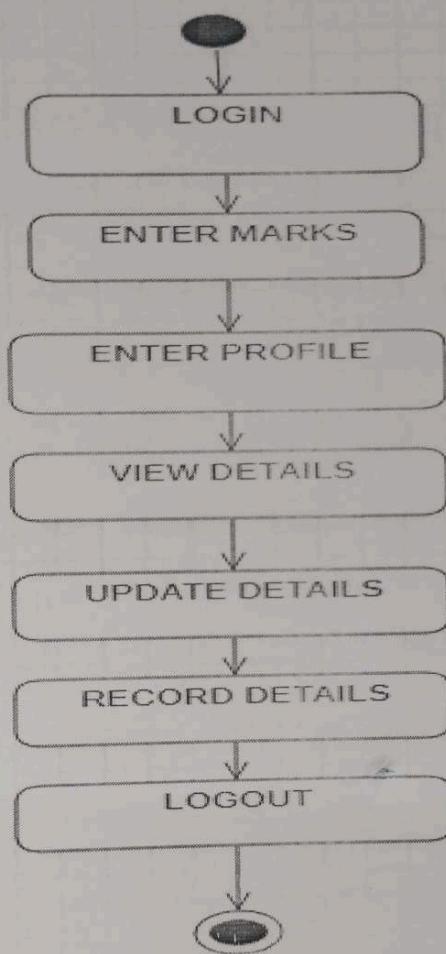
DEPLOYMENT DIAGRAM:



ACTIVITY DIAGRAM:



STATE CHART DIAGRAM:



EX. No.: 4

Date : 19/01/2024

MATRIMONY SERVICE

AIM :

To develop an analysis and design model for Matrimony service using Star UML.

PROBLEM STATEMENT :

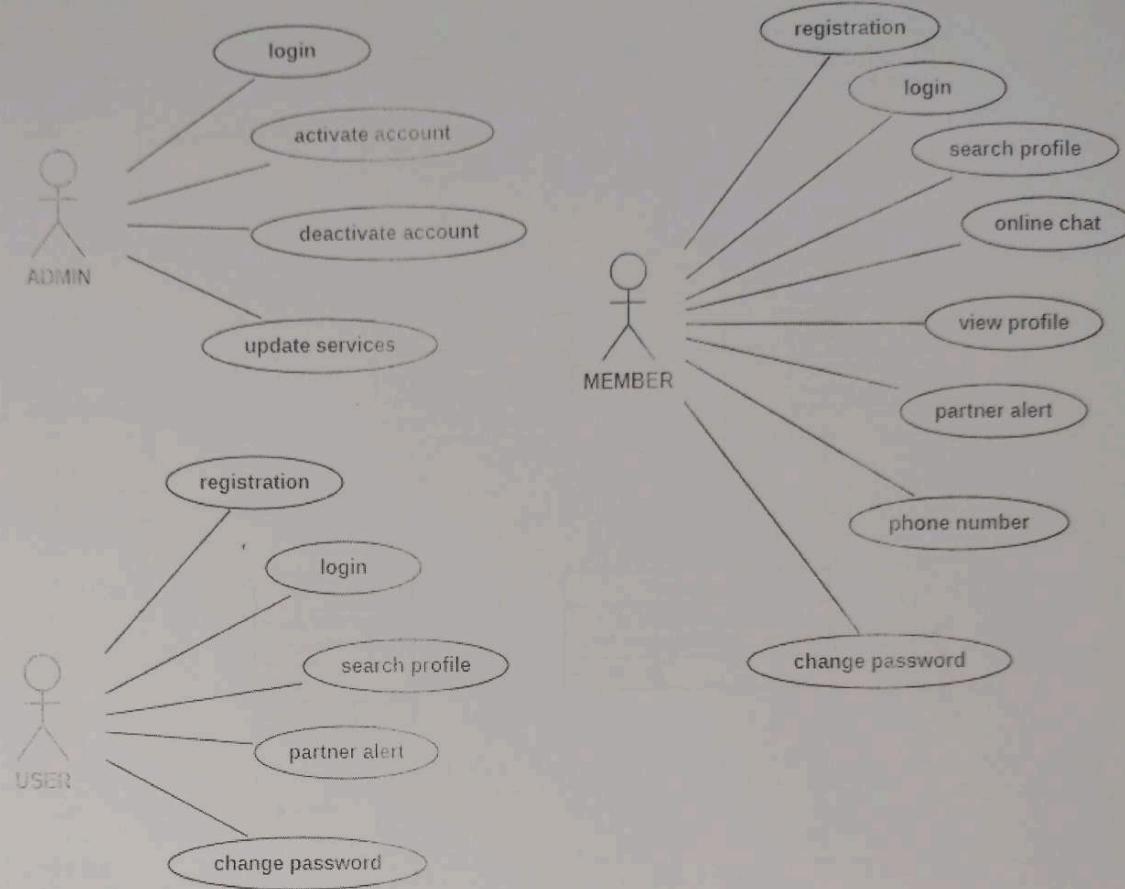
The Matrimonial web application is proposed to understand the user's behaviour and suggest real-time appropriate profiles. This application aims at creating a full-fledged website for matrimony. The users of the site can browse for details for a match. The users only look for details that matches the individual's criteria. These users can also use the search option. The member can avail the option of online chat or call. The admin has to check every registered user, as a valid user and its responsible for the overall maintenance of the site.

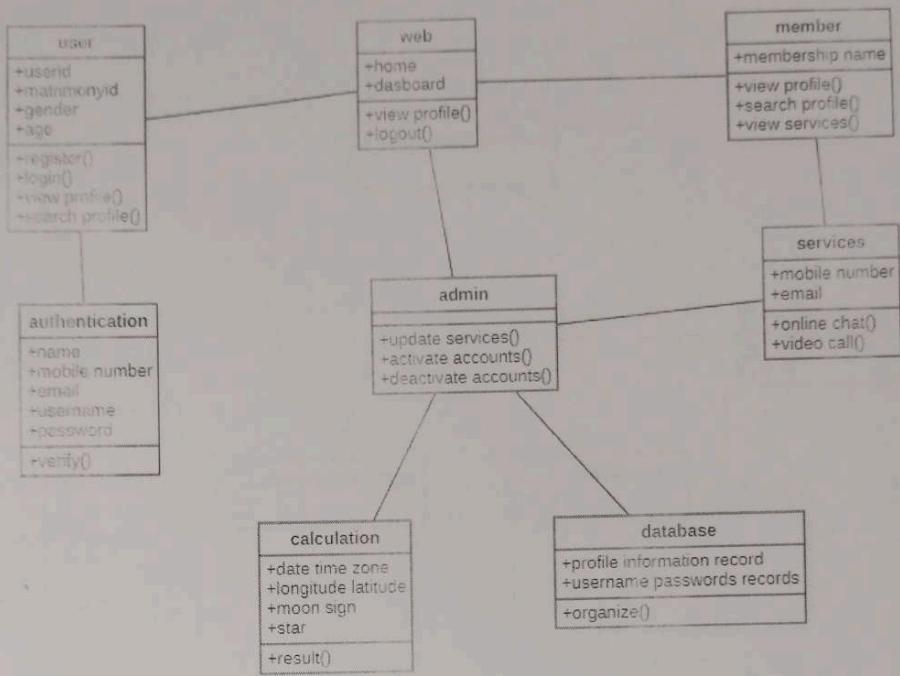
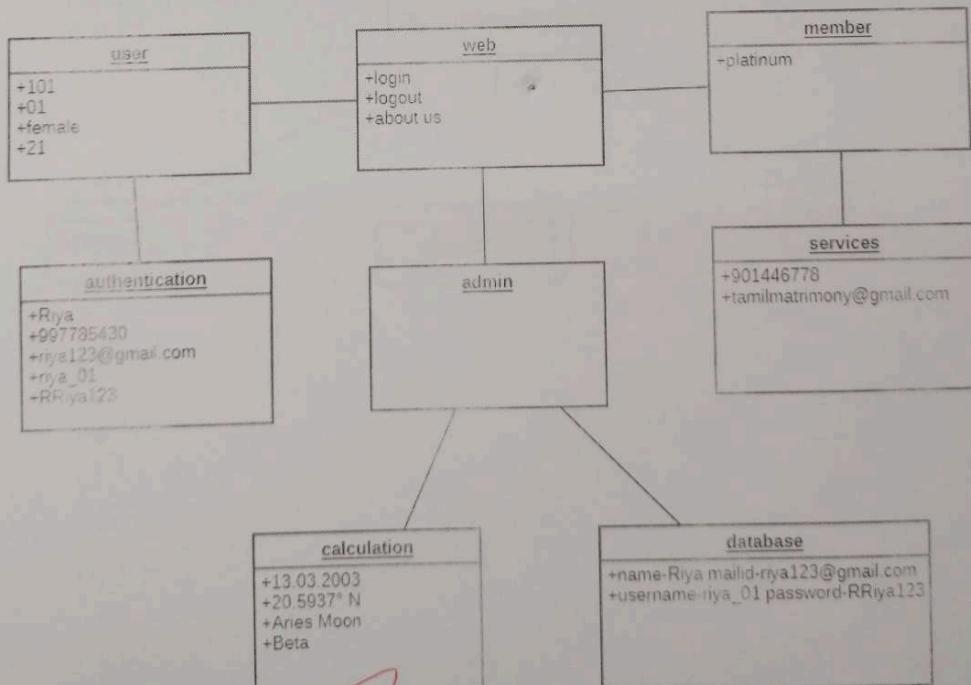
RESULT :

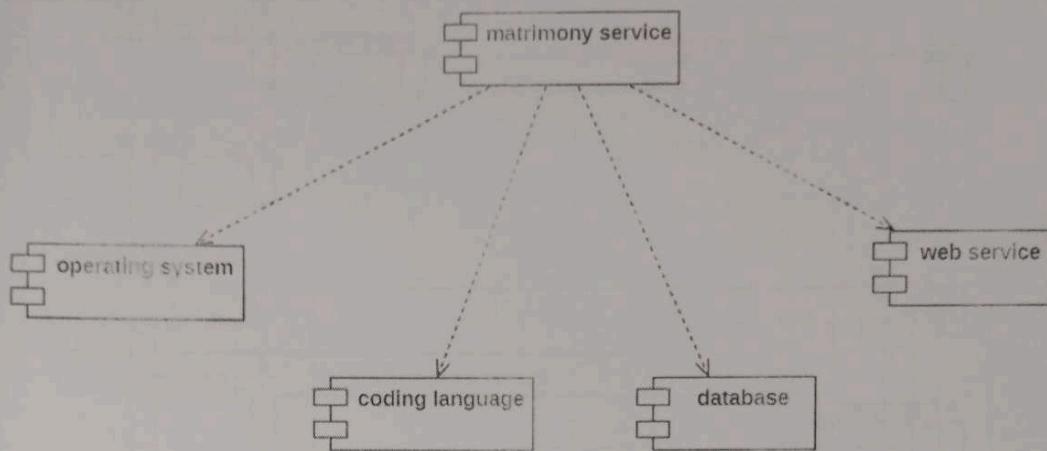
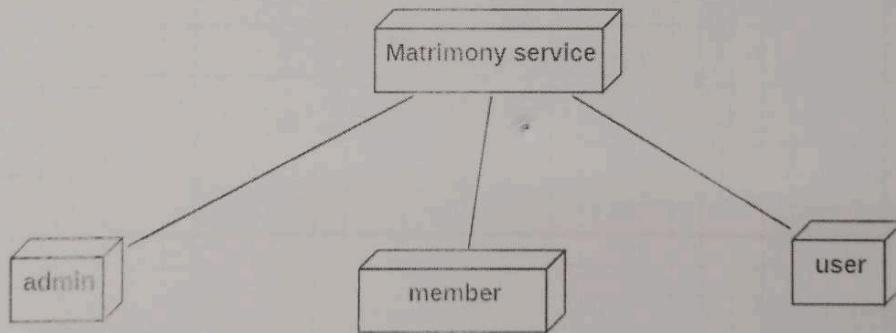
thus the various UML diagrams for Matrimony service have been created successfully.



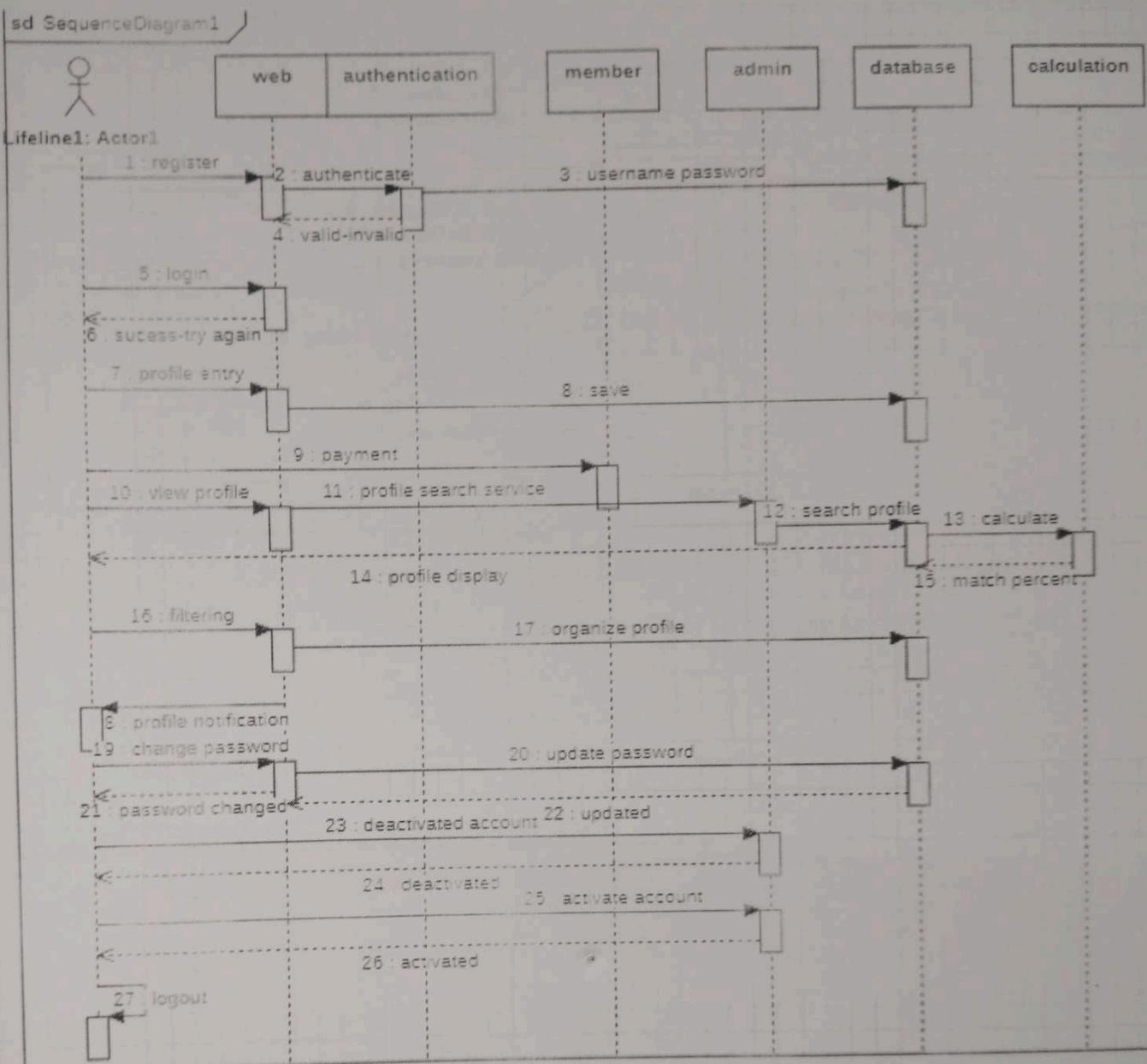
USE CASE DIAGRAM



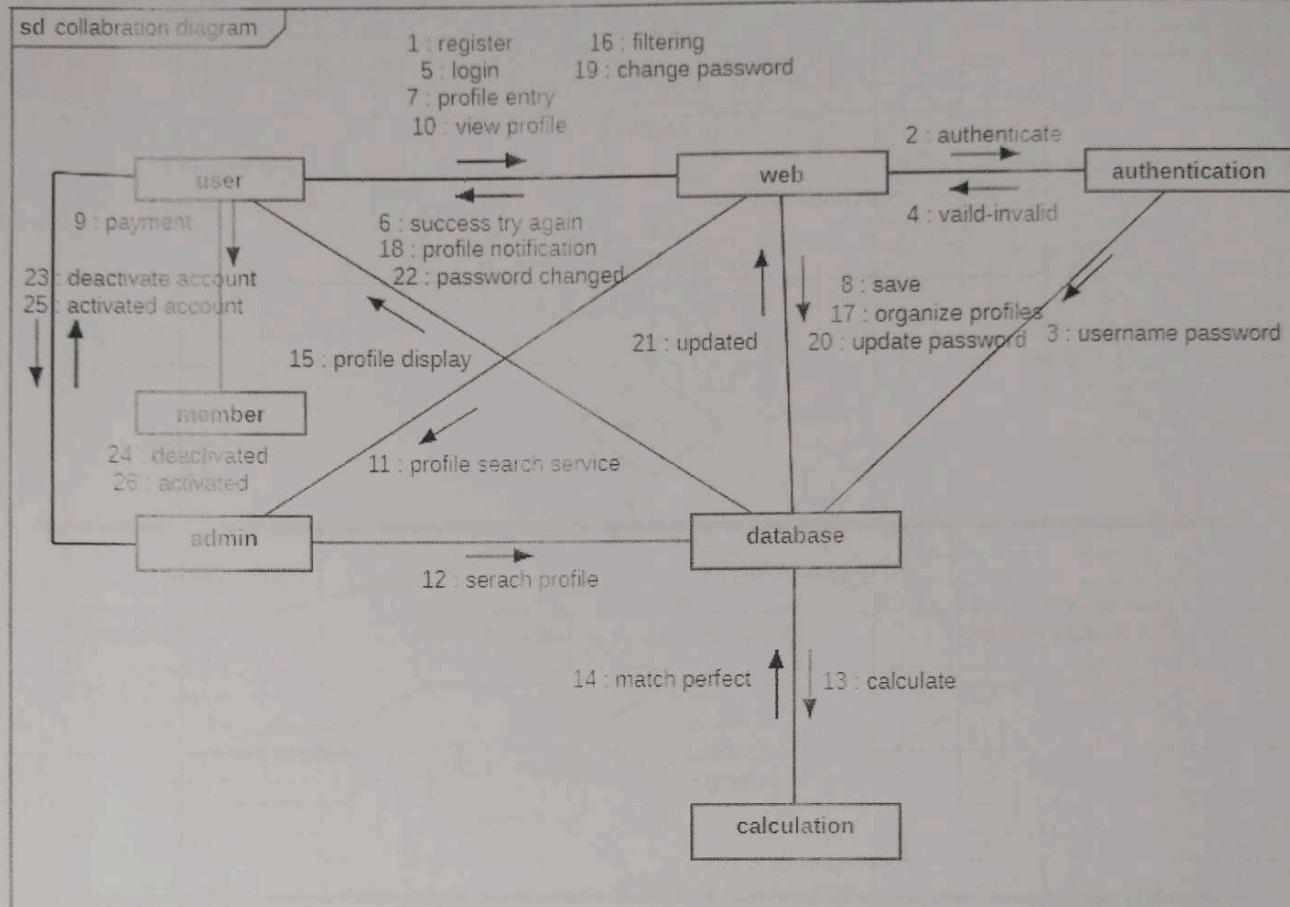
CLASS DIAGRAMOBJECT DIAGRAM

COMPONENT DIAGRAMDEPLOYMENT DIAGRAM

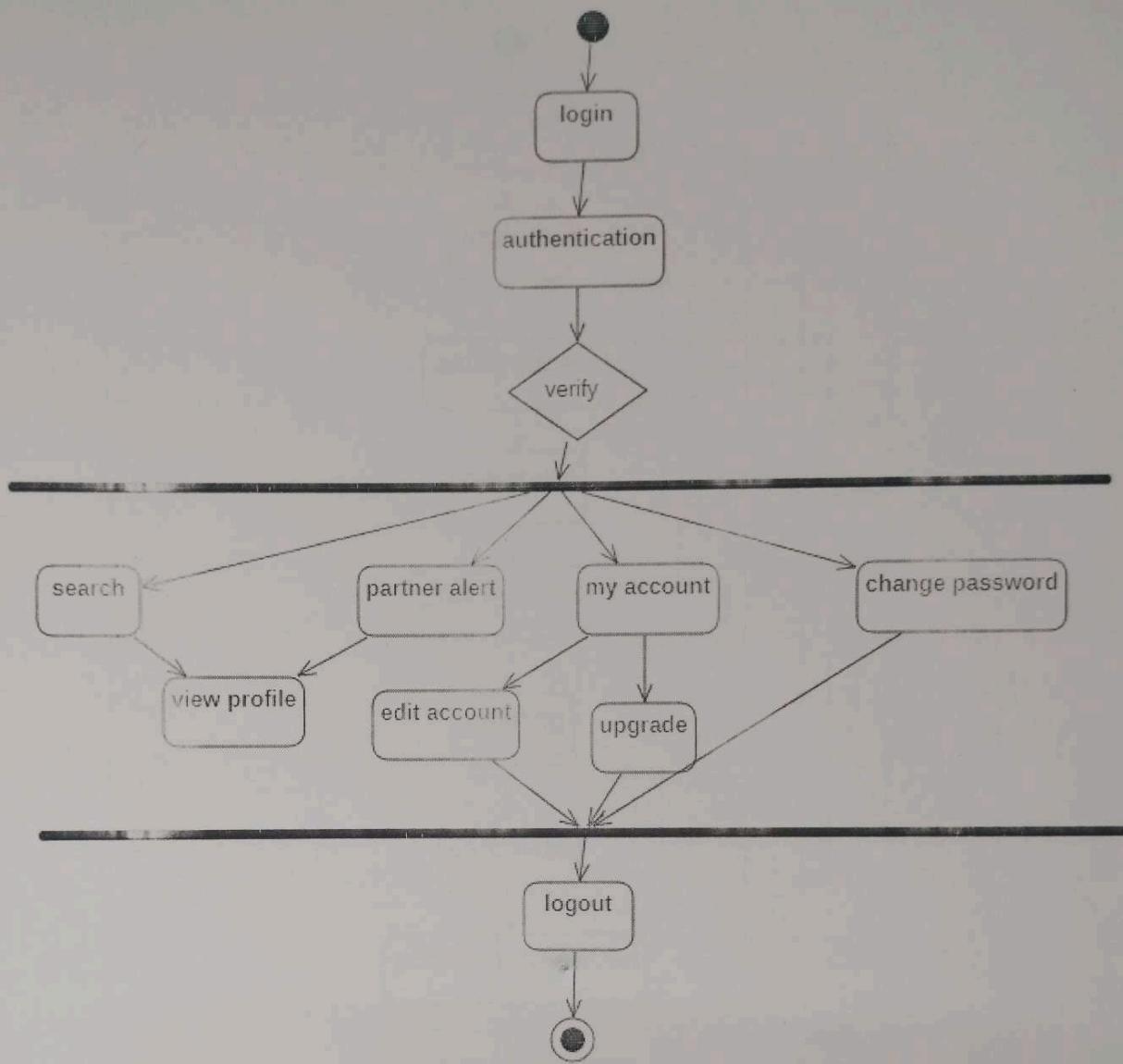
SEQUENCE DIAGRAM

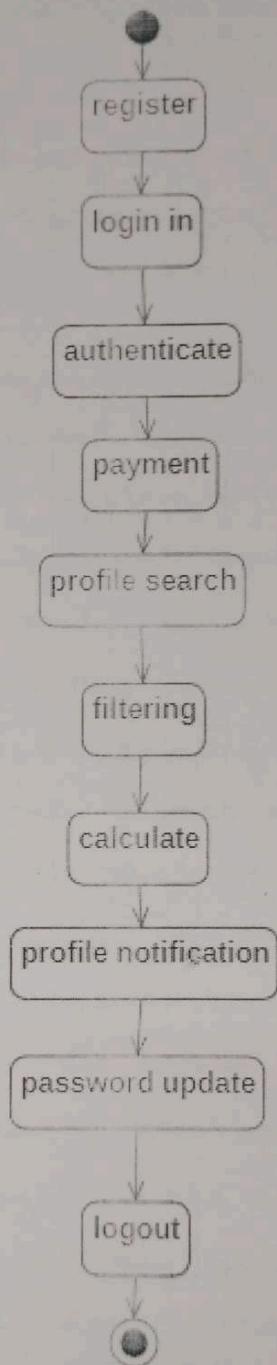


COLLABORATION DIAGRAM



ACTIVITY DIAGRAM



STATE CHART DIAGRAM

Ex. No. : 5

Date : 09/02/2024

STOCK MANAGEMENT SYSTEM

AIM:

To develop an analysis and design model for Stock Management System using Star UML.

PROBLEM STATEMENT :

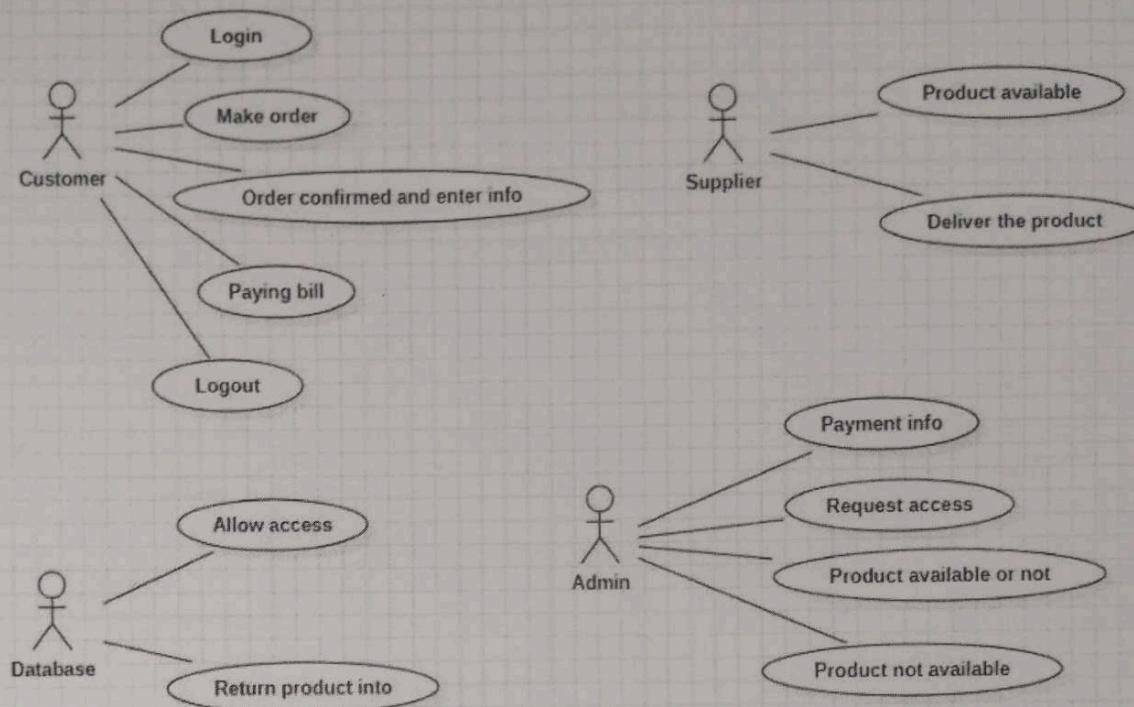
The stock Management system initial requirement is to develop a model about the mechanism of the stock management system is caught from the customer. The requirement are analysed and refined which enables the end-users to efficiently use stock management system. The complete model is developed after the analysis explaining about the scope and the model statement is prepared. The process of stock management is that the customer login to the particular site to place the order for the customer login to the particular site to place the order for the customer product. The stock management system is described sequentially through steps. These steps are a customer login to the particular site. They fill the customer details. They place the order for their product. The vendor login and views the customer details and orders.

RESULT :

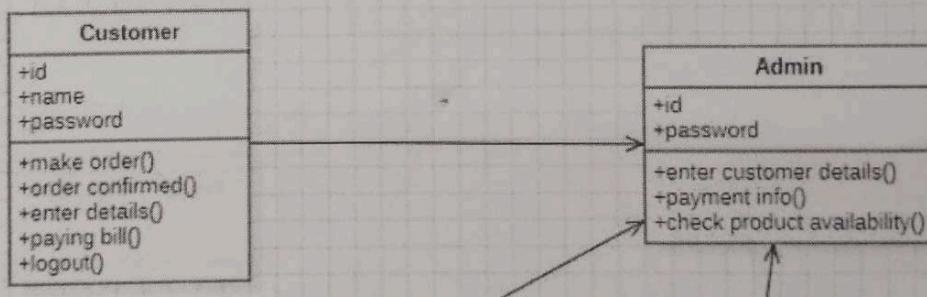
Thus the various UML diagrams for stock management system have been created successfully.



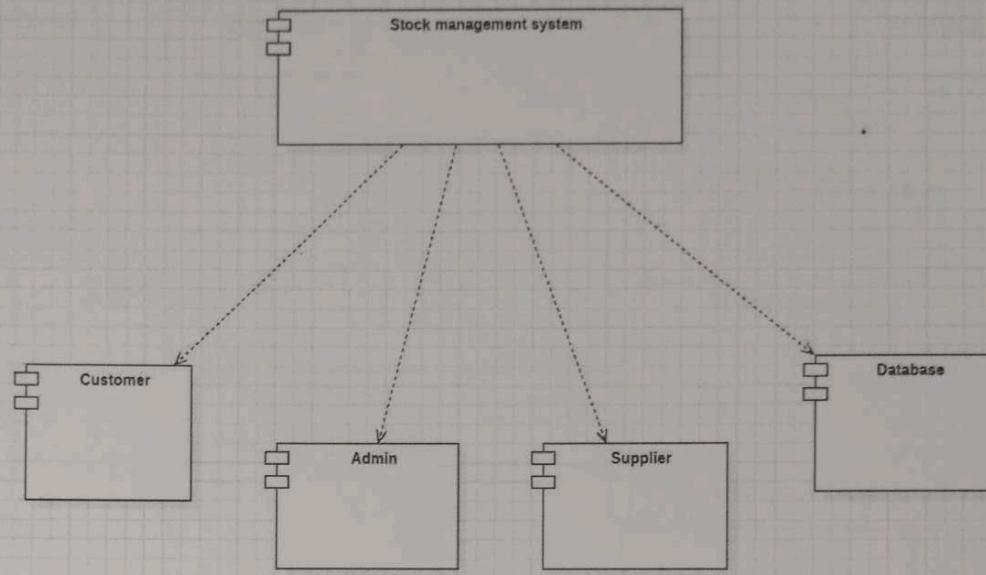
USECASE DIAGRAM:



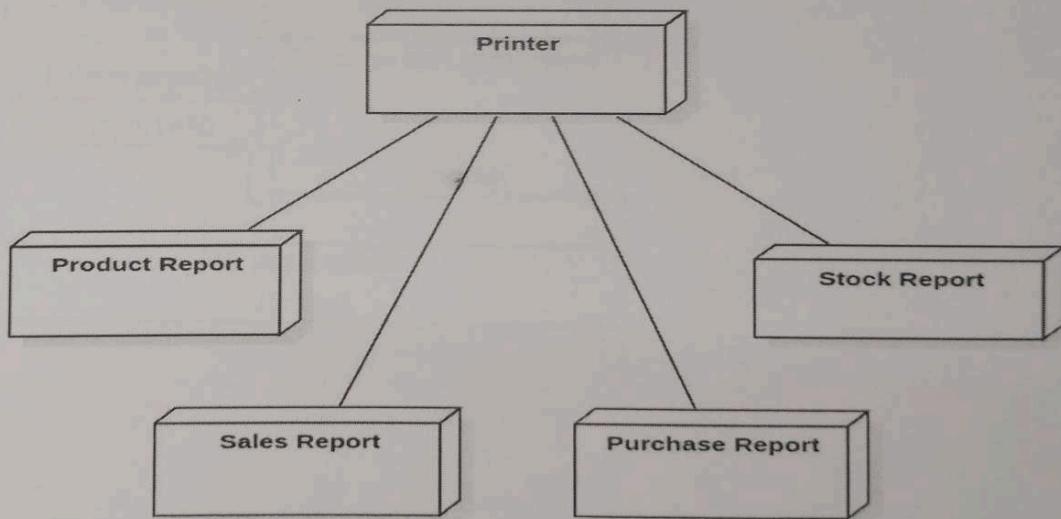
CLASS DIAGRAM:



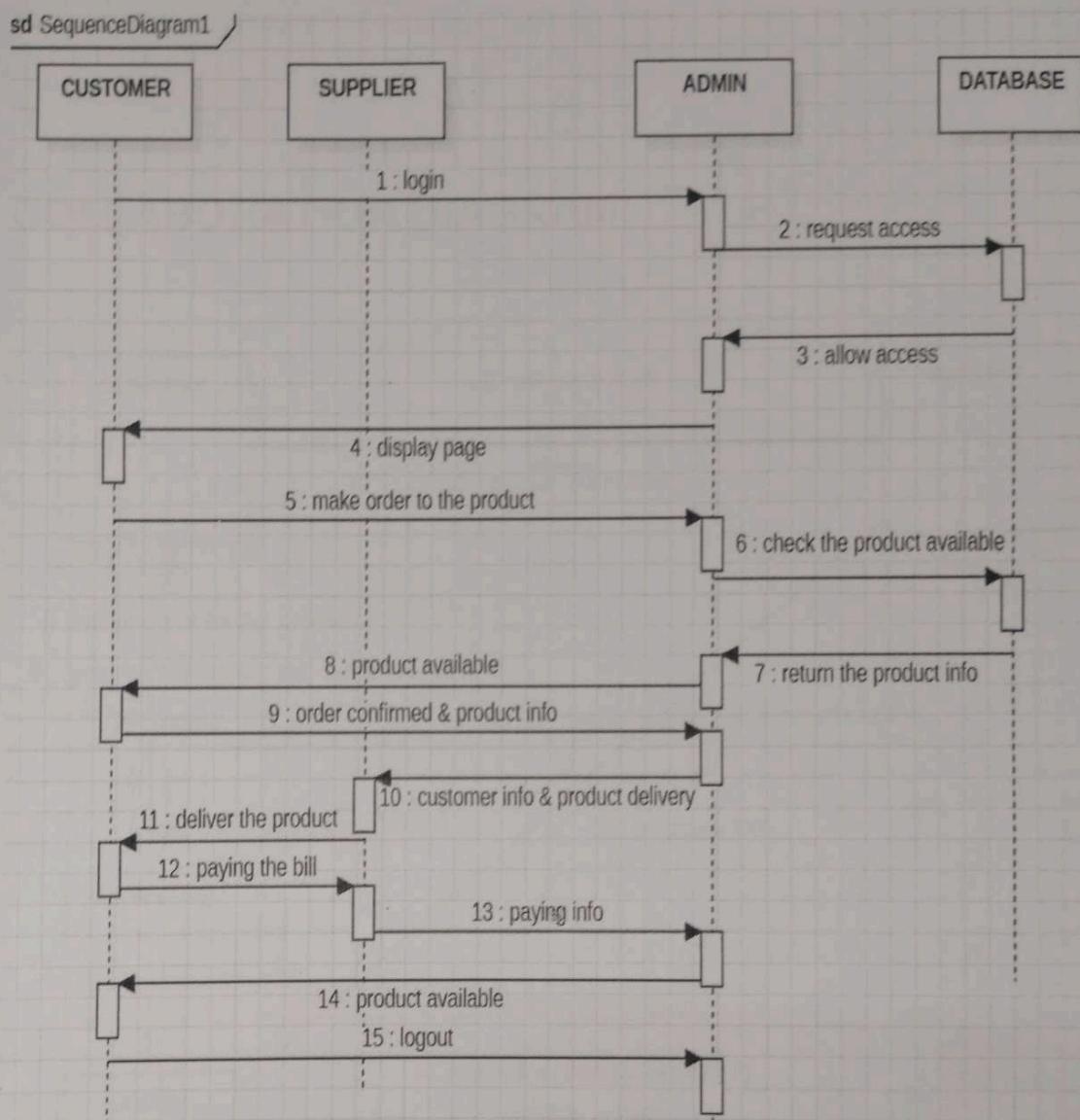
COMPONENT DIAGRAM:



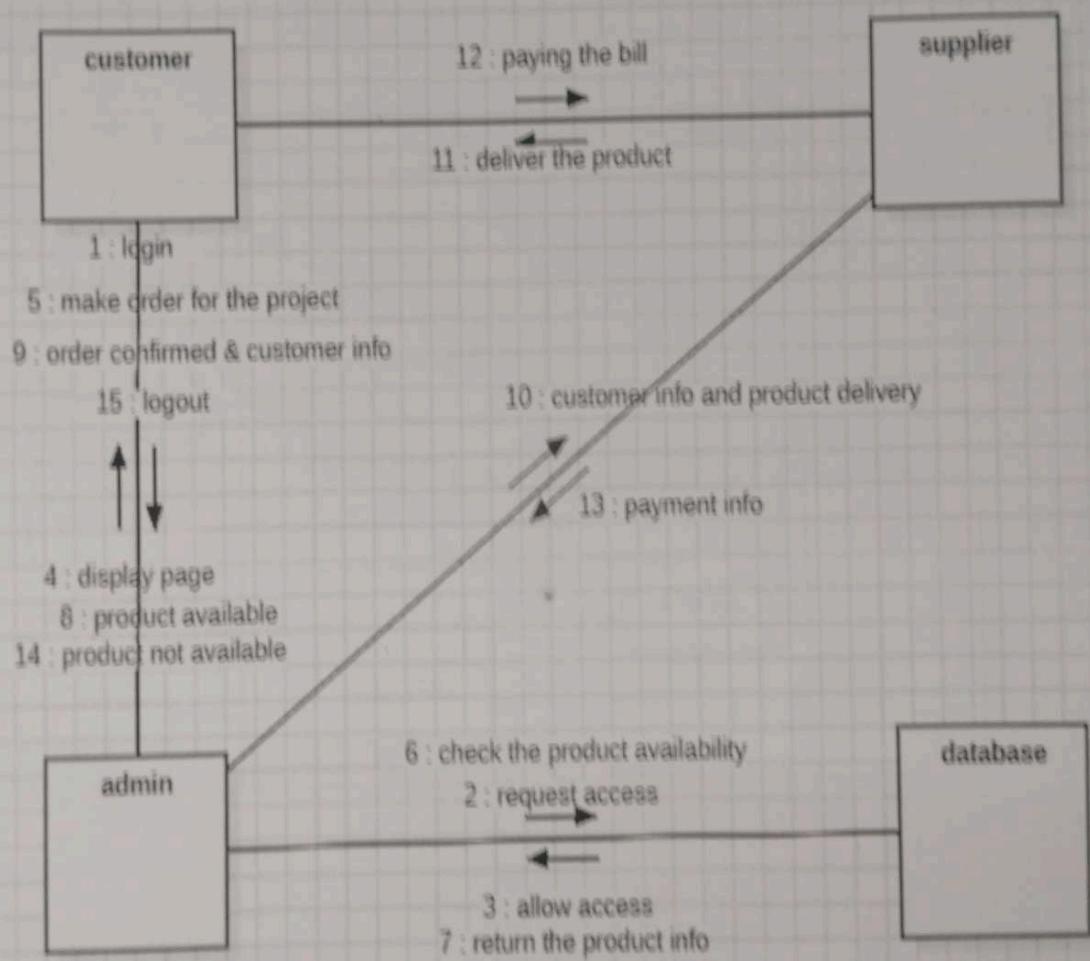
DEPLOYMENT DIAGRAM:



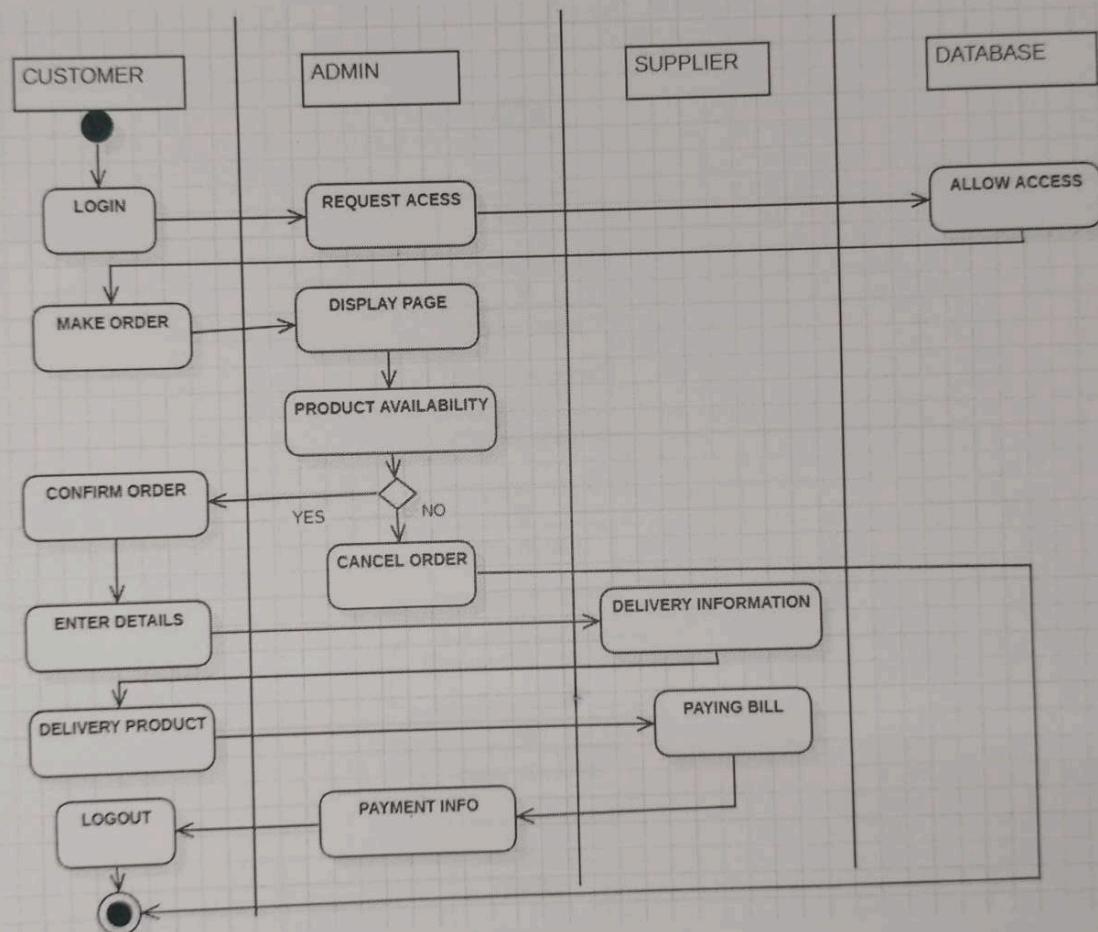
Sequence Diagram:



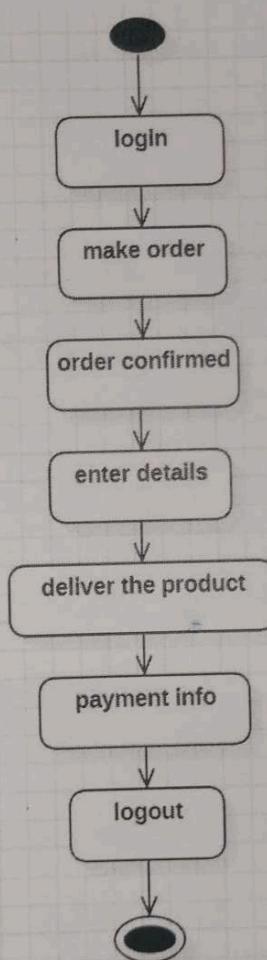
COLLABORATION DIAGRAM:



ACTIVITY DIAGRAM:



STATE CHART DIAGRAM:



Ex. No. : 6

Selenium

Date : 24/02/2024

Introduction -

Selenium is an open-source automated testing framework used for validating web applications across various browsers and platforms. It allows testers to automate browser interaction and simulate user behaviour on web pages. It enables the creation of automated test cases, making it a powerful tool for functional testing, regression testing, and performance testing.

How it works -

Selenium interacts with web elements by emulating user actions such as clicking buttons, filling forms and navigating through pages. It can work in multiple programming languages like Java, Python, C++ etc and it utilizes with browser specific drivers to communicate with respective browser.



Advantages -

(i) Cross-browser compatibility -

Selenium allows you to test your web application on different browsers such as chrome, Firefox, Safari and Edge. This helps ensure that your application works correctly across all popular browsers.

(ii) Supports multiple programming languages -

Selenium supports various programming languages such as Java, Python, C#, Ruby and JavaScript. This makes it flexible for teams to choose their preferred language.

(iii) Automation -

Selenium allows you to automate repetitive tasks, saving you time and reducing the risk of human error.

(iv) Open-source -

Selenium is open-source, meaning that it is free to use, and its community constantly improves it by adding new features and fixing bugs.

(v) parallel testing -

Selenium allows you to run tests in parallel across multiple browsers and platforms, which helps save time and increase efficiency.

Disadvantages -

(i) Limited support for Desktop applications -

Selenium is primarily designed for web application testing and has limited support for testing desktop applications.

(ii) NO Image Testing -

Selenium cannot directly test images, making it challenging to verify certain visual aspects of a web application.

(iii) Handling Dynamic Elements -

Selenium can sometimes face challenges when dealing with dynamic web elements that change frequently, requiring additional efforts in script maintenance.

Conclusion -

Overall Selenium is a powerful tool for automating web app testing, offering cross-browser compatibility, language support and robust functionality. However it requires a learning curve and ongoing maintenance but its open source nature and strong community support make it a valuable asset for testing teams.



EX. No. : 7

Date : 05/03/2024

Watir

(4)

Introduction -

WATIS stands for Web Application Testing Information System is a open-source web application testing framework and is designed to make writing selenium tests simple and efficient. Watir is most commonly used for its browser support with testing frameworks like RSpec, cucumber, etc.,.

How it works -

Watir works by providing a platform where testers can create and execute test cases, track bugs, generate reports and collaborate with team members. It offers a user friendly interface with features such as test case management, bug tracking and integration with other testing tools.



Advantages -

(i) Open Source -

WATIS is an open source tool and very easy to use.

(ii) Automation -

WATIS can automate various testing processes, reducing the need for manual intervention and saving time.

(iii) Scalability -

It can handle testing for web applications of different sizes and complexities, making it suitable for both small-scale and large-scale projects.

(iv) Efficiency -

WATIS enhances the efficiency of the testing process by streamlining workflows, identifying issues early etc,...

(v) Comprehensive Testing -

It generates comprehensive reports helping testers and developers to analyze test results and identify areas for improvement.

Disadvantages -

(i) Learning Curve -

Users require time to learn how efficiently use WATIS, especially if they are new to testing tools.

(ii) Limited Support -

WATIS has limited support compared to commercial test tools.

(iii) Integrating Challenge -

Integrating WATIS with other tools or systems require additional effort and expertise.

(iv) Maintenance -

Users may need to invest time and resources in maintaining and updating WATIS to ensure compatibility with evolving web techniques.

Conclusion -

WATIS is a valuable tool for testing web application, offering flexibility customization and collaboration features drawbacks like learning users and limited support its open source nature and comprehensive testing capabilities make it a preferred choice for many software testing teams organization on improve quality and reliability of web applications while reducing testing costs.

Ex. No.: 8

Apache JMeter

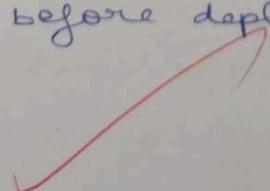
Date : 13/03/2024

Introduction -

Apache JMeter is an open source JAVA based tool designed to load test functional behaviour and measure performance. It supports various protocols such as HTTP, FTP, HTTPS etc.,. It can be used to simulate a heavy load on a server, group of servers, network to test its strength or to analyse overall performance under different load types.

How it works -

Apache Jmeter is a performance testing tool where users create test plans simulating virtual user's interaction. Thread groups differ user load, samplers mimic actions and listeners analyze results. Assertions validate responses, timers introduce delays and config elements configure variables with features like ramp-up, JMeter gradually applies load for realistic simulation , aiding in identifying , performance issues before deployment .



Advantages -

(i) Open-Source -

It is open source, providing free access to its source code and fostering a collaboration community thus reducing cost, allows for continuous improvement through community contributions.

(ii) Versatility -

Supporting various protocols like HTTP, FTP and JDBC, JMeter is versatile, making it suitable for testing a wide range of applications including web server, database and more.

(iii) Scalability -

JMeter enables scalable testing by simulating large number of virtual users, allowing users to assess how an application performs under different levels of loads and stress.

(iv) User friendly interface -

JMeter is accessible to users with different levels of expertise test plans can be easily created and configured without extensive technical knowledge.

(v) rich set of samplers and listeners -

JMeter provides a comprehensive toolkit with a variety of samplers to stimulate user and listeners for analyzing test results. This set of features enhance the depth and accuracy of performance testing.

Disadvantages -

(i) Learning curve -

JMeter has a steep learning curve for beginners especially those new to performance testing concepts proper training may be required to utilize its features effectively.

(ii) Resource intensive -

Running large scale tests with a high number of virtual users can be resource intensive it impact machine performance and require substantial memory and CPU resources.

(iii) Limited real browsers -

JMeter focus on protocol level testing and lacks advanced features for simulating real browser behaviours for scenarios requiring realistic browser interaction, alternative tool may be suitable.

(iv) Limited reporting capabilities -

Some users find reporting capabilities to be less sophisticated compared to specialized ~~tools~~ users want ~~special~~ to export result for more analysis.

(v) Limited built-in collaboration -

Collaborative features are limited. Integration with version control systems are necessary for effective collaboration on that plans.

Conclusion -

APACHE JMETER is a robust open source tool recognized for scalable performance testing across diverse applications its versatility user friendly interface active community contribute to its popularity challenges including learning curve, resource intensity, advanced reporting, limitations in real browser simulation JMeter remains a reliable choice for performance testing excelling in scenarios aligned with its features.



Ex.No. : 9

46

Date : 20/03/2024

TestNG

Introduction -

TestNG is an automation testing framework in which NGI stands for "Next Generation".

It facilitates robust and efficient testing of Java applications, offering features for various testing scenarios including unit, functional and integration testing.

How it works -

Test NGI operator based on annotations, allowing developers to define test method setup and teardown procedure and manage test dependencies easily. It supports parameterized grouping of test, parallel execution and comprehensive reporting.



Advantages -

(i) Flexible Annotations -

Testing provides a wide range of annotations, giving developers granular control over test execution flow and behaviour.

(ii) Parameterization -

It allows test to be parameterized, enabling the executing of the same time test method with different sets of data.

(iii) Grouping and Dependency Management -

Testing test to be parameterized, enabling the execution of the same time test method with different sets of data.

(iv) Parallel Execution -

Testing supports parallel execution of tests across multiple threads or processes, optimizing test suit performance.

(v) Listeners and Reporters -

It offers built in listeners and reporters to generate detailed test reports and integrate with continuous integration (ci) systems easily.



Disadvantages -

(i) Learning curve -

Although TestNG is relatively easy to get started with mastering advanced features and best practices may require some learning.

(ii) Limited Language Support -

Testing primarily targets Java applications, limiting its usage in projects developed in other programming languages.

(iii) Integration challenges -

Integrating TestNG with certain IDEs or build systems might require additional configuration or plugins.

(iv) Community and support -

While TestNG has a decided user community it might not be as extensive as some other testing frameworks, leading to potential challenges in finding support for specific issues.

Conclusion -

TestNG is a powerful testing framework for Java applications, offering a wide range of features to streamline test automation and ensure code quality. Despite its advantages such as flexible annotations, parameterization and parallel execution support, developers should consider its learning curve, and integration projects. Overall TestNG remains a popular choice for Java testing due to its rich feature set and robust functionality.

