

Gem and Jewelry Store Management System

Project Report



Sri Lanka Institute of Information Technology
IT2080 Information Technology Project

Group ITP_WD_B9_14

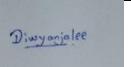
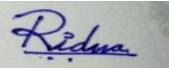
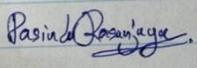
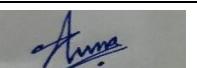
May 2024

Appendix 2 – Declaration

Declaration

This project report is our original work and the content is not plagiarized from any other resource. References for all the content taken from external resources are correctly cited. To the best of our knowledge, this report does not contain any material published or written by third parties, except as acknowledged in the text.

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Abstract

The project focuses on creating an advanced web application for Moonlight Shop in order to address important business difficulties and improve operational efficiency. The full system includes unique features including online store inspection and ordering, better inventory management, and enhanced employee management capabilities. By providing individualized shopping experiences and properly handling feedback from customers, the system improves client satisfaction. The system also focuses on increasing productivity, ensuring data security, and encouraging employee collaboration. Overall, The application is designed with modern development technologies, the project plans to develop Moonlight Shop as a leading gem and jewelry retailer, satisfying changing consumer demands and establishing the company for long-term success in a highly competitive market.

Acknowledgement

We extend our deepest gratitude to all those who contributed to the success of our endeavor. A heartfelt thank you is owed to Mrs. Geethanjali Wimalaratne, the lecturer overseeing our Information Technology Project (ITP), for generously dedicating her time to address our project-related queries. Her guidance was invaluable in navigating the complexities of our work. Special appreciation is also reserved for Ms. Sasini Hathurusinghe, our project supervisor, whose unwavering support and mentorship were instrumental throughout the entire semester. Her expertise and encouragement propelled us toward our goals.

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Table of contents

Contents

List of Tables	5
List of Figures	6
Introduction	8
Background	8
Problem and motivation	8
Problems	8
Motivation.....	9
Literature review	10
Aim and objectives.....	12
Aim of the System	12
Object of the System	12
Solution overview	13
Methodology.....	13
Implementation Method.....	13
Tools and Technologies.....	15
Requirements engineering methods.....	19
A clickable link to the Git repo	19
Requirements.....	19
Functional requirements	19
Nonfunctional requirements	26
Technical requirements	27
Design and Development.....	28
High Level Architecture Diagram.....	28
Use case Diagram of Gem and Jewellery Store Management System.....	29
ER Diagram of Gem and Jewellery Store Management System.....	30
Class Diagram of Gem and Jewellery Store Management System.....	31
Activity Diagrams.....	32
Sequence Diagrams.....	40
State Chart Diagrams.....	49
Interfaces.....	56
.....	60

.....	60
.....	61
Testing	79
Test Case Design	79
Evaluation and Conclusion	94
Evaluation.....	94
Conclusion.....	94
References.....	95

List of Tables

Table 1 Test the user registration Function.	79
Table 2 Items added to Cart.	80
Table 3 Test the add gem function in gem catalogue management system	81
Table 4 Test the inquiry submission functionality in the inquiry form.....	83
Table 5 Place order for supplies	84
Table 6 Test the Add Employee - Employee Management System	85
Table 7 Test the material management function.	86
Table 8 Test the material management function	87
Table 9 Test the Feedback & Rating Function.....	89
Table 10 Test the Feedback & Rating Function.	90
Table 11 Test the Jewelry management function.....	91
Table 12 Test the Jewelry management function.....	93

List of Figures

Figure 1 High Level Architecture Diagram.....	28
Figure 2 Use case Diagram	29
Figure 3 ER Diagram of Gem and Jewelry Store Management System	30
Figure 4 Class Diagram of Gem and Jewelry Store Management System	31
Figure 5 Activity diagram of User Management process	32
Figure 6 Activity diagram of Order Management process	33
Figure 7 Activity diagram of Supplier Management process	34
Figure 8 Activity diagram of Material Management process	35
Figure 9 Activity diagram of Employee Management process.....	36
Figure 10 Activity diagram of Customer affair Management process.....	37
Figure 11 Activity diagram of Gem Catalogue Management process	38
Figure 12 Sequence diagram of Registration process	40
Figure 13 Sequence diagram of login process.....	41
Figure 14 Sequence diagram of Add new gem entries process	42
Figure 15 Sequence diagram of Add Items to Cart process	43
Figure 16 Sequence diagram of Employee Management System process.....	44
Figure 17 Sequence diagram of Material Management System process.....	45
Figure 18 Sequence diagram of Supplier Management System place order for supplies.....	46
Figure 19 Sequence diagram of Customer affairs Management process.....	47
Figure 20 Sequence diagram of Customer Jewelry Management process	48
Figure 21 State chart diagram of User Management process.....	49
Figure 22 State chart diagram of Gem Catalogue Management process	50
Figure 23 State chart diagram of Order Management process.....	51
Figure 24 State chart diagram of Material Management process	52
Figure 25 State chart diagram of Supplier Management process.....	53
Figure 26 State chart diagram of Employee Management process	54
Figure 28 State chart diagram of Jewellery Catalogue Management process	55
Figure 29 Home Page	56
Figure 30 Register page	58
Figure 31 Sign in page	59
Figure 32 User Account Page	60
Figure 33 User Management Dashboard	61
Figure 34 Jewelry Catalogue	62
Figure 35 Add to cart.....	63
Figure 36 Checkout.....	64
Figure 37 Order Management Dashboard	64
Figure 38 Jewelry Management Dashboard.....	65
Figure 39 Gemstone Catalogue	66
Figure 40 Contact us form	67

Figure 41 Gem Catalogue Dashboard.....	67
Figure 42 Gem Entry Form	68
Figure 43 Gem Stock	68
Figure 44 All Inquiries.....	69
Figure 45 Material Management Dashboard	69
Figure 46 Add Material Form	70
Figure 47 Supplier Management Dashboard	72
Figure 48 Supplier details Page	73
Figure 49 Employee Management Dashboard.....	74
Figure 50 Add Employee Form	74
Figure 51 Employee Details Page	75
Figure 52 Feedback form.....	77
Figure 53 Feedback Dasboard	78

Introduction

Background

Moonlight Gems & Jewelry is in Kalutara which is one of a city that appreciated by foreigners. This shop has been crafting handmade jewelry and offering genuine gemstones for over two decades. Established in 1996, this shop has become synonymous with exceptional craftsmanship and quality. With a reputation built on timeless designs and a commitment to authenticity, Moonlight Gems & Jewelry has gained the trust of their customer base. This shop is famous for their unique collection of jewelries that has received positive feedback from satisfied clients. The Moonlight provides warm and personalized service, making every visit truly unforgettable. As a trusted name in the industry, Moonlight Gems & Jewelry continues their legacy, not only providing jewelry but also moments of happiness. Moonlight Gems & Jewelry is powered by a team of 15-20 dedicated and skilled working employees, each team member plays a vital role in the shop's success.

Problem and motivation

Problems

- Manual gem and jewelry stock inventory management

Keeping track of gemstones and ready-made jewelry inventory manually can lead to errors, anomalies, and inefficiencies. Without an automated system, it's challenging to maintain accurate stock levels, leading to stockouts or overstocking.

- Limited visibility into gemstone and jewelry details.

It's referring to the lack of comprehensive information and access to detailed information of gemstone and jewelry items within the inventory. This staff may have difficulty accessing detailed information about each gemstone and jewelry item, such as type, color, weight, clarity, metal type, design and price. The shop staff may struggle to provide accurate and detailed information to customers who inquire about specific gemstones or jewelry items.

- Messy order handling and keeping in touch with customer feedback.

Processing customer orders manually can be time-consuming and prone to errors. This unproductiveness can be a main point to delays in fulfilling orders, impacting customer satisfaction, and potentially resulting in lost sales.

- Poor employee management

Poor employee management within the gem shop, where numerous jewelry makers are employed, denotes ineffective practices in overseeing and coordinating the workforce. This encompasses issues such as haphazard scheduling, limited tracking opportunities and high turnover rates. With multiple jewelry makers, these challenges can exacerbate operational inefficiencies, diminish employee morale, and compromise the whole success of the company.

- Competition from online retailers

Without a modern online platform and digital marketing strategies is a significant challenge for this business, and the shop may fall behind competitors in the digital marketplace. This challenge is exacerbated by the potential lack of an online presence or robust digital marketing strategies, which may hinder the shop's ability to reach and engage with customers online.

- Inefficient metal inventory management

The shop is facing inefficiencies in its metal inventory management processes. Additionally, the absence of automated notifications for low material stock levels hampers the timely replenishment of supplies, affecting production schedules and customer satisfaction.

- Inefficient supplier management

Handling supplier data and transactions by hand can lead to misunderstandings, mistakes, and delays. The shop owner might have trouble finding suppliers and negotiating rates if supplier management is not done systematically.

- Limited customer engagement

Limited customer engagement refers to the absence of effective strategies or features in the gem shop to interact with customers and personalize their shopping experience. This lack of engagement can lead to reduced repeat business and lower customer lifetime value.

Motivation

The motivation behind addressing the challenge faced by the gem & jewelry shop, including competition from online retailers and limited customer engagement. The client is currently running their business operations relating to the gems & jewelry shop in a completely inefficient manner. With technology in the current world, we have the ability to provide a solution with highly efficient outcomes with relatively low upkeep. In today's fast-paced retail landscape, where consumer preference rapidly evolves towards online shopping and personalized experiences, the gem and jewelry shop must adapt and innovate to remain relevant and competitive.

With the rise of online retail giants and changing consumer behaviors, the shop must recognize the importance of establishing a strong online presence and leveraging digital channels to reach and engage with customers. By using digital marketing techniques and technologies, the shop may reach a wider audience, draw in new clients, and successfully compete with online merchants.

Addressing the identified challenges presents an opportunity for the gem shop to unlock new avenues for growth and profitability. By improving employee management practices, optimizing inventory management processes, and enhancing the overall customer experience, the shop can streamline operations, increase efficiency, and drive bottom-line results.

Literature review

Moonlight Gems & Jewelry, a long-established gem and jewelry shop in Kalutara, is facing a number of operational issues that jeopardize its competitiveness and efficiency. This literature review will look into existing studies and solutions to Moonlight Gems & Jewelry's highlighted concerns. By analyzing relevant literature, this work aims to inform the construction of a comprehensive system to address the highlighted issues. To effectively address these difficulties, it is critical to analyze different systems on the market and determine their applicability for the business's specific requirements. This comparison is intended to provide significant insights into the features, functions, and benefits provided by various systems, allowing Moonlight Gems & Jewelry to make informed decisions regarding the implementation of a comprehensive solution.

By assessing features like as, User management, Order Management, Material management, Supplier management, Gemstone Catalogue Management, Jewelry Catalogue Management, Employee management, Customer affair management and Employee management. This comparison will show each system's strengths and limitations. Furthermore, it will reveal how effectively these systems connect with Moonlight Gems & Jewelry's specific goals and objectives.

Function	Moonlight	Prestigegemsstore[1]	Isinigems[2]	Ceygems[3]
User management	✓	✓	✓	✓
Order Management	✓	✗	✗	✗

Material management	✓	✗	✗	✗
Supplier management	✓	✗	✗	✗
Gemstone Catalogue Management	✓	✓	✓	✓
Jewellery Catalogue Management	✓	✗	✓	✓
Employee management	✓	✗	✗	✗
Customer affair management	✓	✓	✗	✓

Aim and objectives.

Aim of the System

Our online gems and jewelry management system aims to use technology to manage customer service as well as employee needs more efficiently and effectively.

Mainly based on customer requirements, store inspection is done by checking and booking the necessary jewelry online, obtaining details to ensure the safety of the product and obtaining customer approval. Also, employee management is another advantage of the system, which makes management easier, and more attention will be paid to the employee value system. Also, the head of the organization can run the operations more efficiently, including customer management, gem and jewelry tracking, supplier and employee management, customer review handling, order processing and inventory management. Gems and Jewelry Shop Management System is a critical tool designed for Moonlight Shop. Improve operational efficiency and enhance customer satisfaction. It focuses on providing. Expanding with features like seamless online experience, data-driven decision-making capabilities and global support currency exchange and international shipping management. This makes the system essential to the Gems and Jewelry system for this store's top-level distribution purposes.

Moonlight Gems & Jewelry shop plays a leading role in industry innovation, staying true to our values of excellence and commitment to meet changing customer needs. This system is not just a technological upgrade, it is a smart investment that will directly contribute to ensuring the sustainable success and sustainability of our Gems and Jewelry business in the future.

Moonlight Gems & Jewelry's vision is to be the leading and respected jeweler in Sri Lanka. And with this system we strive to maintain unsurpassed quality by committing to expanding our product catalog as well as our market share.

Object of the System

- Enhancing productivity

Work from home aims to enhance productivity by providing remote inspection of stored gems and jewelry in conjunction with the system as per customer requirements and providing them with the necessary tools and resources and support to perform their work more efficiently. Facilitates taking as well as maintaining.

- Improve communication and collaboration.

A work from home management system will improve the effectiveness of communication and collaboration between remote employees, managers and stakeholders. In this case, they will be able to communicate with you wherever you are with the integrated communication methods of the system. Because communication systems are integrated into the system, the conversation will be more secure than external methods.

- Ensuring data security

The work from the home management system aims to ensure the security of the company's sensitive data and files. In this case, we adopt various security methods such as encryption, tokens and access control. Document routing through the application using secure methods.

- Performance monitoring and management

The work from home system aims to enable managers to monitor and supervise the performance of employees effectively. With this feature, managers can collect highly accurate data about employee performance and use it for many tasks like calculating bonuses, employee status, etc.

- Employee encouragement

We motivate employees in many ways. With the work from home management system, it will be very effective because we can track the performance of employees digitally more accurately than physically. Employees will be encouraged to work with the simple and user-friendly UI of this system.

Solution overview

- This system aims to create a full web-based system using the MERN stack (MongoDB, Express.js, React, and Node.js) that integrates smoothly with physical shop and factory activities. The system has a variety of features, including user management, gem and jewelry tracking, supplier and employee management, customer review handling, order processing, and inventory management.
- The Gem and Jewelry Shop Management System for Moonlight shop is a crucial tool designed to improve operational efficiency and elevate customer satisfaction. It focuses on providing a seamless online experience, enabling data-driven decision-making, and supporting global expansion with features such as currency exchange and international shipping management. This system is integral to Gems & Jewelry System for this shop's goals of delivering top-notch service in the gem and jewelry industry.
- As we welcome this game-changing technology, Moonlight Gems & Jewelry shop takes a leading role in industry innovation, staying true to our values of excellence and dedication to meet changing customer needs. This system isn't just a tech upgrade; it's a smart investment in ensuring the lasting success and sustainability of our gem and jewelry business in the future.

Methodology

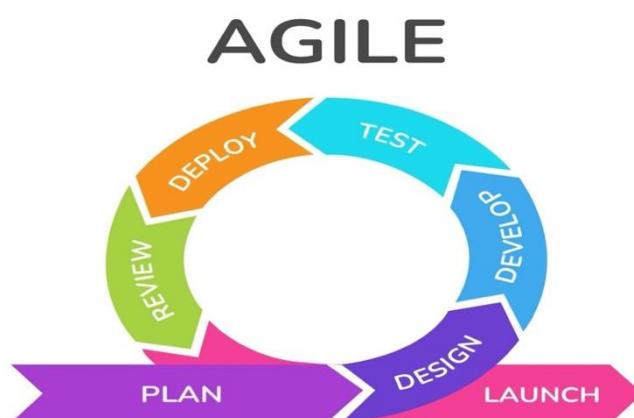
Implementation Method

Agile Manifesto – Software process model

Agile methodology is a project management approach that prioritizes cross-functional collaboration and continuous improvement. It divides projects into smaller phases and guides teams through cycles of planning, execution, and evaluation.[4]

Reasons for selecting Agile Methodology

- **Flexibility:** Agile allows for changes in requirements throughout the development process, which makes it suitable for projects with changing requirements.
- **Customer satisfaction:** In the Agile, Customer is always involved in the decision-making process. In the traditional framework, the customer is only involved in the planning situation but, their admin keeps making changes according to the customer feedback. Because of that ensure that the final product is truly according to their requirements.
- **Collaboration:** Agile methodology is teamwork, communication, and collaboration between team members. This helps to promote a sense of shared ownership and accountability and can lead to better solutions.
- **Reduce risks:** There is one main point Agile methodology will never fail. Agile works in small sprints that focus on continuous delivery. When a particular approach doesn't go as planned, a small piece can still be salvaged and used in the future.
- **Superior quality product:** Testing is an integrated part of the project execution phase, which means that the overall quality of the final product is greater. You can remove all the unnecessary features when doing the testing part.
- **Transparency:** Agile methodology emphasizes transparency through regular communication and collaboration. This ensures that all stakeholders have visibility into the development process and can provide valuable input.



[6]

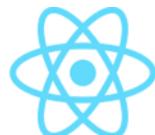
Tools and Technologies

We use MERN Stack technology. “MERN” stands for four key technologies. Those four key technologies are MongoDB, Express.js, React.js and Node.js.



Technologies

Front-End - React.js



React.js is an open-source user interface library. This is useful for front-end development implementations.

Some of the key features of React include:

- **Component-based architecture:** React uses a component-based architecture, which means that UI elements can be broken down into smaller reusable components. This makes it easier to manage complex UIs and reduces code duplication.
- **Declarative programming model:** React uses a declarative programming model, which means that you tell it what you want to happen, and it takes care of the details. This makes it easier to write code that is easier to read and understand.
- **Virtual DOM:** React uses a virtual DOM, which is a lightweight representation of the actual DOM. This makes it possible to update the UI more efficiently, without having to update the entire DOM.
- **JSX:** React uses JSX, which is a syntax extension that allows you to write HTML-like code in your JavaScript. This makes it easier to create UI components and templates.
- **One-way data binding:** React uses one-way data binding, which means that data flows in one direction, from parent components to child components. This makes it easier to manage data in large applications.

- **Large community:** React has a large and active community of developers, which means that there are many third-party libraries and tools available for building React applications.[5]

Back-End - Node.js



Node.js is an open-source and cross-platform server environment which is useful for backend development implementations. Node.js allows to run JavaScript on the server.

Some of the key features of Node.js include:

- **Asynchronous programming model:** Node.js uses an event-driven, non-blocking I/O model that makes it possible to handle large numbers of concurrent connections without blocking the main thread.
- **Fast performance:** Node.js is built on the V8 JavaScript engine, which is designed for fast performance. This makes it possible to build applications that are both fast and scalable.
- **Large module ecosystem:** Node.js has a large and growing ecosystem of modules and libraries that can be used to extend its functionality and make it easy to build complex applications.
- **Cross-platform:** Node.js runs on a wide range of operating systems, including Windows, macOS, and Linux. This makes it easy to develop and deploy applications on multiple platforms.
- **Command-line interface:** Node.js comes with a command-line interface that makes it easy to interact with the runtime environment and perform common tasks.
- **Easy to learn:** Node.js is built on JavaScript, which is a popular programming language that many developers are already familiar with. This makes it easy to get started with Node.js and start building applications quickly.[6]



Express.js is a backend web application framework for Node.js, released as free and open-source software under the MIT License. It is designed for building web applications and APIs. It has been called the de facto standard server framework for Node.js.[7]

Database - MongoDB



MongoDB is a source-available cross-platform and document-oriented database program.

Some of the key features of MongoDB include:

- **Flexible Document Model:** MongoDB's document model allows for flexible data structures, making it easy to store data in a way that reflects the needs of an application.
- **Scale-out Architecture:** MongoDB's architecture is designed for horizontal scaling, which means that you can scale your application by adding more servers to a cluster.
- **High Availability:** MongoDB provides built-in replication and failover support to ensure that your database is always available, even in the event of hardware or network failures.
- **Rich Query Language:** MongoDB provides a powerful query language that supports complex queries, indexing, and aggregation.
- **Schemeless Design:** MongoDB does not enforce a predefined schema, which makes it easy to evolve your data model over time without having to change your application code.

- **Support for Geographic Data:** MongoDB provides support for geographic data and supports geospatial queries.
- MongoDB is widely used in web applications, mobile apps, and other types of applications where flexibility and scalability are important. It has a large and active community of developers and is supported by many third-party tools and libraries.[8]

Tools

Visual Studio Code - Code editor

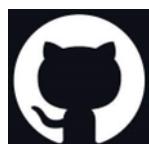


Visual Studio Code is an IDE which we use to develop coding. also commonly referred to as VS Code, is a source-code editor made by Microsoft with the Electron Framework, for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. [9]

Benefits for us

- Cross-platform support
- Intuitive user interface
- Large extension marketplace
- Integrated terminal
- Debugging capabilities
- Git integration

Git & GitHub - Version controlling



GitHub is a code hosting and web-based platform. It is used for version control. GitHub could quite be useful in collaborating between projects. All projects which are individually done by group members can merge to make one integrated project.

Reasons for choosing GitHub

- Large community – This can contribute repositories like private or public.
- Integration with other tools – Such as Jenkins, JIRA, Slack and visual studio code.
- User friendly interface.
- Security – This includes two factor authentications, encrypted and it can make private repositories.
- Continuous Integration and development – It can help streamline the process of building, testing, and deploying your code.
- Availability of Open-Source Project. [10]



Git is a distributed version control system that tracks changes in any set of computer files, usually used for coordinating work among programmers.[11]

Benefits for us

- Version controlling
- Collaboration
- Branching and merging
- Speed
- Backup

Postman - API Testing



Postman supports a wide range of request methods, including GET, POST, PUT, DELETE, and many others, and allows us to customize headers, parameters, and other request options. We can also use Postman to set up tests for your APIs, including assertions to check that the responses we receive are correct.[12]

Figma – UX/UI Designing



Figma is a web-based collaborative design tool used by designers, developers, and product teams to create and share user interfaces, visual designs, and prototypes. It allows for real-time collaboration between team members, making it easy to work together on a project from anywhere.[13]

Heroku – CI/CD configuring



Heroku is a cloud platform as a service (PaaS) supporting several programming languages. It allows developers to deploy, manage, and scale their applications without having to worry about infrastructure or server management. With Heroku, we can quickly deploy our applications written in a JS.[14]

SonarQube - Code Quality



SonarQube solution is a self-managed, automatic code review tool that systematically helps you deliver *clean code*. As a core element of our SonarQube integrates into your existing workflow and detects issues in your code to help you perform continuous code inspections of your projects.[15]

Trello - Project Management

Trello is a web-based project management tool. It is designed to be highly customizable and provides a wide range of features to help us manage our project more effectively. We can create checklists,



attachments, and custom fields for each card, and use integrations with other tools such as Google Drive to streamline project workflow.[16]

Requirements engineering methods

Interview

Alternatives

- Ethnography
- Brainstorm
- User Observation
- Documents analysis
- Questionnaires or survey

Reasons for choosing Interview

- No time consuming
- Easier to schedule
- No need to lead a group activity
- Appropriate for eliciting business requirements
- Executives who do not have a lot of time to meet

A clickable link to the Git repo :

<https://github.com/Tharindu-Sandeepa/Moonlight/tree/Test>

Requirements

Functional requirements

User management

The user management function in our system is designed to handle all user-related tasks with accuracy and efficiency, that function in our system is only forces on the system users not all employees because our client doesn't want to give login option for normal employees. A guest user can select, search and view items on the system. To buy an item they must login to the system as a customer. A guest user can register to our system by using sign up option. To register in our system, they need to fill in a registration form, in that form we gather important user information such as name, email, contact number and address. Also, they can set a username and a password. in that case the username must be

unique, and user need to set a strong password. After filling that form out the system verifies all details and gives the user a username and password. Then registered users can login as a customer by using their credentials.

After logging in to our system as a customer. They get new options such as my profile, my cart, and my orders. Using my profile option, they can edit and update their information and we give an option to change their password if they want. A customer can delete their account if they want. To offer a safe and better experience, user sessions are properly maintained, including session state monitoring, timeout management, and session data to identify the user.

In our system the managers can't register with the system. only the system manager can add them to the system. The system manager adds managers to the system and gives them a username and password to login to the system. After getting a username and a password they can login to the system as a manager.

Our system has deferent user interfaces for customers and managers. In the customer's view they can see products listings and other details while the manager's view they and do administrative tasks. Both customers and Managers use same login option to login to the system. But when login customers will redirect to homepage while managers redirect to the manager dashboard.

In the manager's dashboard they have administrative privileges. which allows them to add new users (Customers or Managers), edit user details and they can remove any user if necessary. They can search users by their username or name, which improves productivity and user management skills. Also, managers can generate comprehensive reports that include all registered users' details, offering useful insights into decision-making and company improvement.

Our user management function uses these features to ensure smooth operations and high user satisfaction.

Order Management

Based on the procedure described, an order management system includes several essential features designed to make order processing and customer communication easier. Customers should be able to add things to their cart and specify quantities as well as choose the products they want. Customers should be able to examine their cart contents or go to checkout after making their choices. Also allow customers the flexibility to update or cancel their orders before making payments. Customers should now see two buttons on the screen: one for seeing and reviewing their cart, and another for processing payments. Customers should be redirected to a secure payment gateway to finish their transaction after starting the payment process.

The system ought to notify the manager to prepare the order as soon as the payment is verified. When the order is prepared, the system needs to notify the consumer automatically that their order is prepared and ready for pickup. Customers can visit the store whenever it's convenient for them, pick up their things and check the status of their orders with the staff. To guarantee openness and effective administration throughout this procedure, the system must keep precise records of orders, payments, and order statuses. By facilitating clear communication and simple access to order status information, this smooth operation flow not only expedites the order management process but also improves the general customer experience.

Additionally, the system facilitates the creation of reports derived from order histories, offering valuable perspectives into previous procurement endeavors and customer correspondence. Managers and administrators can track sales performance, analyze patterns, and make well-informed company decisions with the help of this tool. Users may plan strategically and optimize operations by viewing detailed reports that provide insightful information about popular goods, revenue patterns, and consumer preferences.

In order to make browsing and retrieval of order-related information easier, users can also use a search tool to locate individual orders by their unique order ID or client name. Order management and customer support are made easier with this search feature, which also increases user efficiency by providing instant access to individual orders. Users will be able to quickly find and examine pertinent order information as needed, regardless of whether they are looking for a specific transaction or customer's details.

Customer affair management

When analyzing the problem in the current gem and jewelry management system, we found that there's no way to collect user feedback regarding their experience using the website, purchasing items through the site, or overall satisfaction. Therefore, the shop owner cannot get an idea of how their customers think about the shop and the customer service provided by the shop. As a solution to that, a customer affair management system is included in our system. This section manages all registered customer feedback.

Customers can add feedback or their experience for the website or purchased items they got. Once they give feedback, they can edit or delete that feedback according to their preference. Another thing is the user can give this feedback at anytime, anywhere, as the system is available 24x7. Those feedback, system handlers or administrators can improve the services they provide to customers.

After logging in and navigating to the relevant page, the customer affair manager can see the feedback they received regarding the service they provided to their customers. So, they can get a clear idea about the success of their service and product quality. Customer affair managers can only read the feedback they received, they cannot edit or delete it. But the customer affairs manager can remove inappropriate or offensive feedback.

When an unregistered user navigates to the feedback page, the user can search for jewelry, and each jewelry can see the previous customer's feedback and rating. So, the user can get a clear idea about the jewelry and the shop services.

When a customer submits new feedback, that feedback should be approved by the manager. The customer affair manager is the one who approves or rejects the user feedback. If the customer affair manager approves only, that feedback will display in the relevant place. Also, the customer affair manager can generate reports on customer feedback and ratings on jewelries.

Additionally, users or customers can contact shop owners using the support option. That page has a form to fill out. The user or customer can use their personal details to fill out a form and send it to them through the website.

Employee management

- Employee details management: -

Gems and Jewelry Shop Management System for Moonlight Gems and Jewelry Employee Management Directly Contributes. In this case, we will use CRUD operations. So, the manager will be able to add a new employee to the system, update the details of an existing employee, view existing employees' details and remove an existing employee. Through the system, a report containing employee details related to a seeker and a salary sheet report can be obtained by the system separately through the system manager. It is possible to easily find the details related to each employee by searching the employee number. Retrieving salary details on employee requirement is easily available through system manager. Confidentiality and security of employee details are ensured by the system manager. Retrieving and managing employee records is done by the system administrator, which helps maintain system functionality easily by updating changing data.

- Salary Management & Employee Evaluation: -

According to the work done for each employee, his salary is calculated and stored in the system. An employee is paid according to the employee's efficiency based on the number of hours worked per day. Here, the basic salary varies depending on the position of the employee. The system calculates the peripheral salary which includes the basic salary and overtime allowances (OT) as well as additional allowances (Bonus) related to each service. We have incorporated an appraisal system with a credit point system based on employee performance. The system will manually and automatically collect details of employee performance such as working hours, working on time, completing tasks on time, quality of end results of their assigned work. The system then generates some bonus points based on those details. These bonus points can be used for many functions like promotion offers, salary bonus calculations etc. So, this method will motivate the employees to perform at their best.

- Leave request management: -

In this case, when an employee requests leave, they must fill in the leave request form online. Once they have submitted the form will appear in the manager's leave requests list dashboard. Then the manager can review them and approve or reject them. Once the manager takes an action, the employee will inform with an email.

- Employee monitoring system: -

In this feature, we integrate an employee performance monitoring component into the system. With this component, the manager will be able to see whether the employees are working or not. The system can also be used to collect employee performance data such as employee working time, working time, working end time, efficiency etc. The relevant employee can get reports through the manager in terms of employee details, salary details, leave request details.

Supplier Management

During the assessment of the Gem & Jewelry shop management system requirement, it has been noted that the existing system lacks a specified area for the supplier manager to purchase supplies. In response, we offer a solution by enabling the supplier manager to order their required supplies using our system, thereby streamlining the purchasing process and ensuring efficient management.

After that, there was a problem with adding all the suppliers who interacted with the shop. To address this issue, we decided to give authorization to the supplier to create an account themselves. The suppliers can submit their details for the supplier manager to examine and integrate into the system. The supplier can add their details such as supplier name, email, phone number, gem catalog, material catalog, and

availability of gems and materials. Integrating suppliers into the system ecosystem facilitates improved communication and cooperation, boosting supply chain efficiency.

The supplier management section within the Gems and Jewelry shop management system serves as an extensive platform for managing all features related to the suppliers. It handles placing orders for supplies and supplier-related tasks. Here, both the supplier manager and supplier are the two main actors. All the suppliers are managed by the supplier manager. The supplier is outside of the system scope and the supplier manager is a part of the system itself.

In this Gems & Jewelry shop management system, we have indicated gems and materials as supplies. The supplier manager should order supplies when the material manager and gemstone catalog manager notify them that the shop is running out of supplies. The supplier manager can place orders for gems and materials through the supplier's profile.

The supplier manager can select the supplier and then choose the type of supply and quantity of the order. Also, the supplier manager can read the previous and upcoming order lists through the system. The supplier manager can have the ability to modify upcoming orders, and the supplier manager can edit the quantity of order, gem type, or material type.

Simultaneously, the supplier can see the order through their profile, and they can mark the order status as pending if suppliers accept the order. Additionally, the suppliers can reject orders if they are unable to complete them for any reason. Moreover, the system has provided the option to the supplier to delete their accounts if they are no longer conducting business with the shop.

Additionally, the system allows for the generation of reports based on order history, providing insights into past purchasing activities and supplier interactions. Furthermore, both the supplier manager and supplier can utilize a search function to find specific orders by unique order ID, facilitating navigation and retrieval of order-related information.

Material management system

Material management is the organized process of keeping track of a company's jewelry-making materials. Various materials are used for making and crafting jewelry, including gold, silver, white gold, yellow gold, rose gold, and more. In a jewelry shop, material management means keeping track of the different materials used to make jewelry and all relevant details about those materials. Such as price, quantity, supplier, quality, purchase dates, and other relevant information. When using this material management system, owners can gain several benefits.

Material stock changes when a jewelry maker uses materials to make jewelry or when suppliers deliver new stock. The material manager plays a special role by adding, deleting, updating, and viewing material stock in the system. The material manager should be able to add new materials to the system, providing details such as material type, quantity, and any other relevant information. The system should allow the material manager to delete materials that are no longer part of the stock. Material information, including quantity and details, should be updated to reflect changes such as usage by jewelry makers or updates from suppliers. A view functionality should be available for the material manager to see the status and details of the material stock.

The system is required to automatically send an email notification to the supplier manager when the stock material is low. This feature is very important for being informed about low stock situations. By using this feature, supplier managers can place an order for new stock from suppliers. It is very important for maintaining optimal inventory levels for the jewelry shop.

Material managers can search for relevant material details using material name, date, or supplier details. By using this search function, the material manager can save time when looking for specific information. When using this search function, the material manager can gain all relevant information associated with a particular search term.

Material managers and owners have the ability to generate a range of reports related to materials, enabling them to acquire an in-depth understanding of materials. By using this report function, owners can gain a clear understanding of the materials by generating reports. These reports provide insights into the quantities, available materials, and values of items in stock. These reports serve as essential tools for informed decision-making within the jewelry shop management system.

Gemstone Catalogue Management

When it comes to the shop gem inventory management system is focused on streamlining the process of adding new gemstones, recognizing the importance of keeping the inventory up to date with the latest additions. From providing a user-friendly interface for administrators and staff to input comprehensive details and visually appealing images, the system encourages prompt and accurate entry of new gemstones. This feature enhances the overall presentation of the gem inventory.

To that, the flexibility for administrators to modify existing gemstone information and delete outdated entries is motivated by the need for accurate and up to date inventory management. Recognizing that gemstone details or inventory status may change over time, this function allows administrators to maintain the accuracy and relevance of the inventory database. This feature motivates administrators by providing them with the control and flexibility to manage the inventory efficiently.

Additionally, the implementation of advanced search functionalities is motivated by the desire to enhance user experience and facilitate efficient exploration of the gem collection. In order to that customer may have specific preferences or requirements when searching for gemstones, this searching feature offers a wide range of search filters to cater to various needs. By making it possible for people to find particular gems fast using a variety of criteria, the system enhances usability, reduces search time, and rise up customer satisfaction.

The aim of including a reporting option is to provide administrators useful information about the gem inventory so they may take well-informed decisions. Understanding the importance of data driven decision making in inventory management, the system provides in-depth information on stock levels, sales figures, inventory trends and other elements of the gem inventory.

Furthermore, there is a gemstone comparison tool. The goal of introducing a gemstone comparison tool is to help consumers make well-informed sections by adding side by side comparison of gemstones. Realizing that buyers would need to examine many gemstones before planning, the system includes a comparison tool that shows distinctions, gives comprehensive specs, and makes suggestions.

These paragraphs focus on the motivation behind each function within the Gemstone Catalogue Management module, highlighting the benefits and user-centric approach of each feature.

Jewelry Catalogue Management

The Jewelry Catalogue Management System serves as a robust platform for efficiently handling the various aspects of jewelry inventory management. By seamlessly managing the addition, updating, and deletion of jewelry items, the system ensures that the catalogue remains current and accurate at all times. This functionality streamlines administrative tasks, reducing the likelihood of errors and inconsistencies in the inventory. Whether it's incorporating new additions to the collection, updating existing entries with revised information, or removing outdated items, the system provides a smooth and efficient process, ultimately enhancing the overall effectiveness of jewelry inventory management operations.

Within the catalogue, each jewelry item is meticulously documented with a wealth of detailed information. This comprehensive approach enables users to access in-depth descriptions, specifications, and other pertinent details associated with each piece of jewelry. Moreover, the inclusion of vivid and high-quality images enhances the visual representation of the jewelry, offering users an immersive experience. By providing such comprehensive information and captivating visuals, the system ensures that users gain a thorough understanding and appreciation of the jewelry collection, fostering engagement and interest.

User engagement lies at the heart of the system's design philosophy, aiming to provide an interactive and visually appealing experience for users as they explore the jewelry collection. Through intuitive interface design and interactive features, the system encourages active participation and exploration. Users can navigate through the catalogue effortlessly, browsing through different categories, filtering options, and viewing jewelry pieces with ease. By fostering such engagement, the system enhances user satisfaction and enjoyment, creating a compelling and memorable experience for users interacting with the jewelry catalogue.

Navigation within the jewelry catalogue is made effortless by the user-friendly features embedded within the system. Whether users are browsing, searching, or performing administrative tasks, the system ensures a seamless and intuitive experience. Adding new items to the catalogue, updating details, or removing entries are all streamlined processes, thanks to the system's efficient functionality. With clear navigation paths and intuitive controls, users can explore the diverse jewelry collection with confidence, maximizing their productivity and satisfaction with the system's usability and efficiency.

Beyond facilitating exploration, the system also provides valuable insights through its reporting capabilities. Users can generate straightforward reports that offer detailed analyses of the sales performance of each jewelry item over specified periods. These reports highlight key metrics such as sales counts, popular items, and sales trends, empowering users with actionable data for informed decision-making. By leveraging these insights, users can optimize their inventory management strategies, identify opportunities for growth, and make informed decisions to enhance the overall profitability and success of their jewelry business.

The system offers an innovative feature enabling customers to submit their bespoke jewelry designs seamlessly. Through a dedicated form accessible within the system, customers can articulate their design visions, preferences, and specifications with ease. This new functionality not only fosters direct engagement between customers and jewelers but also expands the system's capabilities to accommodate personalized creations. By empowering customers to contribute their unique design concepts, the

system enhances its versatility and relevance, catering to individual tastes and preferences. This feature underscores the system's commitment to facilitating a collaborative and customized experience for users, further enriching the overall jewelry browsing and purchasing journey.

Nonfunctional requirements

- User Friendly and Modern UI

The gem and jewelry management system should be friendly with both types of users who have technical knowledge and those who do not. Then we develop a UI that will be familiar with all users. This can be achieved by having an easily accessible interface and clear instructions.

- Availability

Users of the gem and jewelry management system should have functions to work with it on time and anywhere. Then Availability is the most important requirement we have focused on. The system has minimal downtime to ensure that items operations are not interrupted.

- Security and Privacy

As the gem and jewelry management system, we should be responsible for data of many users. Then We mainly focused on who to protect data of users without it going to the third-party users. Also, the system can use key derivation to password encryption and encourage users to create strong passwords that avoid reusing passwords across multiple accounts. The system can enforce password complexity requirements, such as a minimum length, a mix of uppercase and lowercase letters, numbers, and special characters.

- Reliability

The gem and jewelry management system must work with many users in real time. Gem and jewelry management system should have the ability to work with many users.

- Maintainability

The gem and jewelry management system should be easy to maintain and update, to ensure that it remains up-to-date and relevant. Also, Admin can access user accounts. If system rules or policies violated, admin can delete those user's account.

- Performance

Better performance web site allows users to interact with it quickly. Important is minimizing the loading and response time. Also, our payment system should be fast and responsive, with quick processing times and minimal lag.

- Responsive Design

Gem and jewelry management system can be accessed via Desktop view or Mobile view. Then we used responsive design to make it friendly with both mobile and desktop views.

- Data Backup

The gem and jewelry management system must work with data of many users, and we have responsibility to protect those. Then it is necessary to have a backup of data. Then we are planning to have a backup server.

Technical requirements

- MARN stack (MongoDB, Angular, React, Node.js) should be used for development.
- MongoDB should be used for data storage and management.
- Angular or react should be used for client-side development.
- Node.js should be used for server-side development.
- Responsive Web Design: The system should be responsive and mobile-friendly.
- Data Encryption: Encrypt sensitive data both at rest and in transit.
- RESTful APIs: Design APIs for seamless integration with external systems.
- Backup and Disaster Recovery: Establish procedures for data backup and recovery.
- Integration with Third-Party Services.

Design and Development

High Level Architecture Diagram

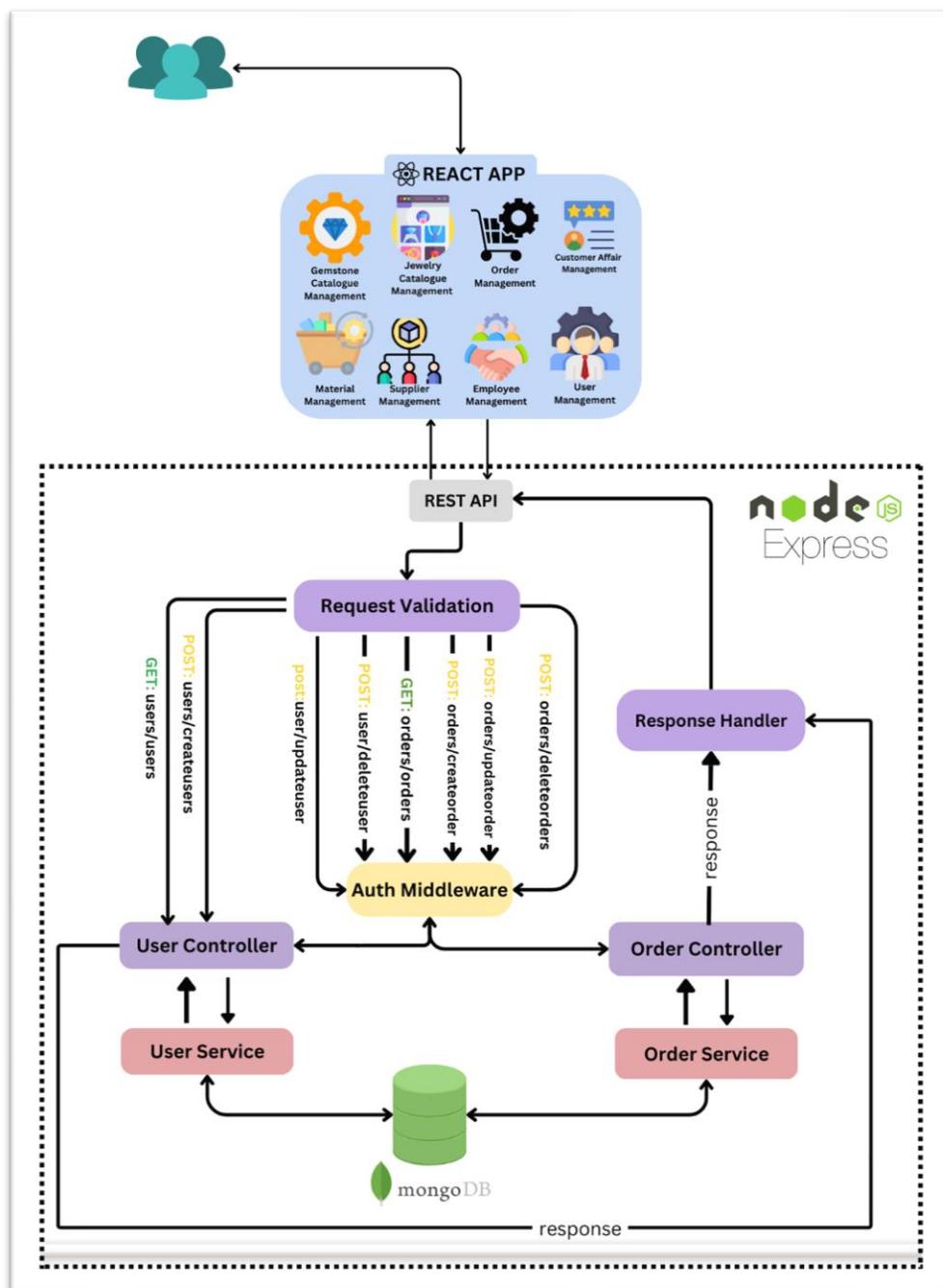


Figure 1 High Level Architecture Diagram

Use case Diagram of Gem and Jewellery Store Management System

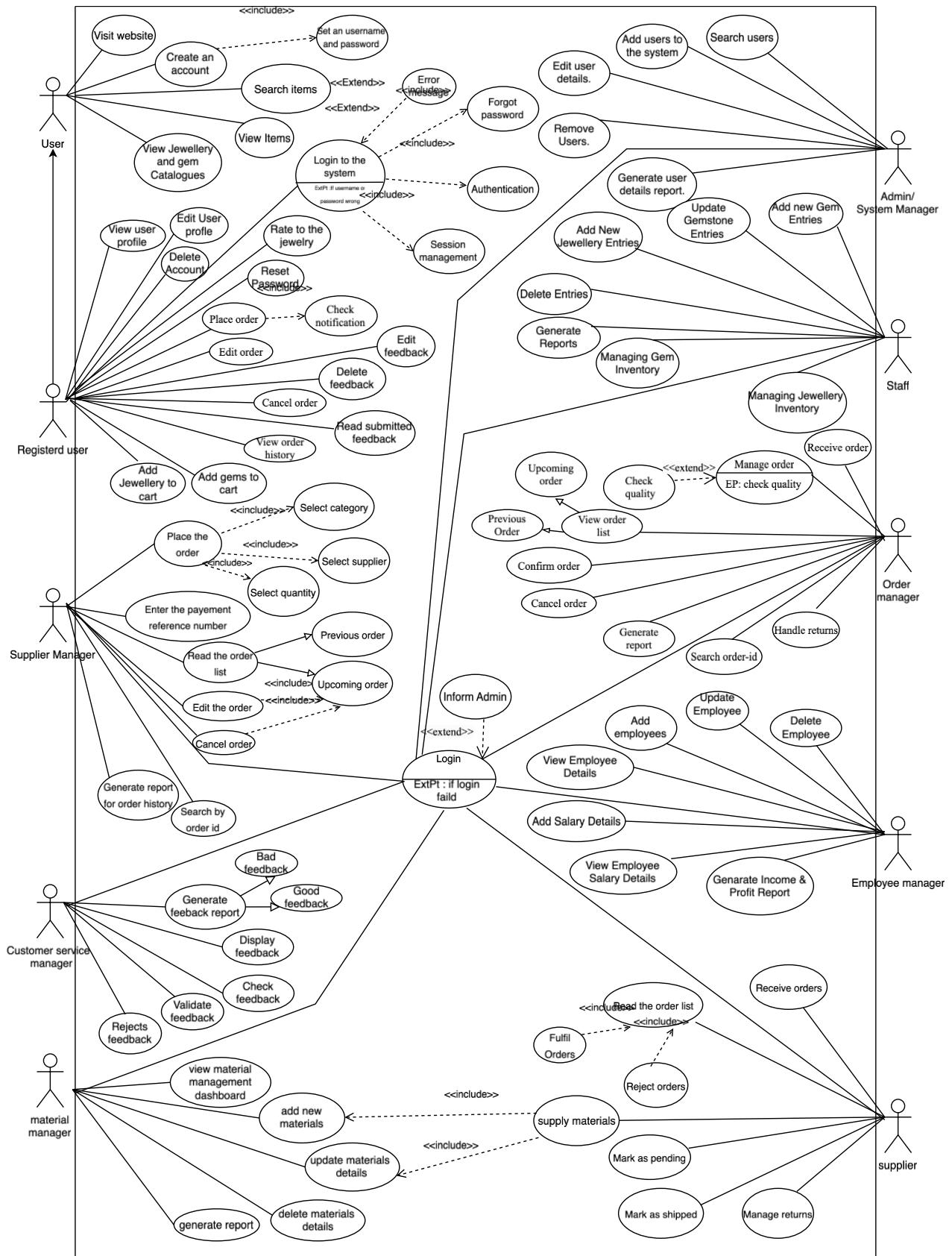


Figure 2 Use case Diagram

ER Diagram of Gem and Jewellery Store Management System

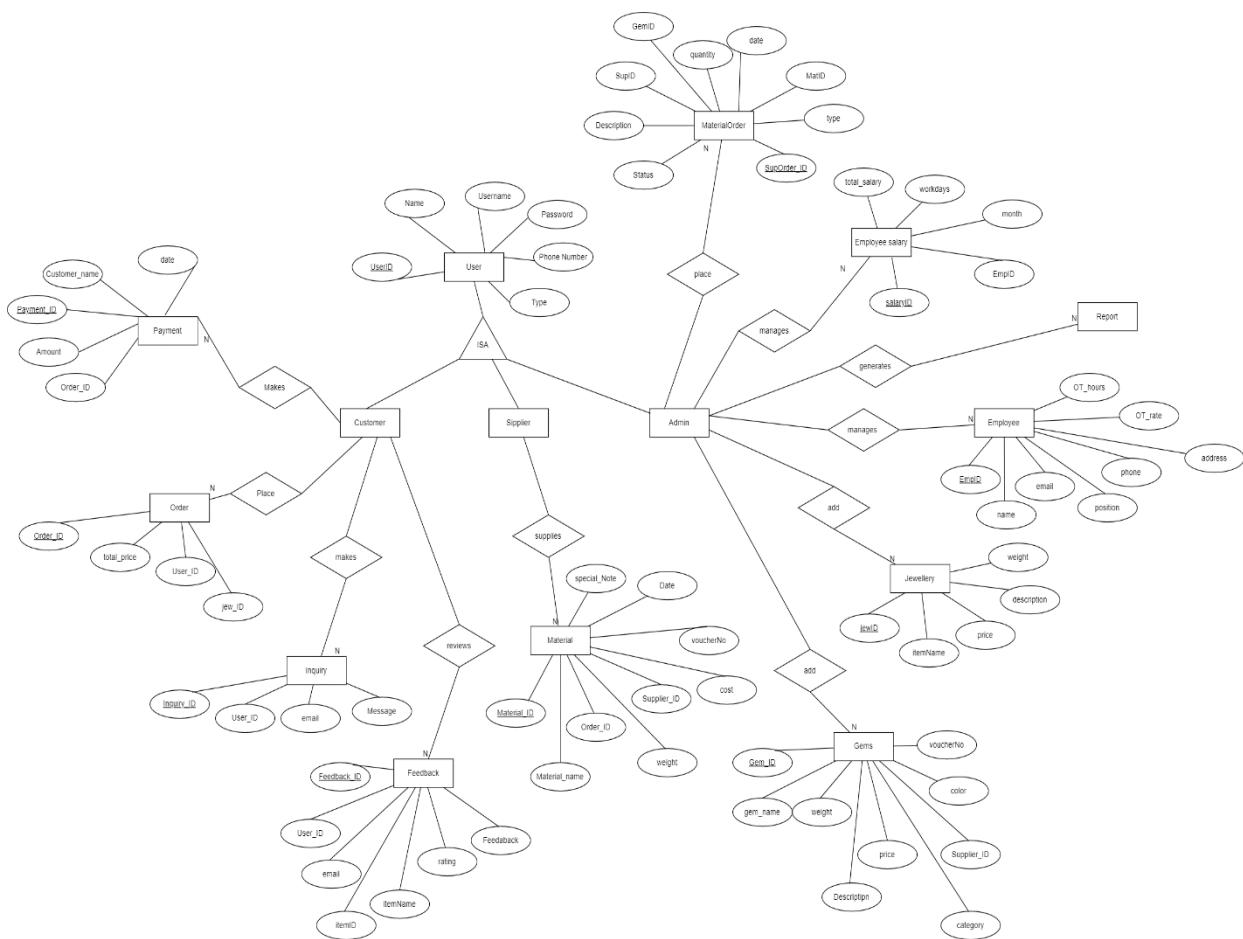


Figure 3 ER Diagram of Gem and Jewelry Store Management System

Class Diagram of Gem and Jewellery Store Management System

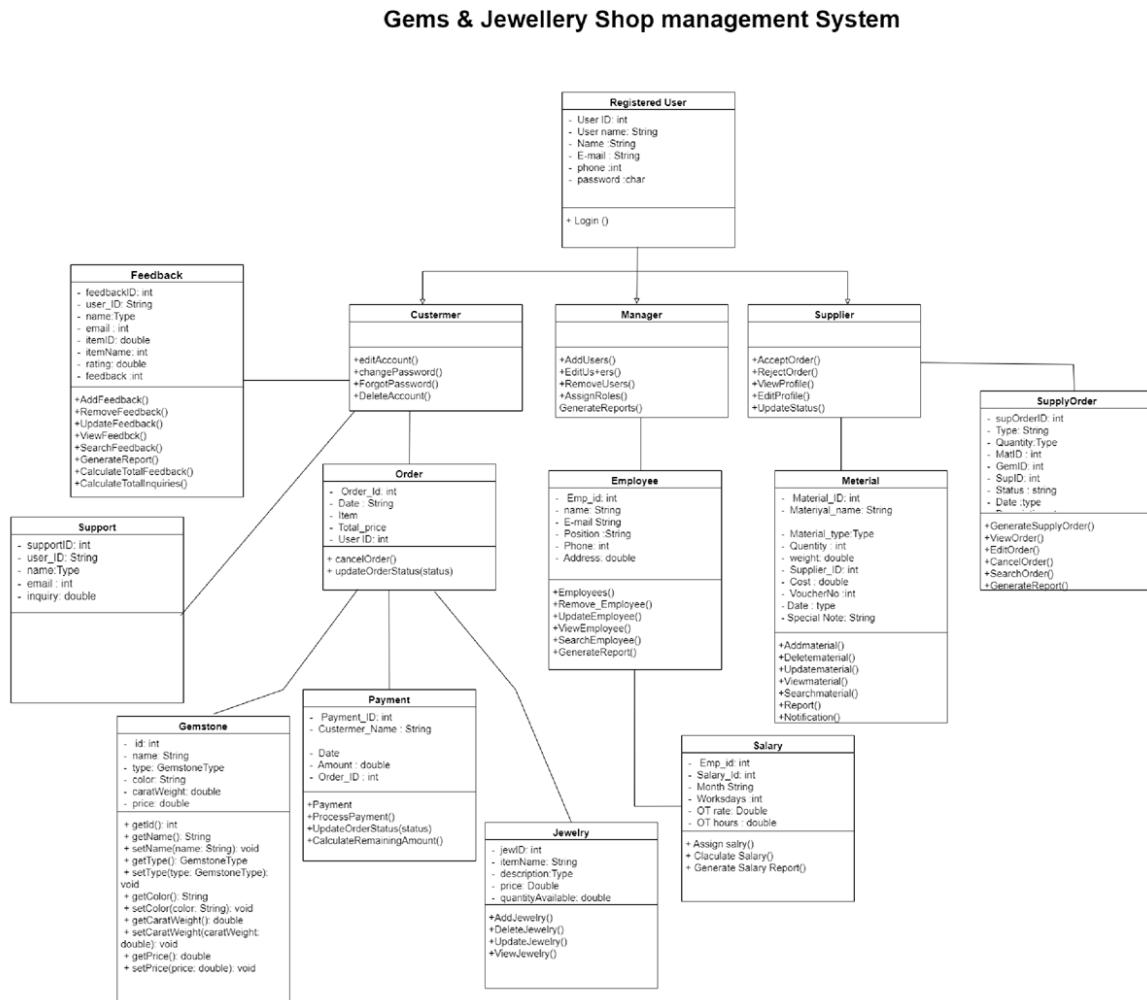


Figure 4 Class Diagram of Gem and Jewelry Store Management System

Activity Diagrams

Activity diagram of User Management process

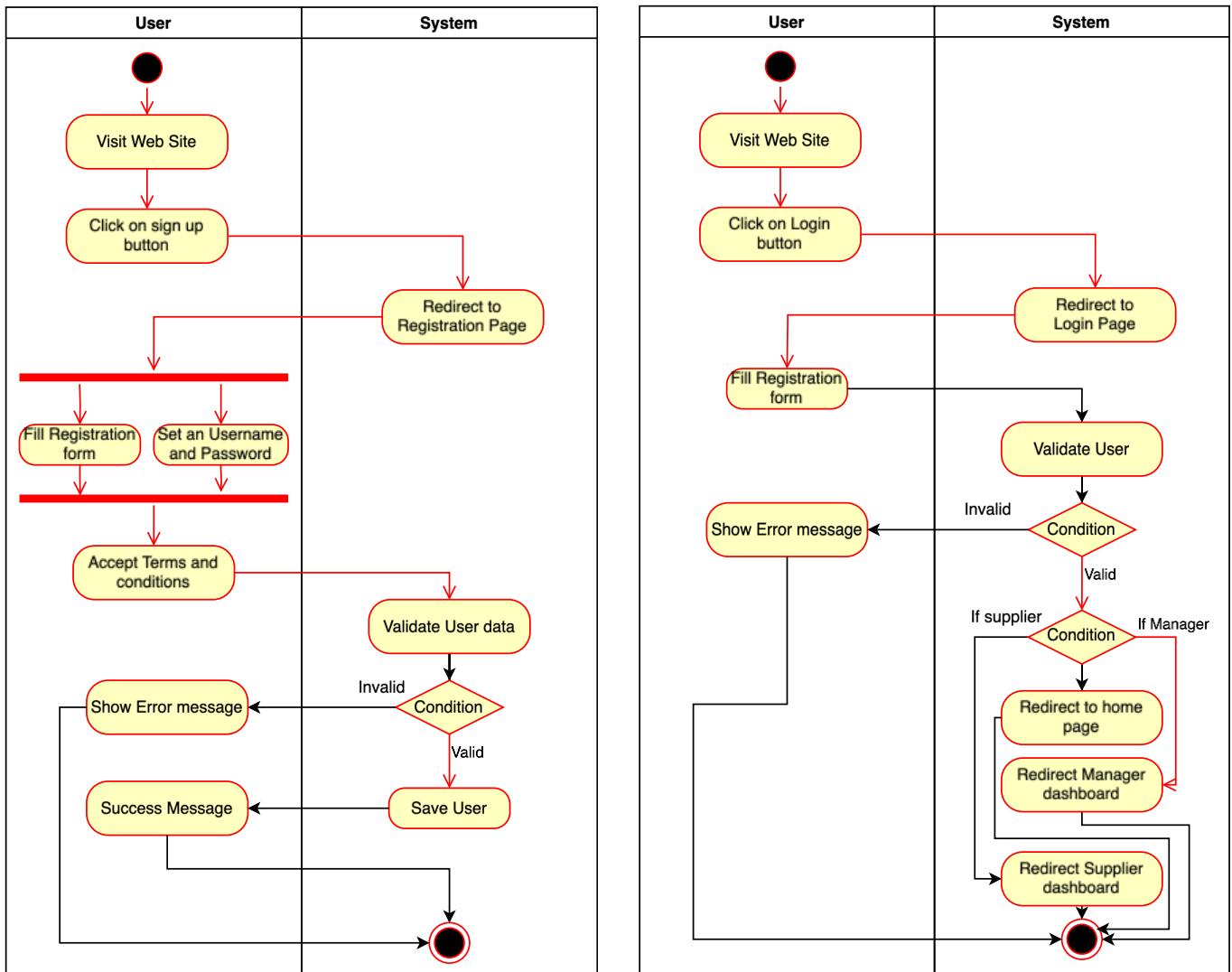


Figure 5 Activity diagram of User Management process

Activity diagram of Order Management process

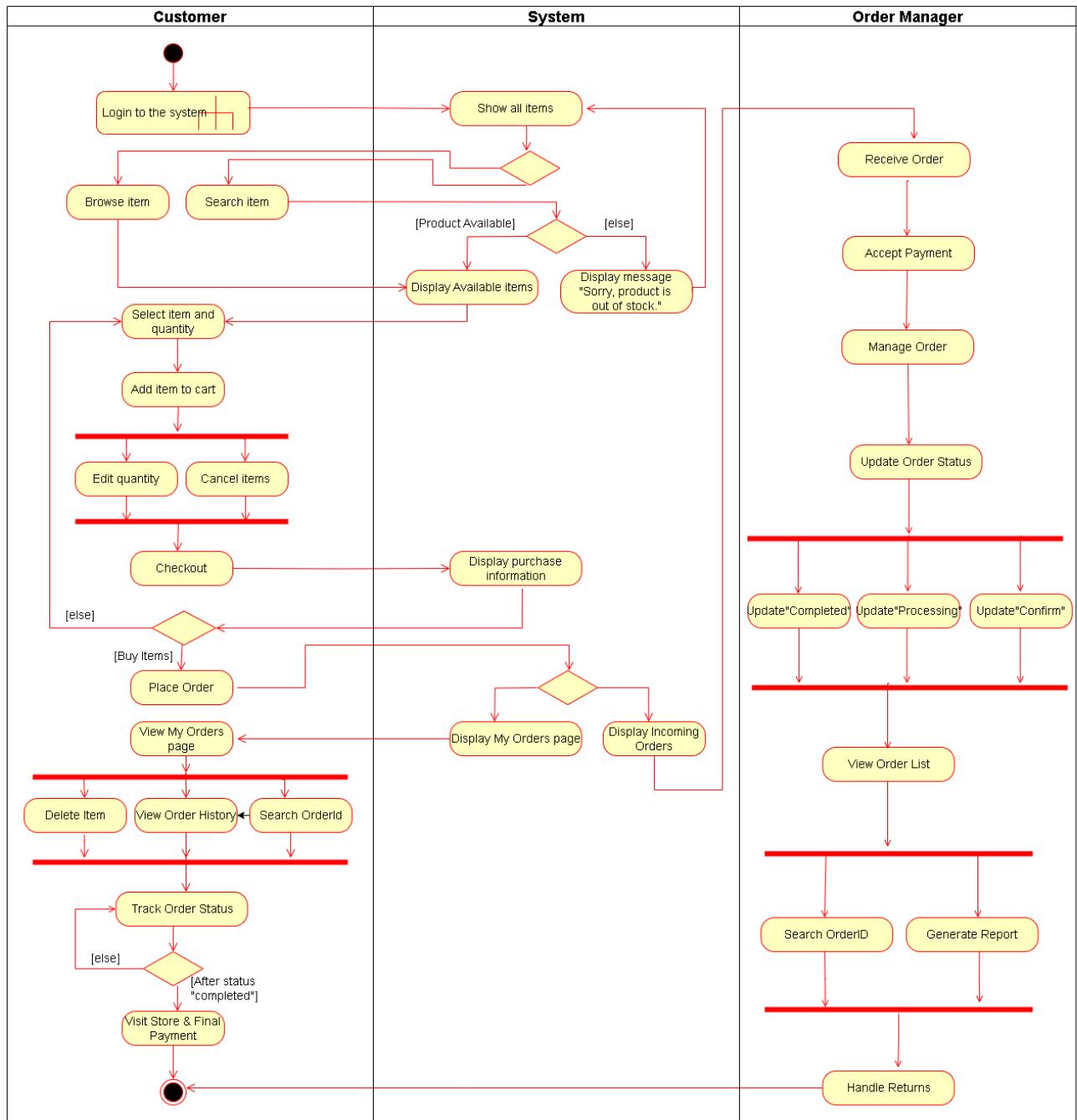


Figure 6 Activity diagram of Order Management process

Activity diagram of Supplier Management process

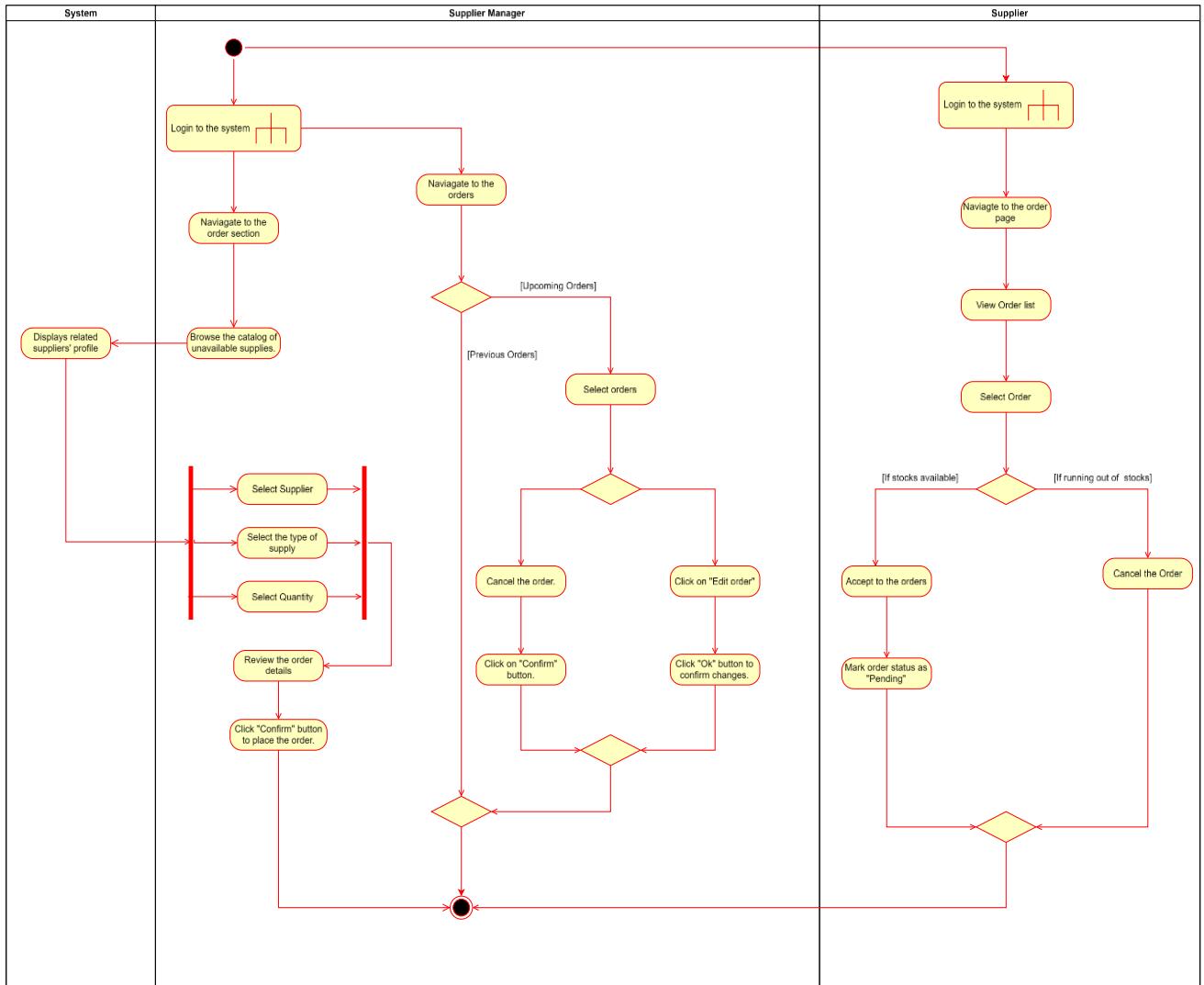


Figure 7 Activity diagram of Supplier Management process

Activity diagram of Material Management process

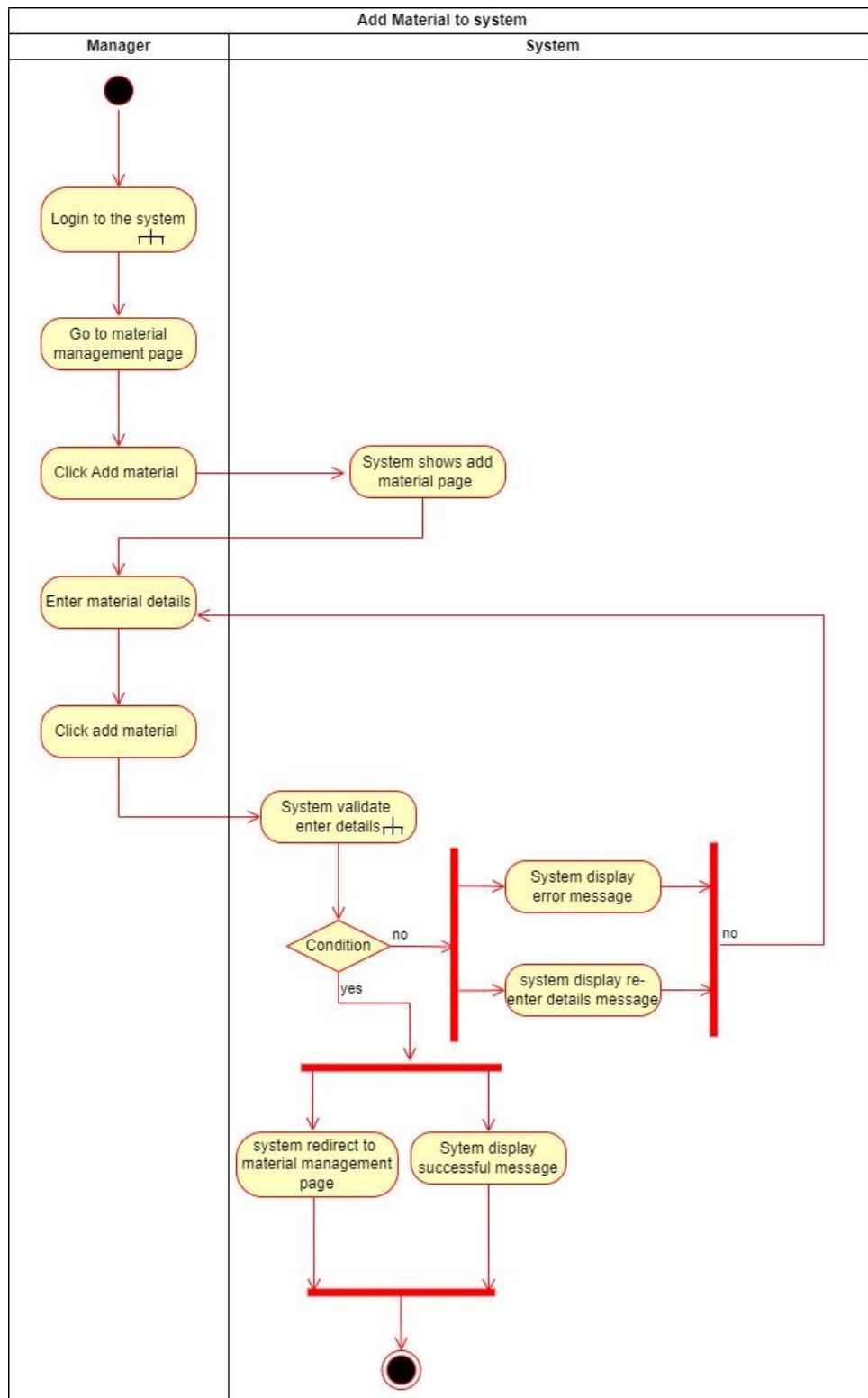


Figure 8 Activity diagram of Material Management process

Activity diagram of Employee Management process

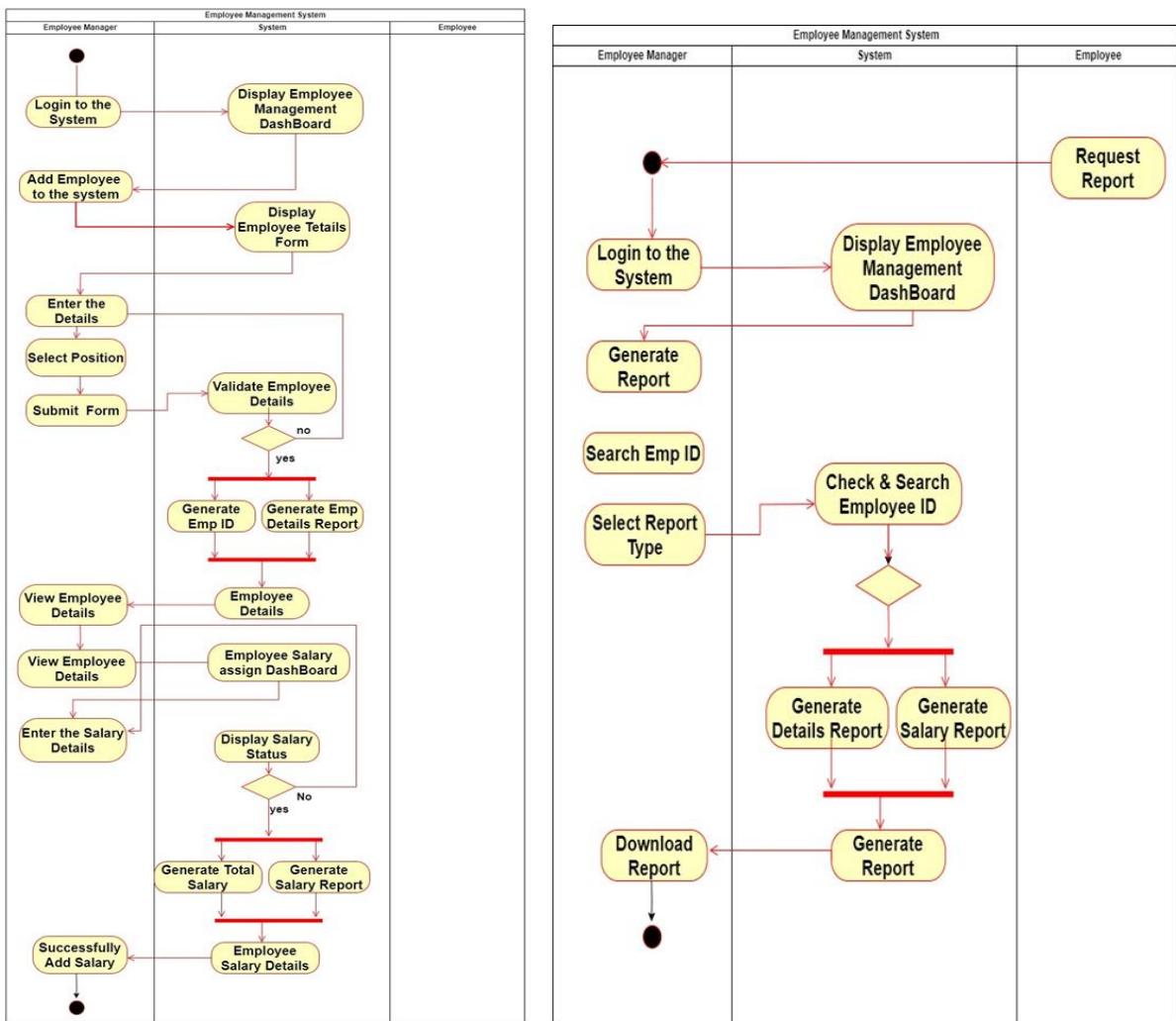


Figure 9 Activity diagram of Employee Management process

Activity diagram of Customer affair Management process

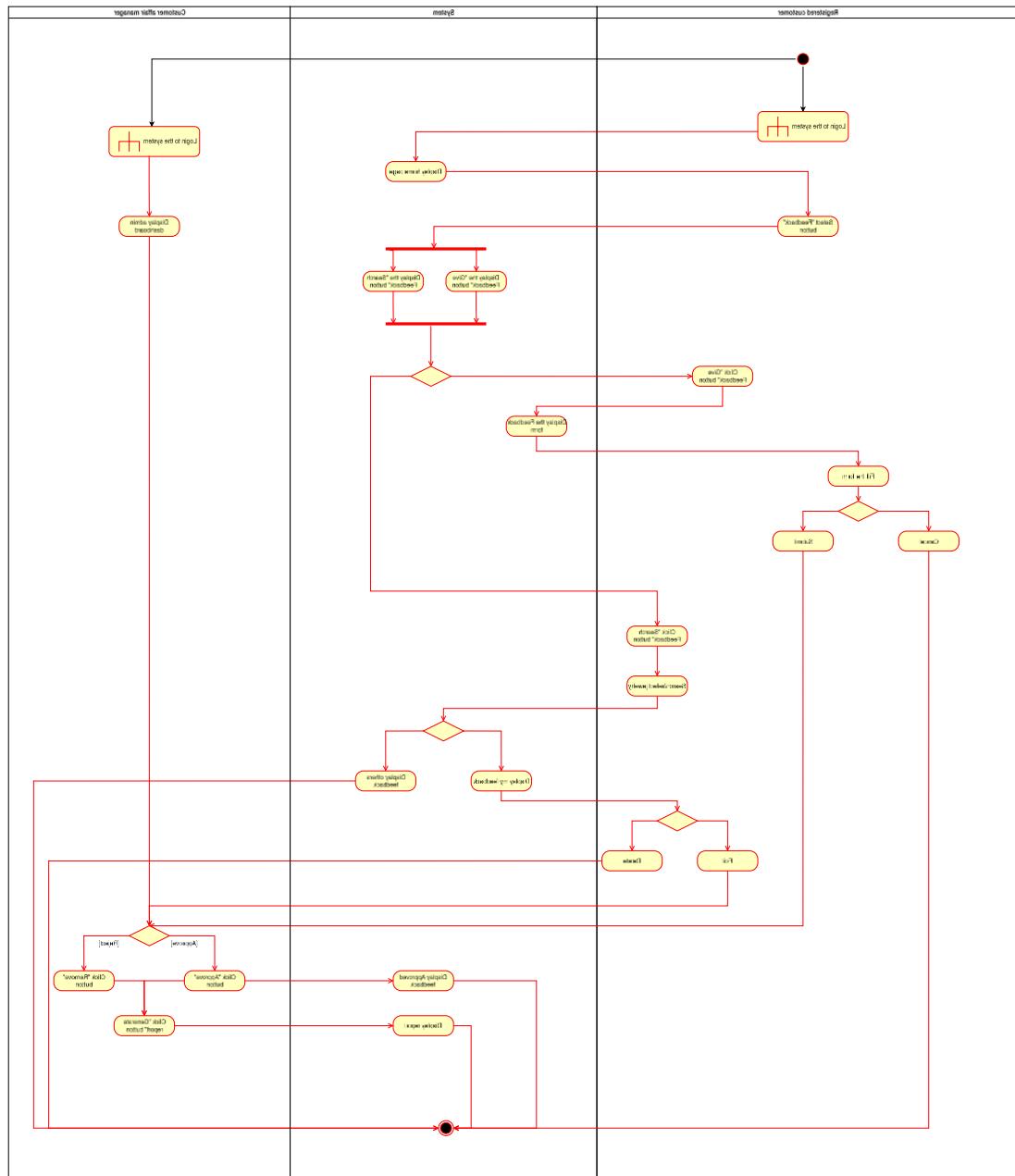


Figure 10 Activity diagram of Customer affair Management process

Activity diagram of Gem Catalogue Management process

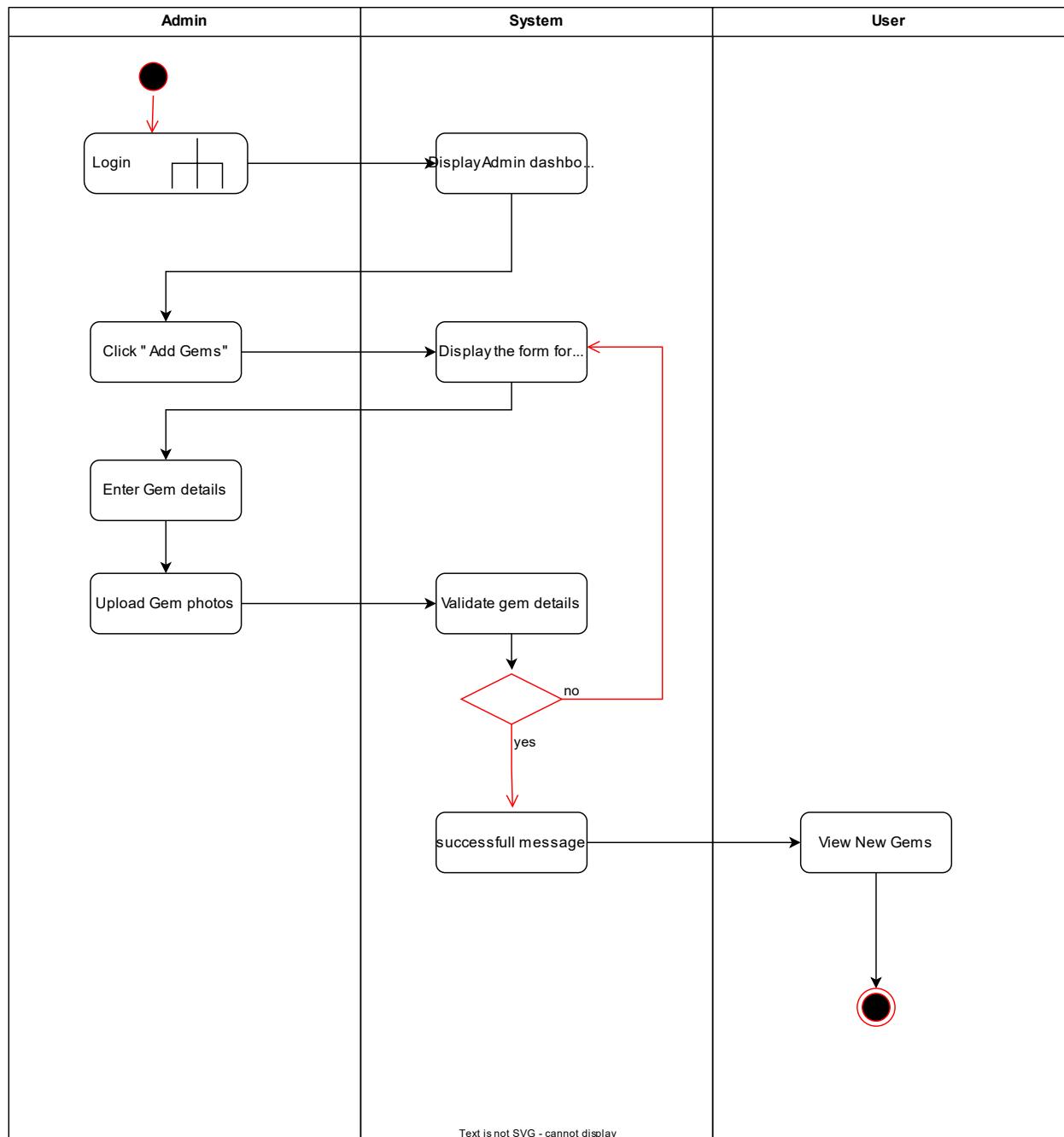
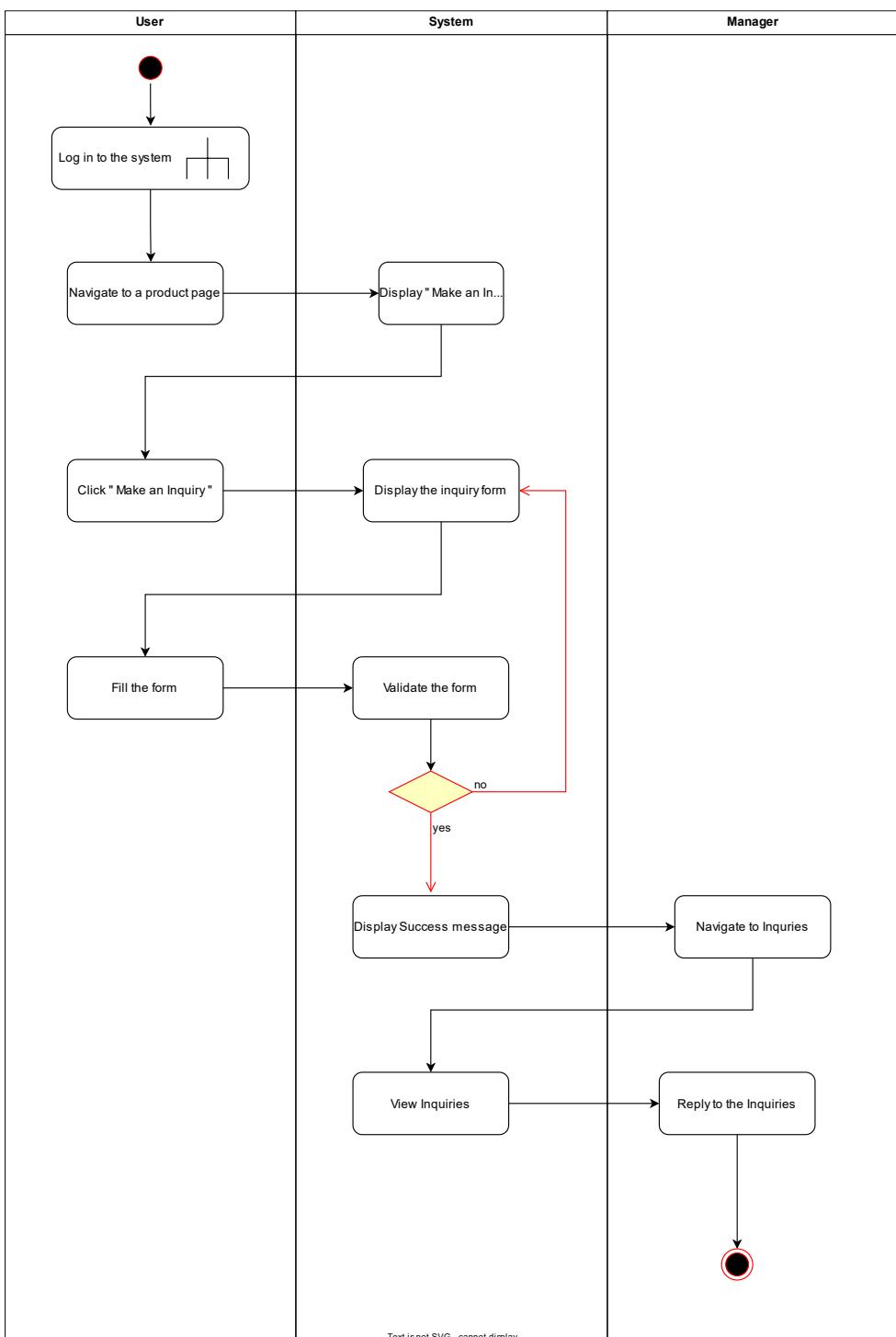


Figure 11 Activity diagram of Gem Catalogue Management process



Sequence Diagrams

Sequence diagram of Registration process

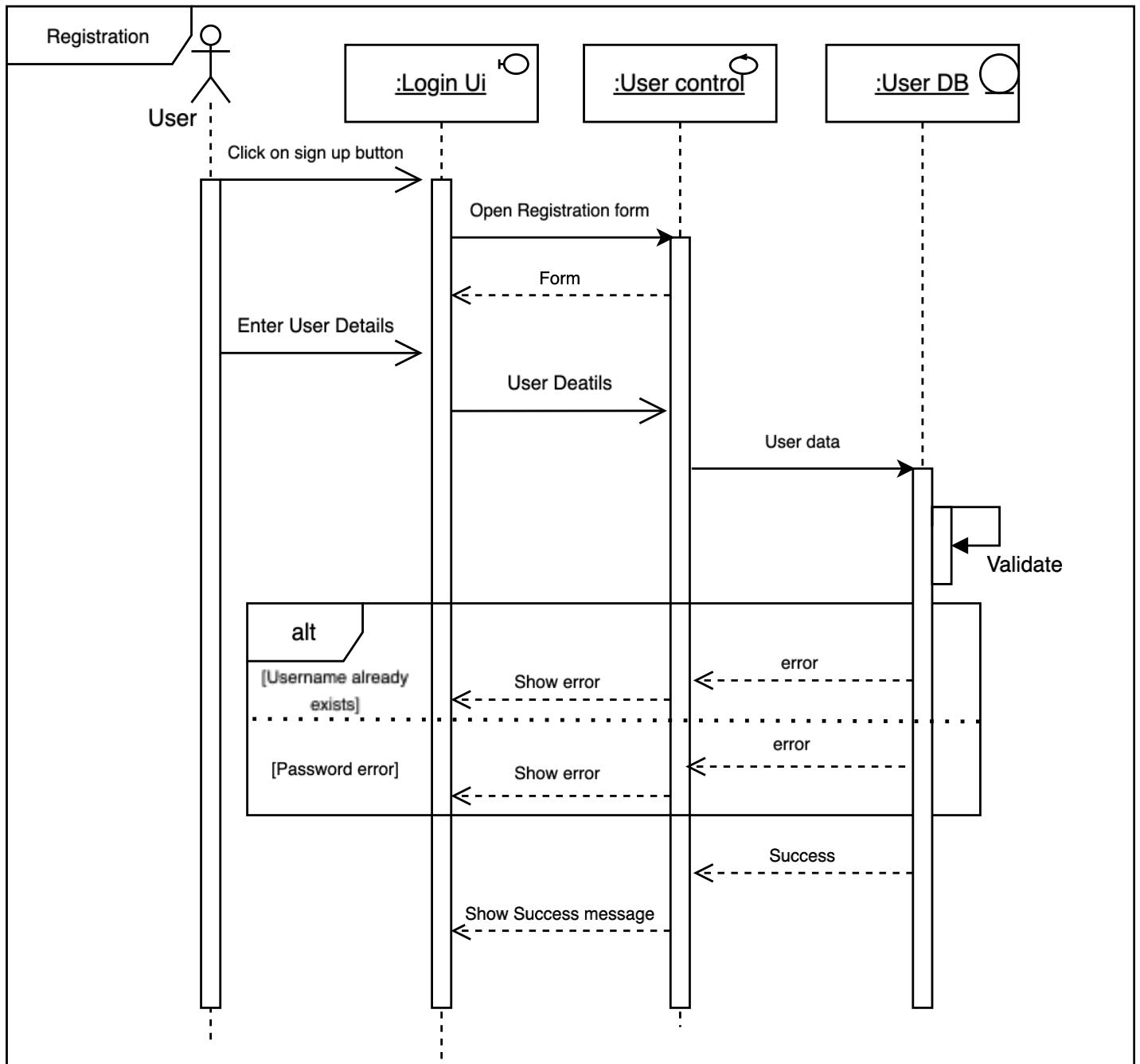


Figure 12 Sequence diagram of Registration process

Sequence diagram of login process

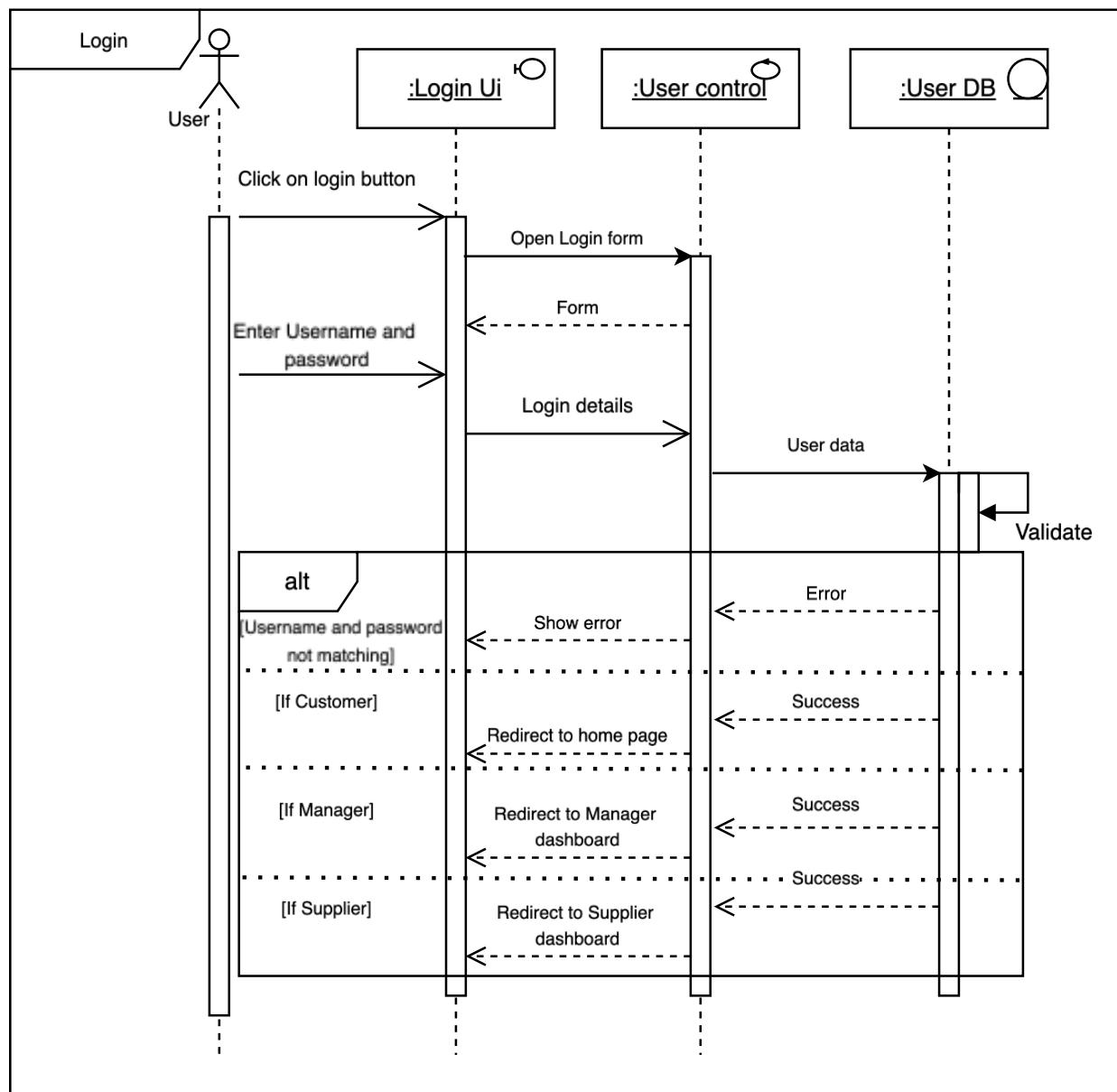


Figure 13 Sequence diagram of login process

Sequence diagram of Add new gem entries process

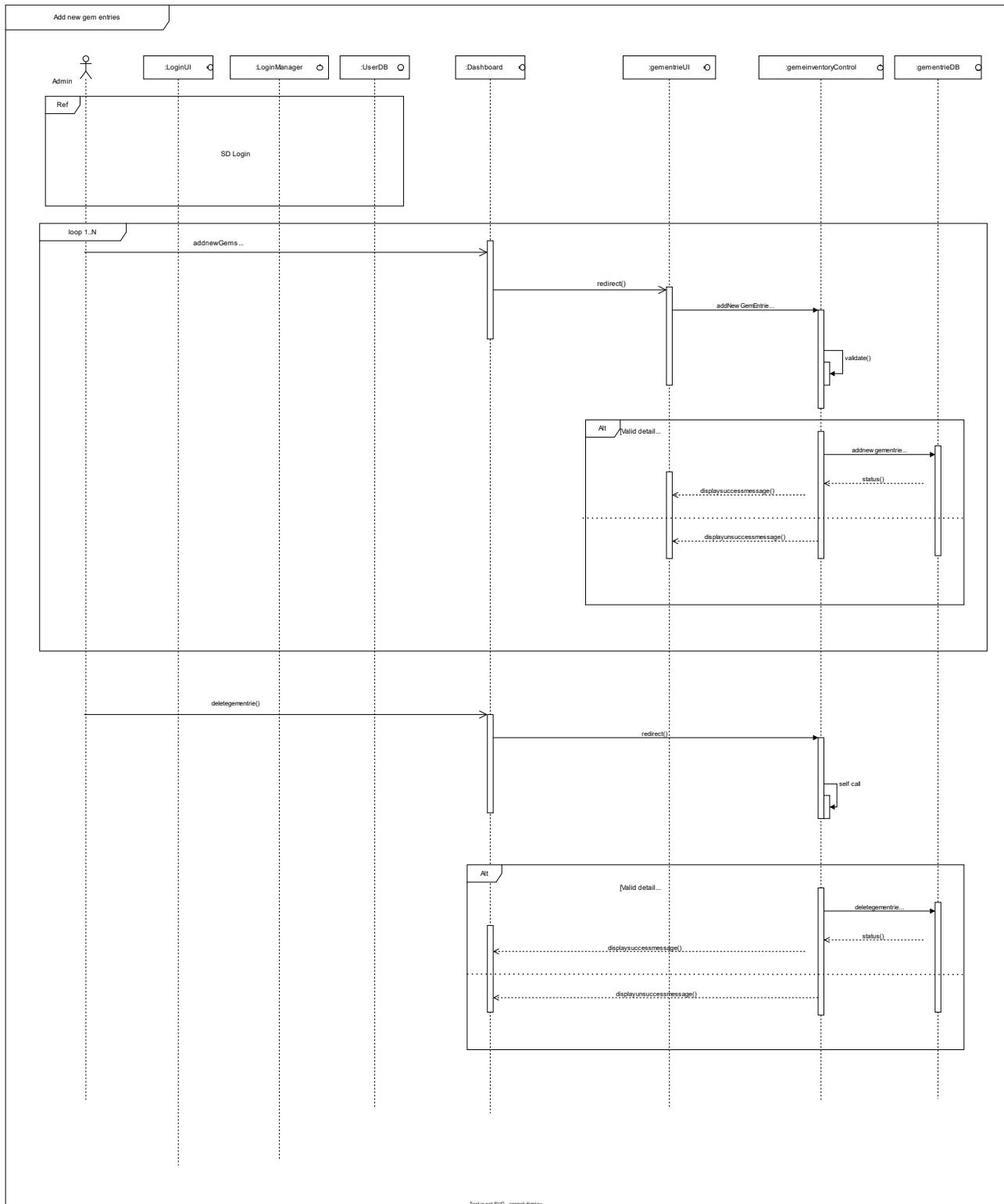


Figure 14 Sequence diagram of Add new gem entries process

Sequence diagram of Add Items to Cart process

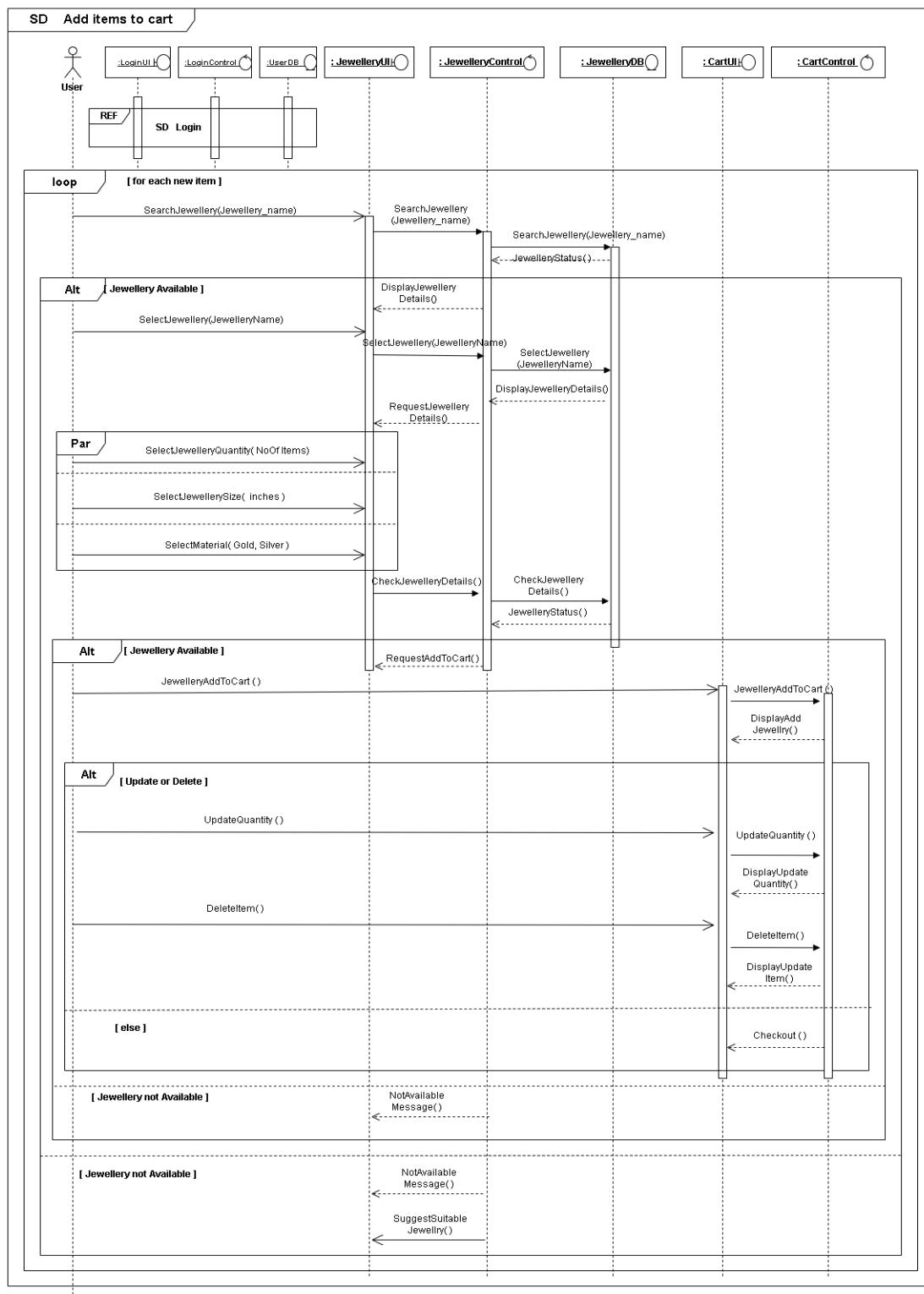


Figure 15 Sequence diagram of Add Items to Cart process

Sequence diagram of Employee Management System process

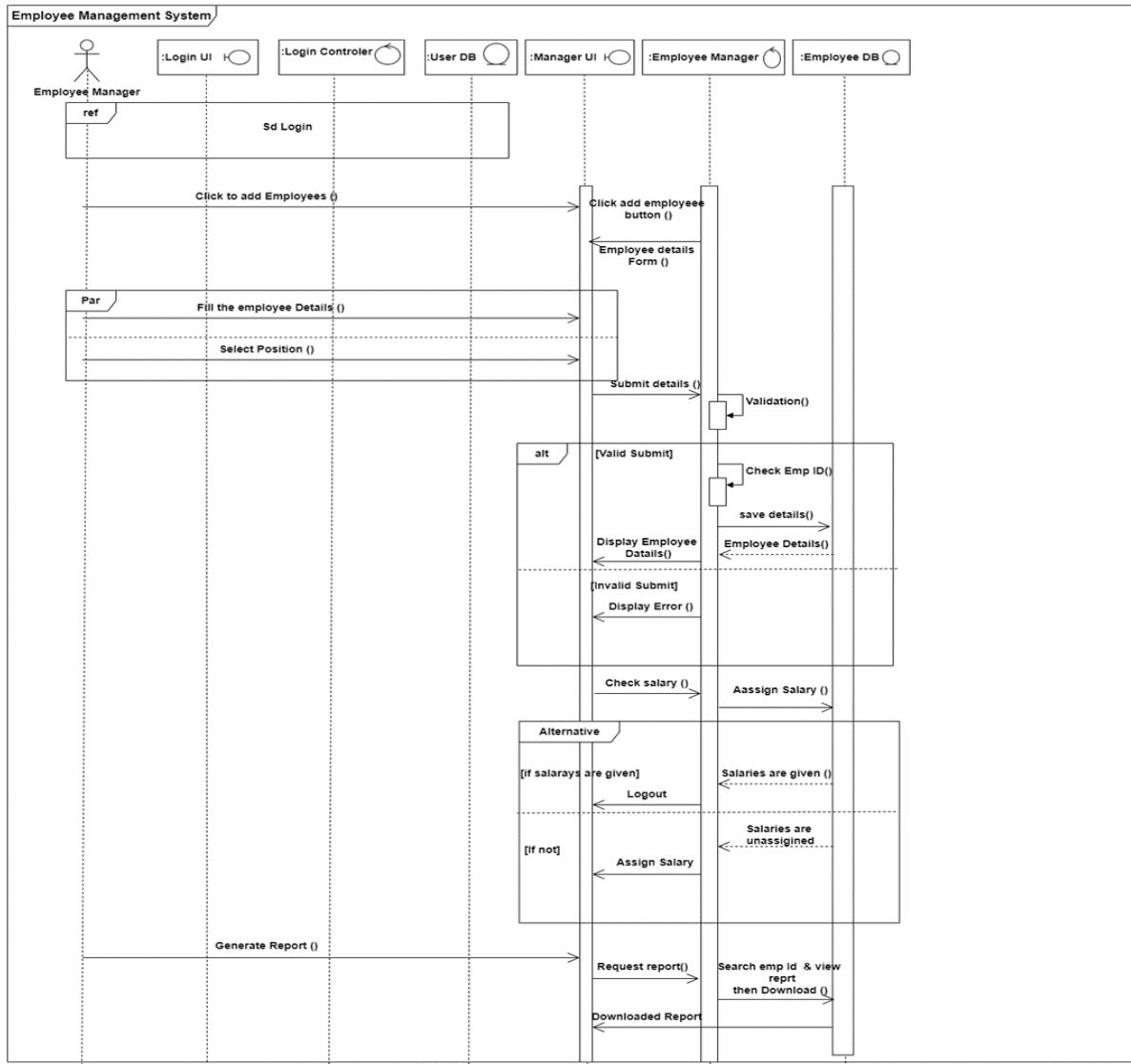


Figure 16 Sequence diagram of Employee Management System process

Sequence diagram of Material Management System process

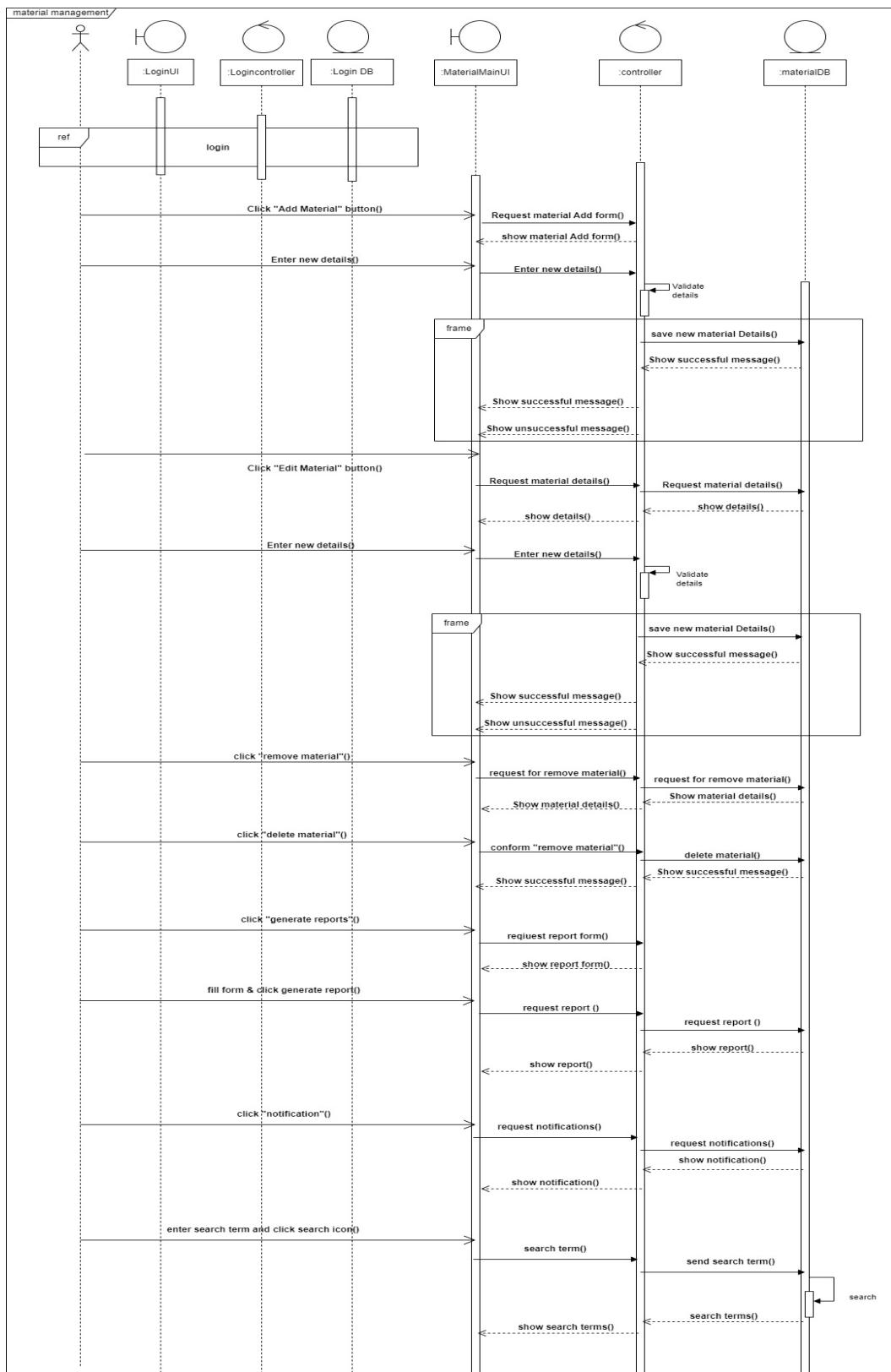


Figure 17 Sequence diagram of Material Management System process

Sequence diagram of Supplier Management System place order for supplies

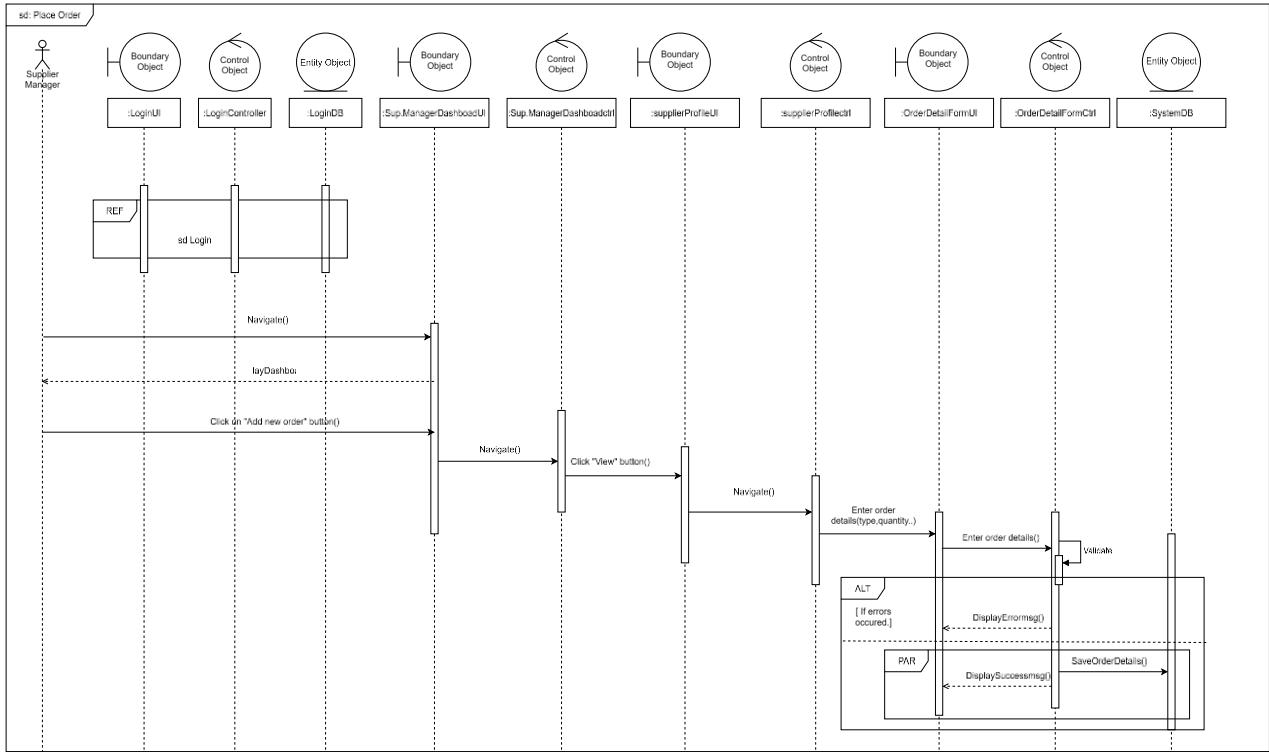


Figure 18 Sequence diagram of Supplier Management System place order for supplies

Sequence diagram of Customer affairs Management process

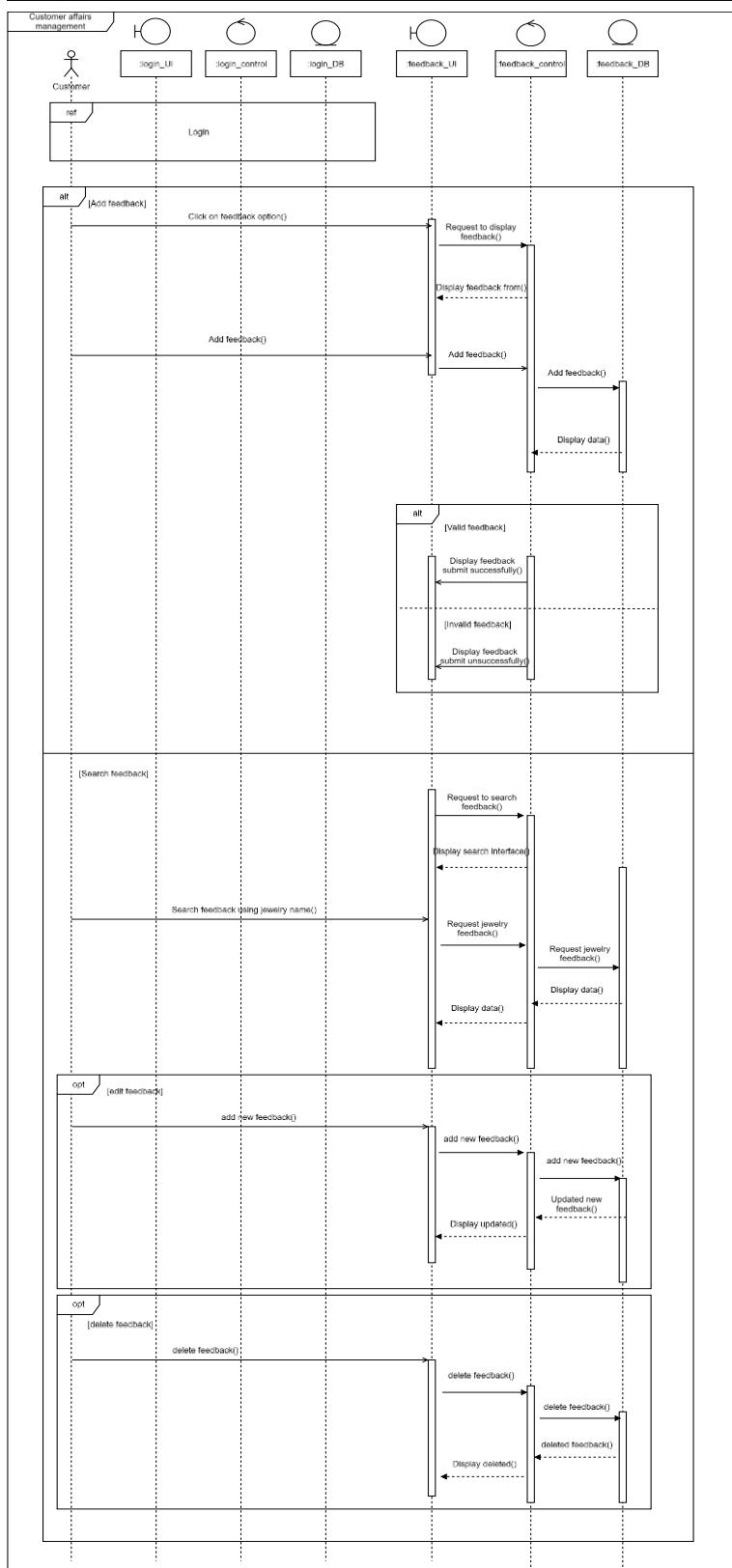


Figure 19 Sequence diagram of Customer affairs Management process

Sequence diagram of Customer Jewellery Management process

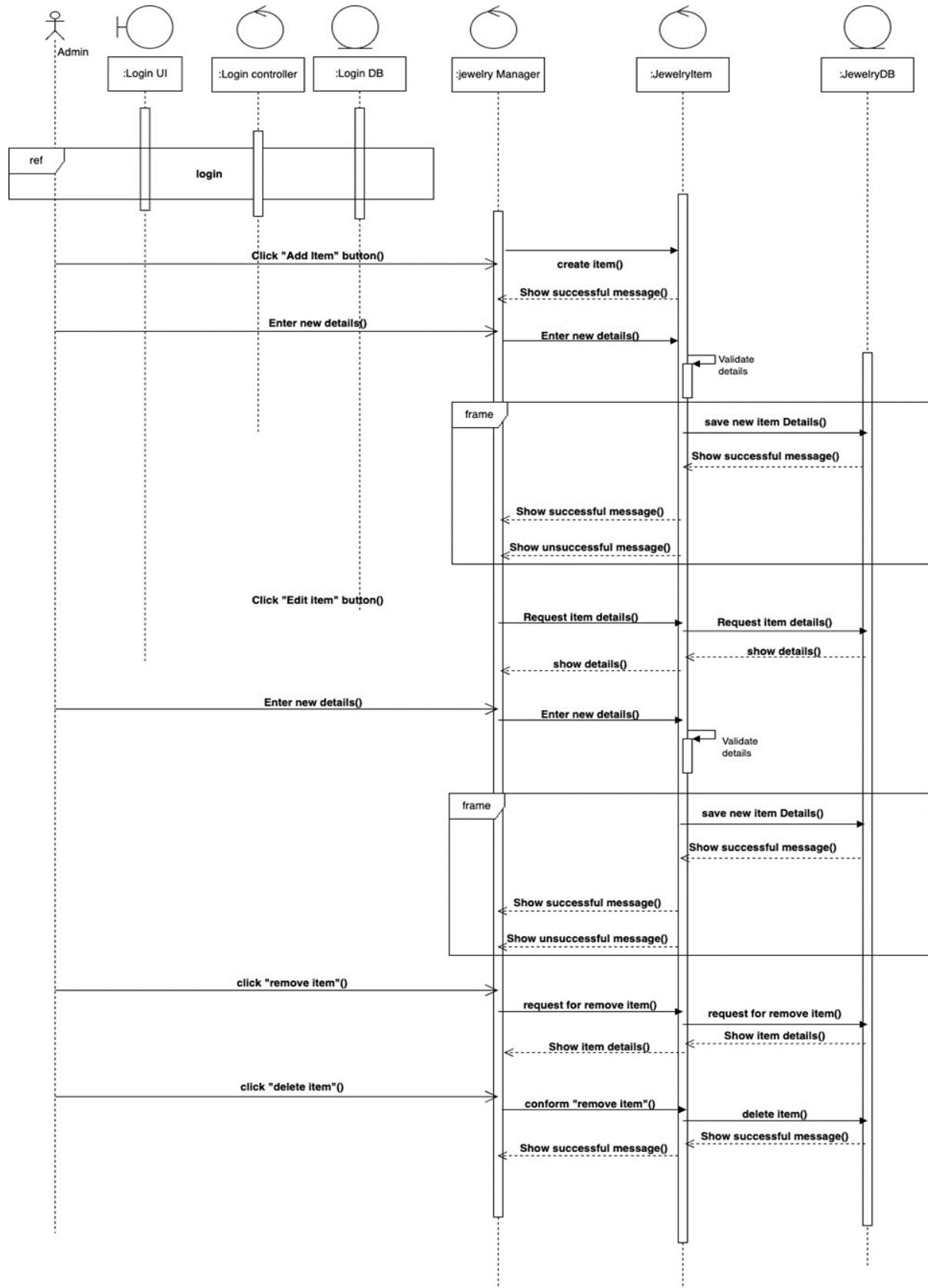


Figure 20 Sequence diagram of Customer Jewelry Management process

State Chart Diagrams

State chart diagram of User Management process

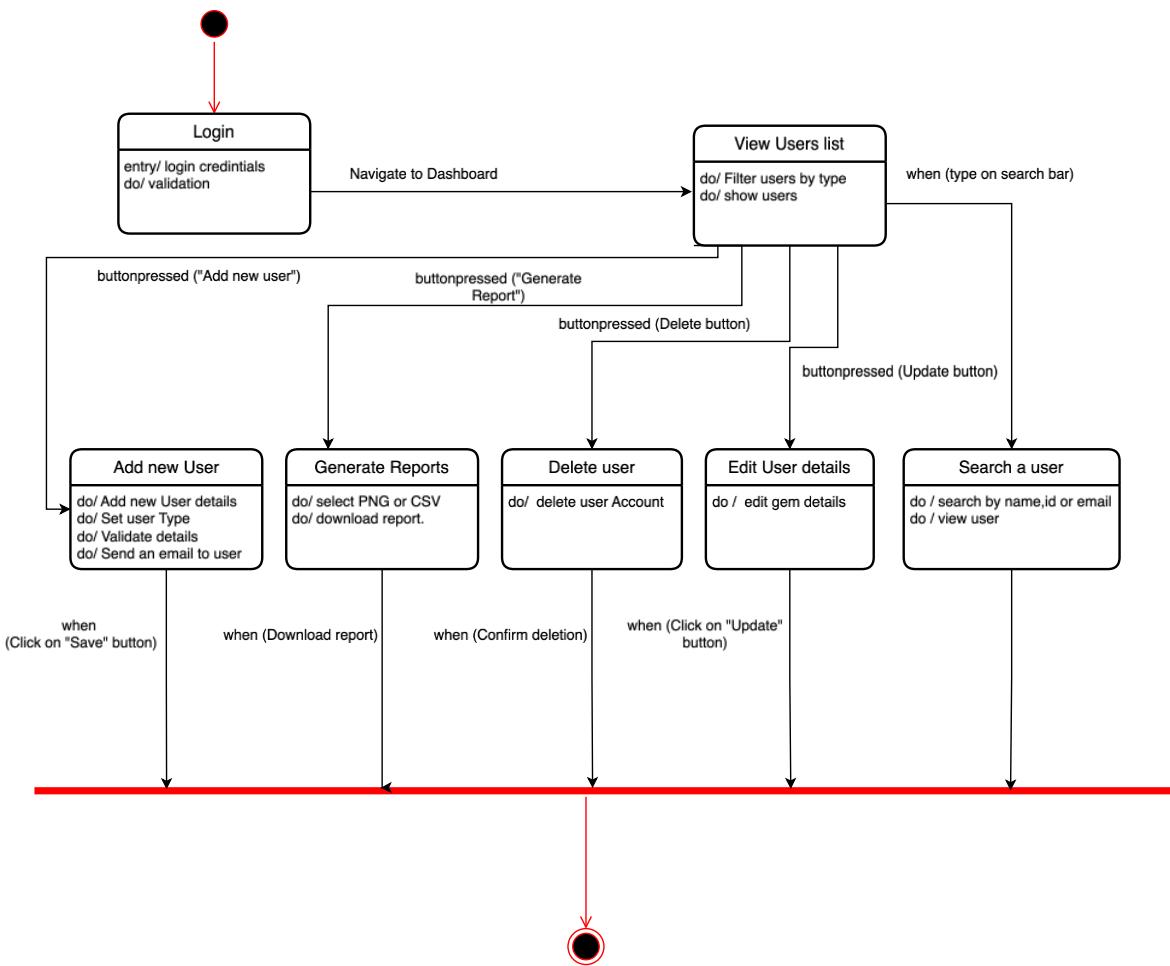


Figure 21 State chart diagram of User Management process

State chart diagram of Gem Catalogue Management process

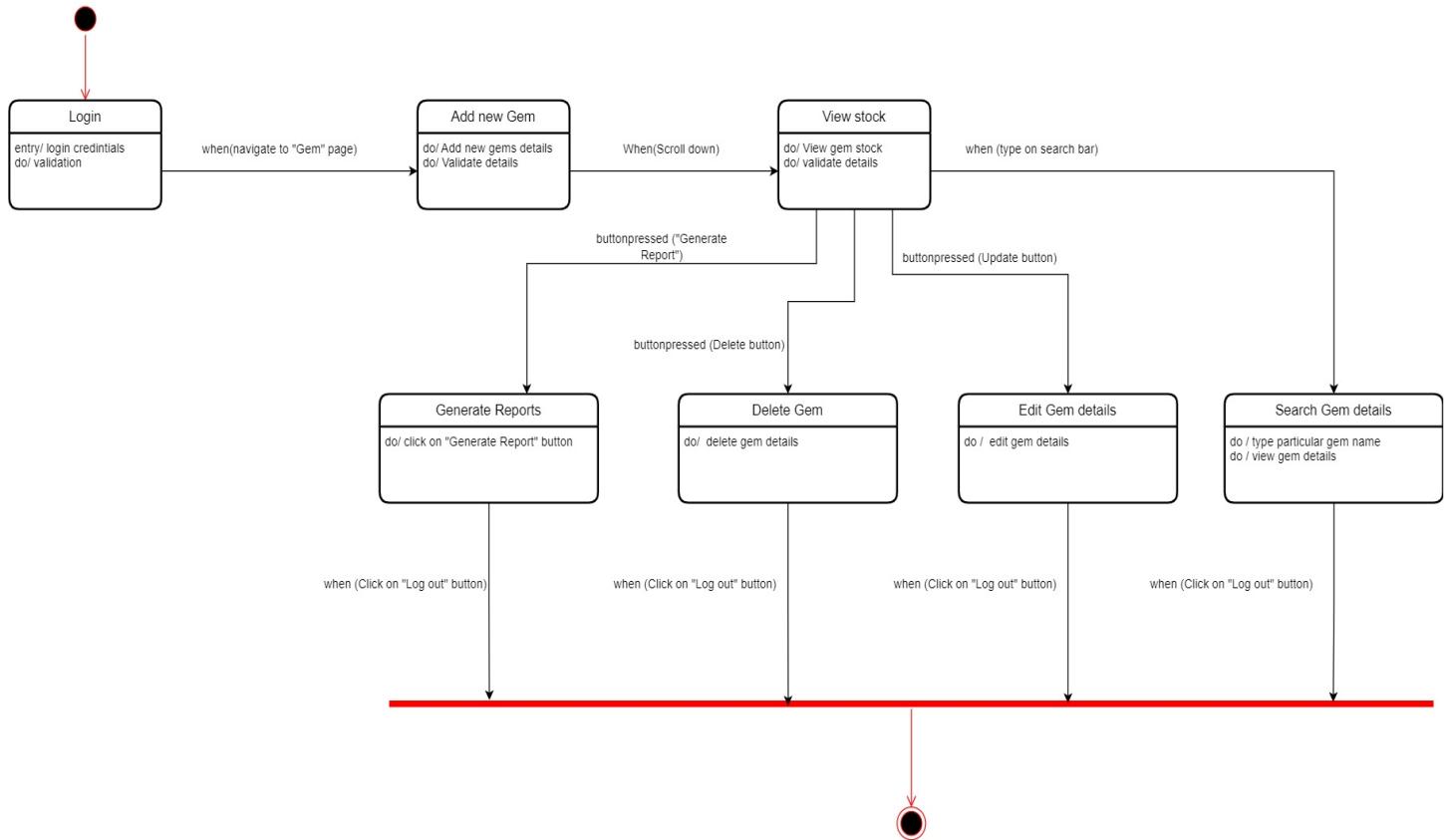


Figure 22 State chart diagram of Gem Catalogue Management process

State chart diagram of Order Management process

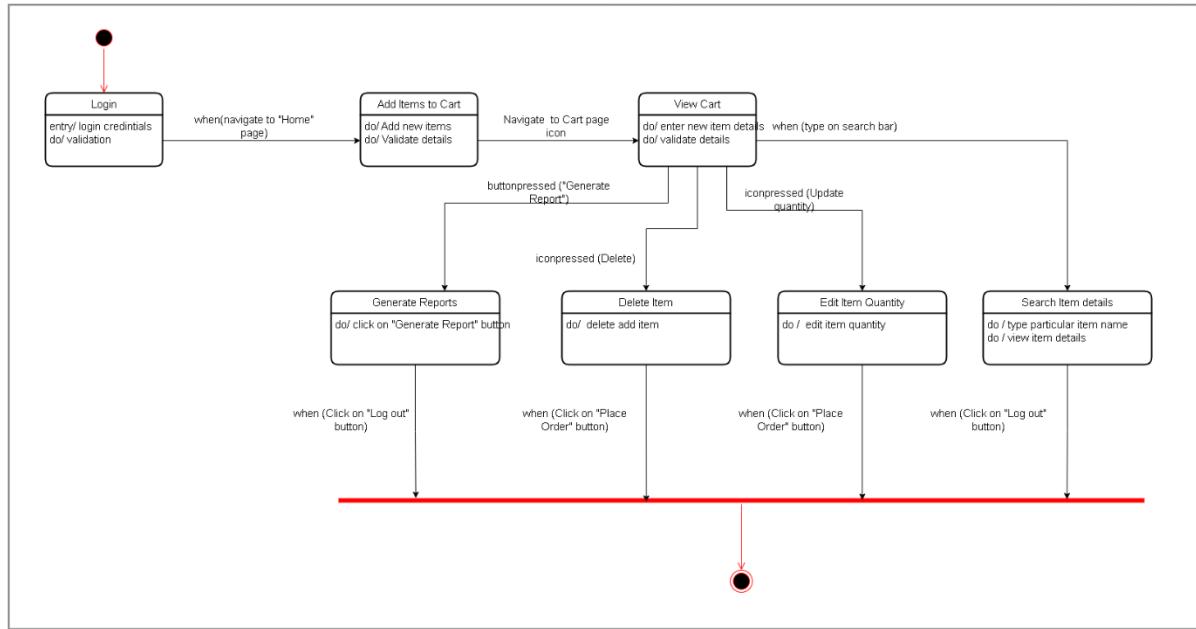


Figure 23 State chart diagram of Order Management process

State chart diagram of Material Management process

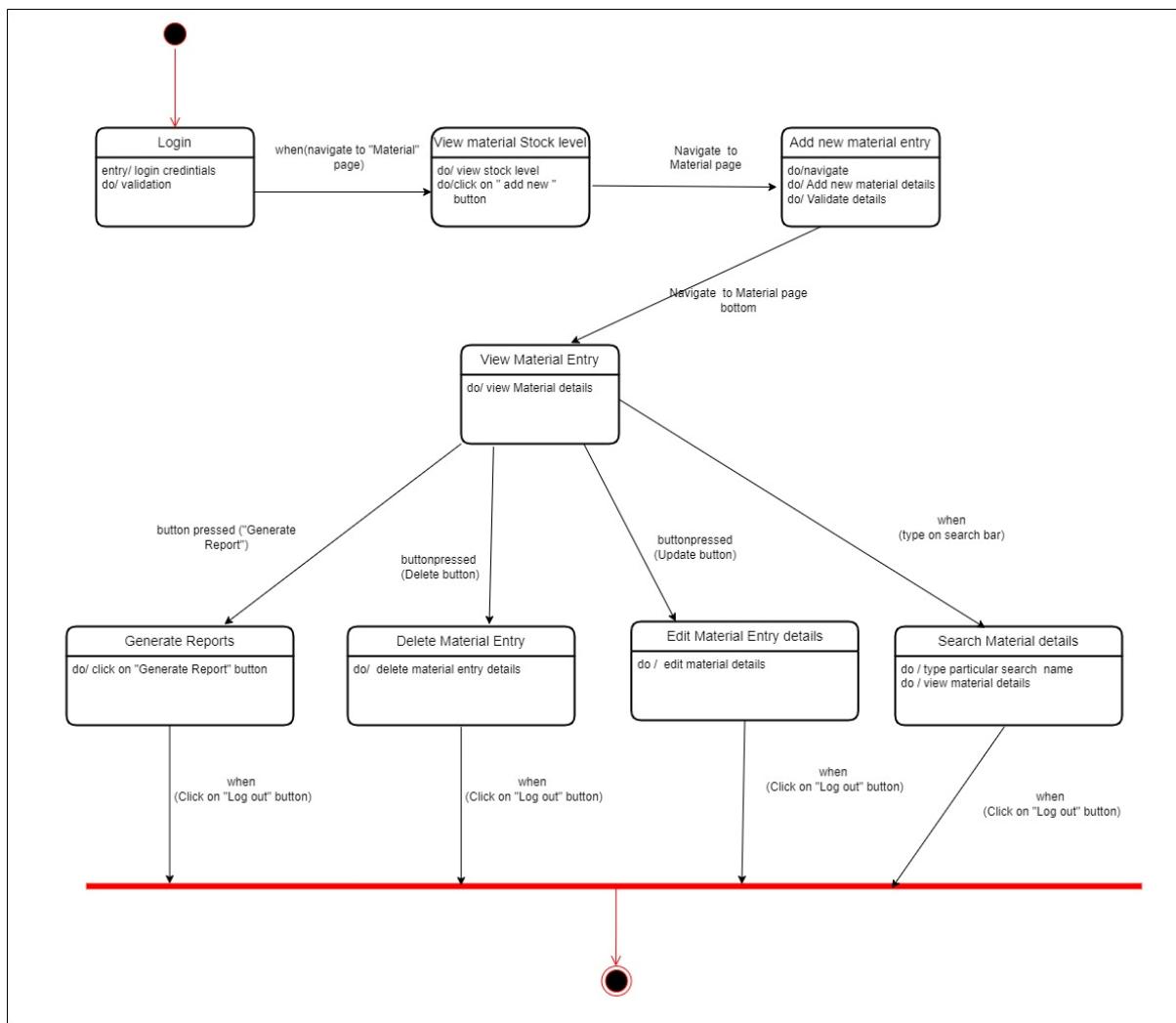


Figure 24 State chart diagram of Material Management process

State chart diagram of Supplier Management process

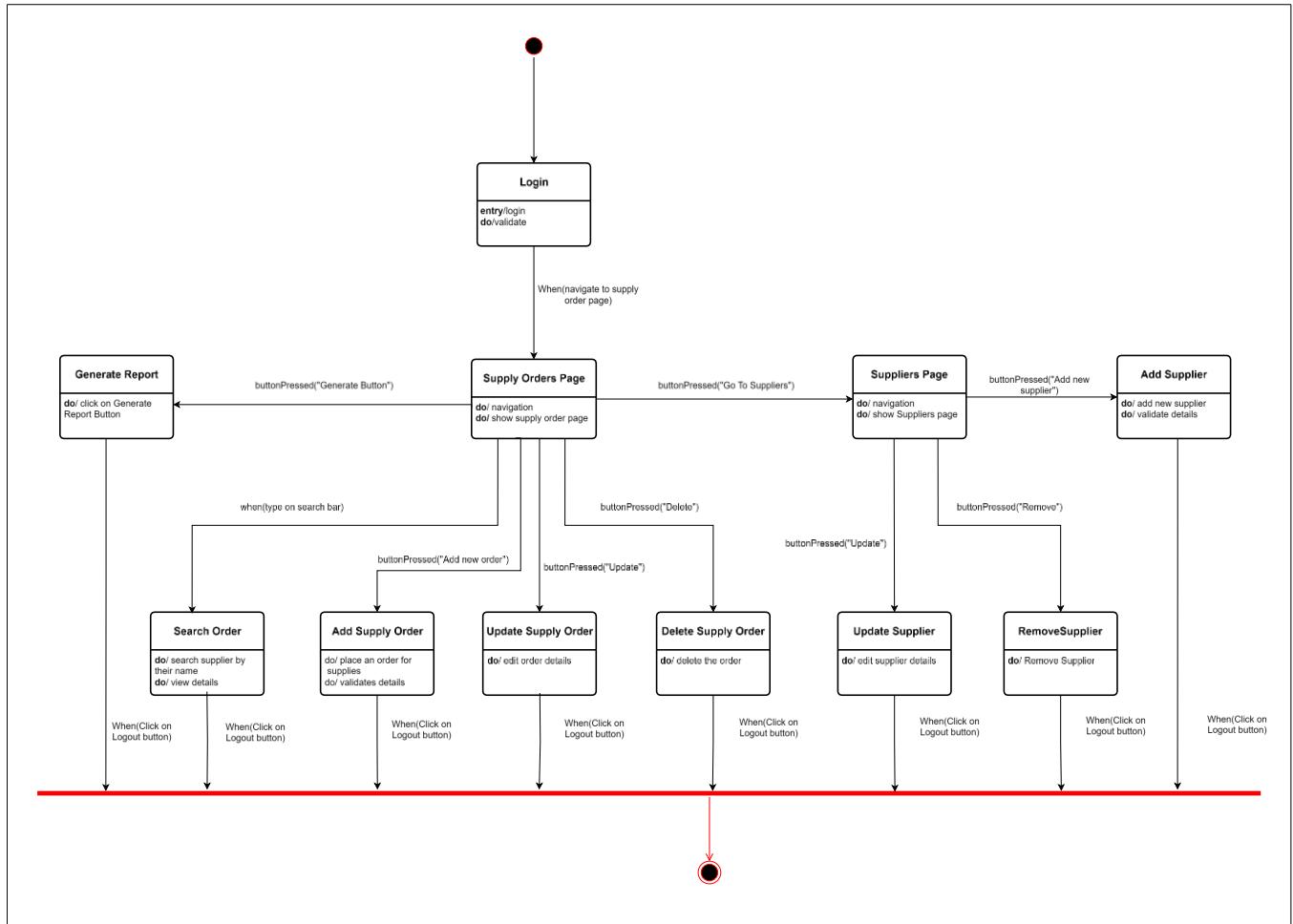


Figure 25 State chart diagram of Supplier Management process

State chart diagram of Employee Management process

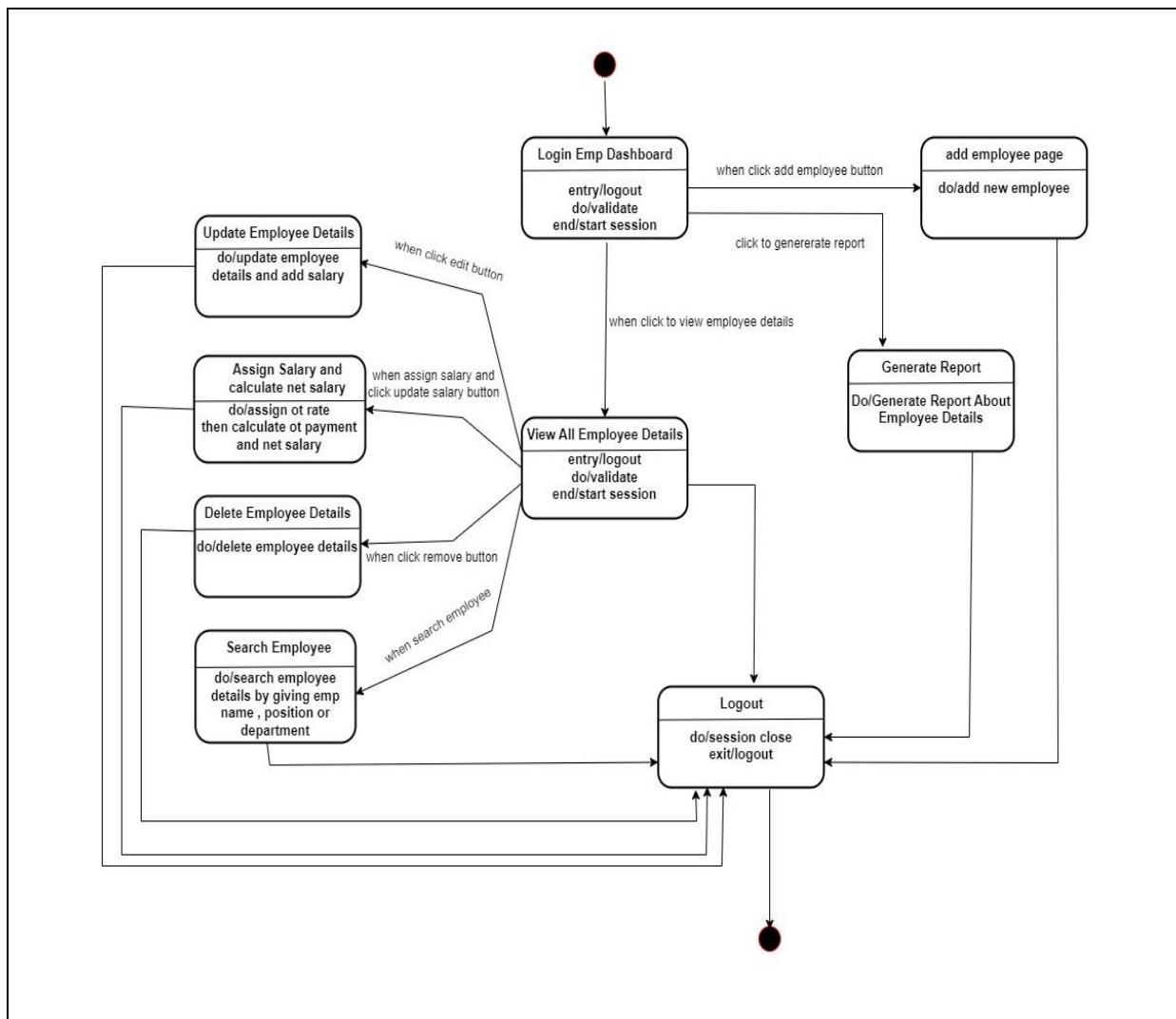


Figure 26 State chart diagram of Employee Management process

State chart diagram of Customer Affair Management process

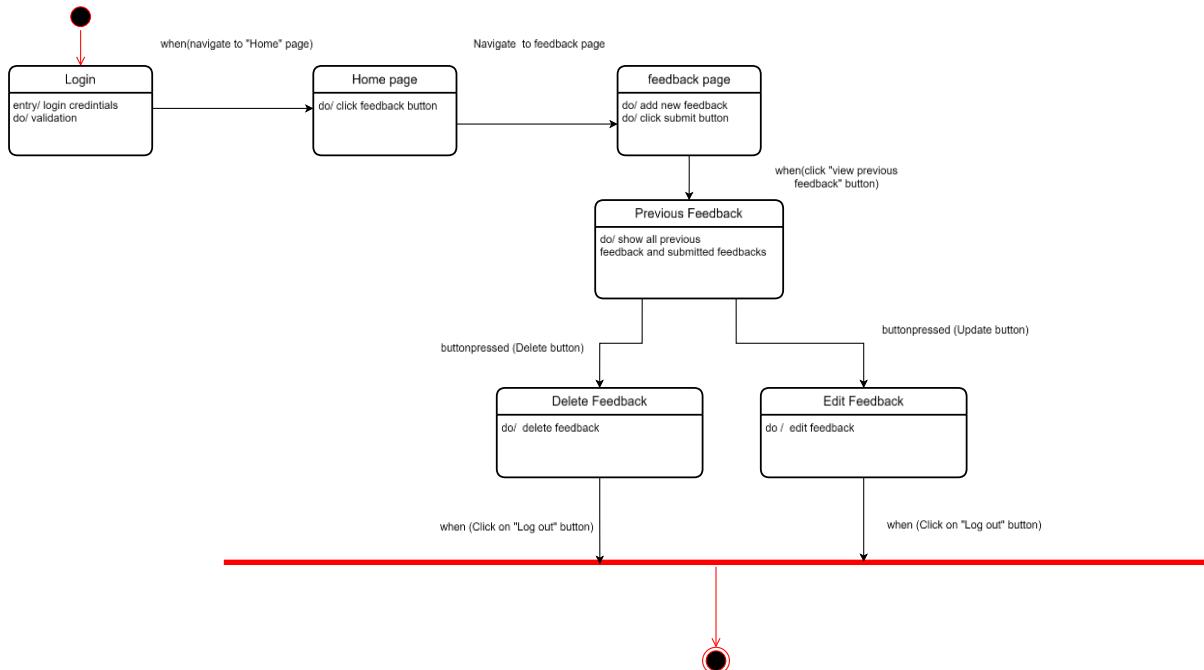


Figure 27 State chart diagram of Customer Affair Management process

State chart diagram of Jewellery Catalogue Management process

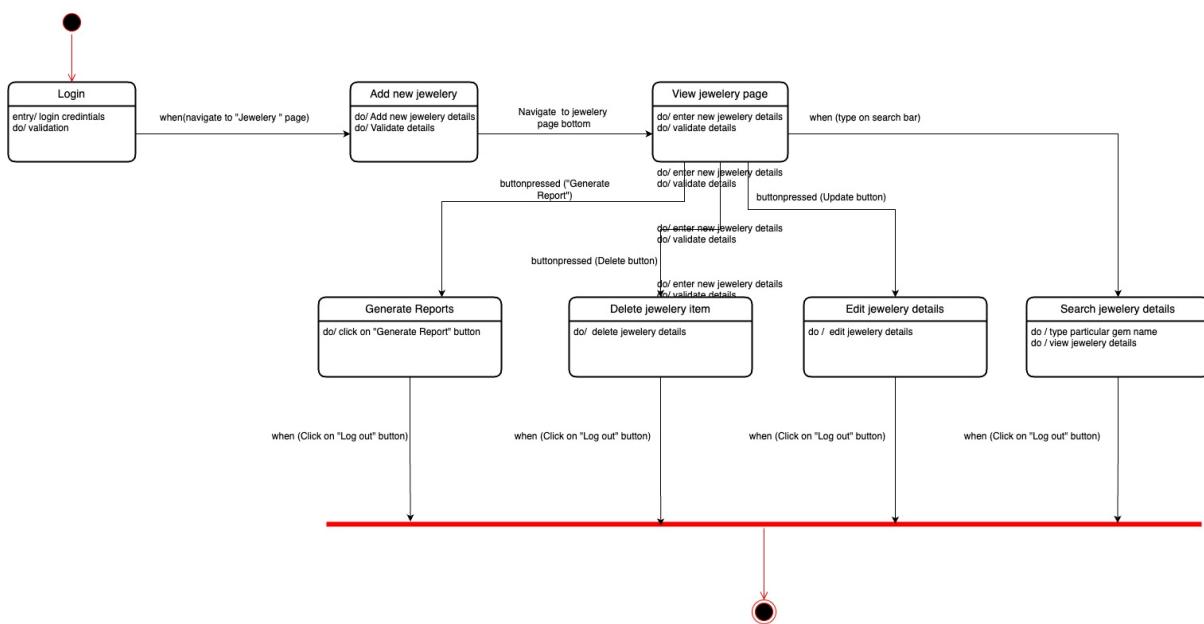


Figure 28 State chart diagram of Jewellery Catalogue Management process

Interfaces

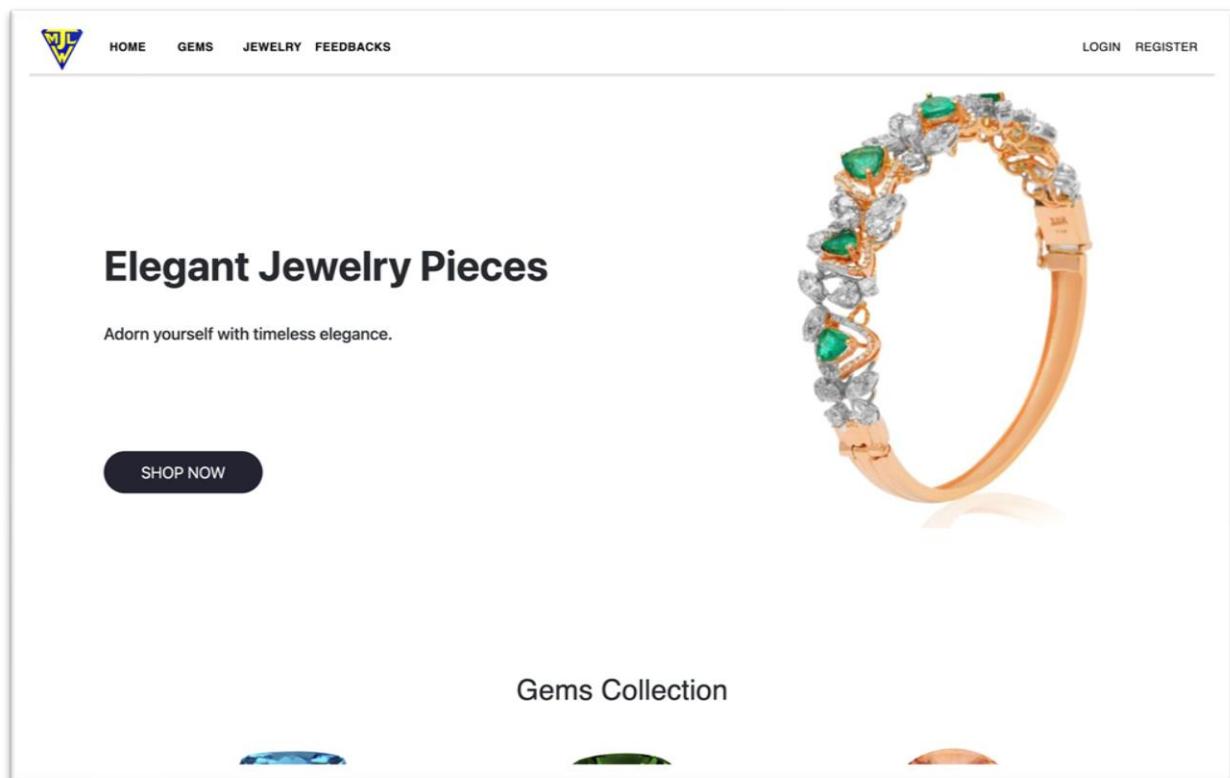


Figure 29 Home Page



HOME GEMS JEWELRY FEEDBACKS

LOGIN REGISTER

Gems Collection



Zircon



Green Sapphire



Padparadscha Sapphire



Pink Sapphire



Ruby



Yellow Sapphire



 HOME GEMS JEWELRY FEEDBACKS

LOGIN REGISTER



Your Ultimate Jewelry Destination

Discover the beauty and elegance of our exclusive jewelry collections that cater to your unique style and taste.



Flower Decor Ring
Rs 25000

Leaves Ring
Rs 28000

Angel Wings Ring
Rs 18000

Vintage Elegance Cameo
Necklace
Rs 90000

 HOME GEMS JEWELRY FEEDBACKS

LOGIN REGISTER

Welcome



Let's Get you setup

Sign up

Name

Username

Email

Password

Confirm Password

Phone Number

[REGISTER](#)

Already have an account? [Sign in](#)

Figure 30 Register page

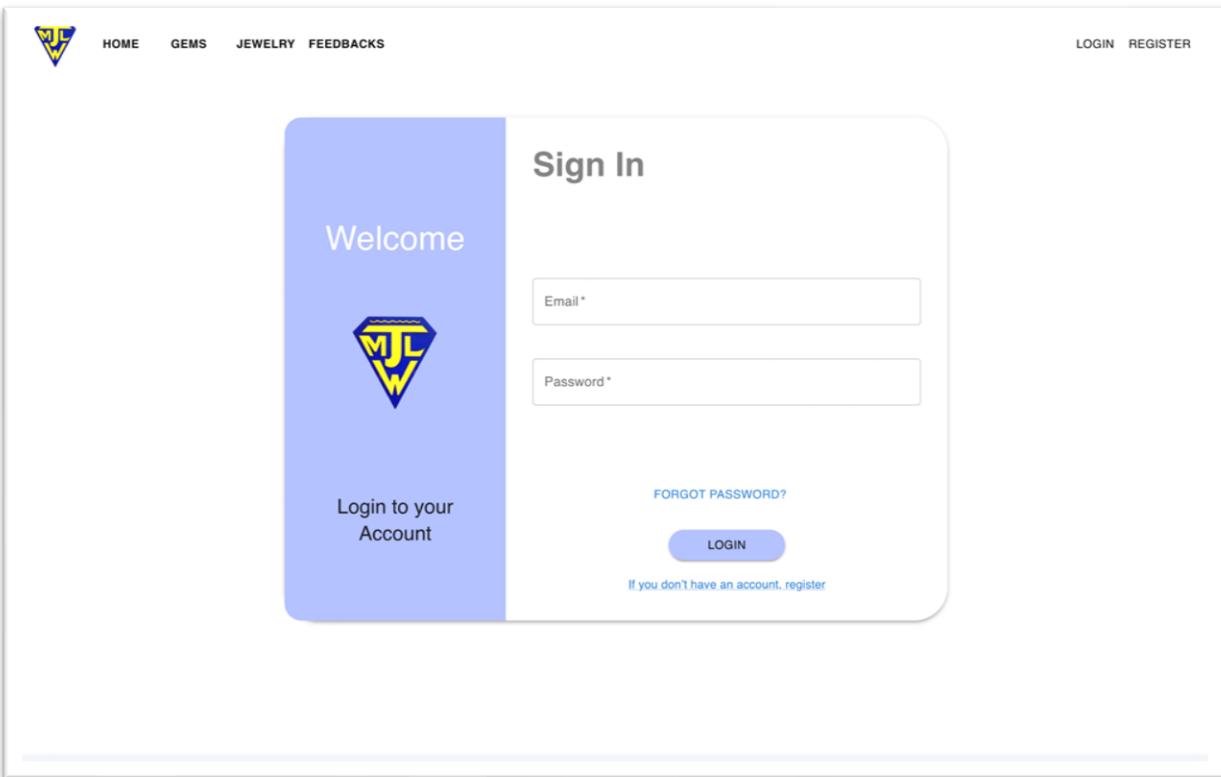
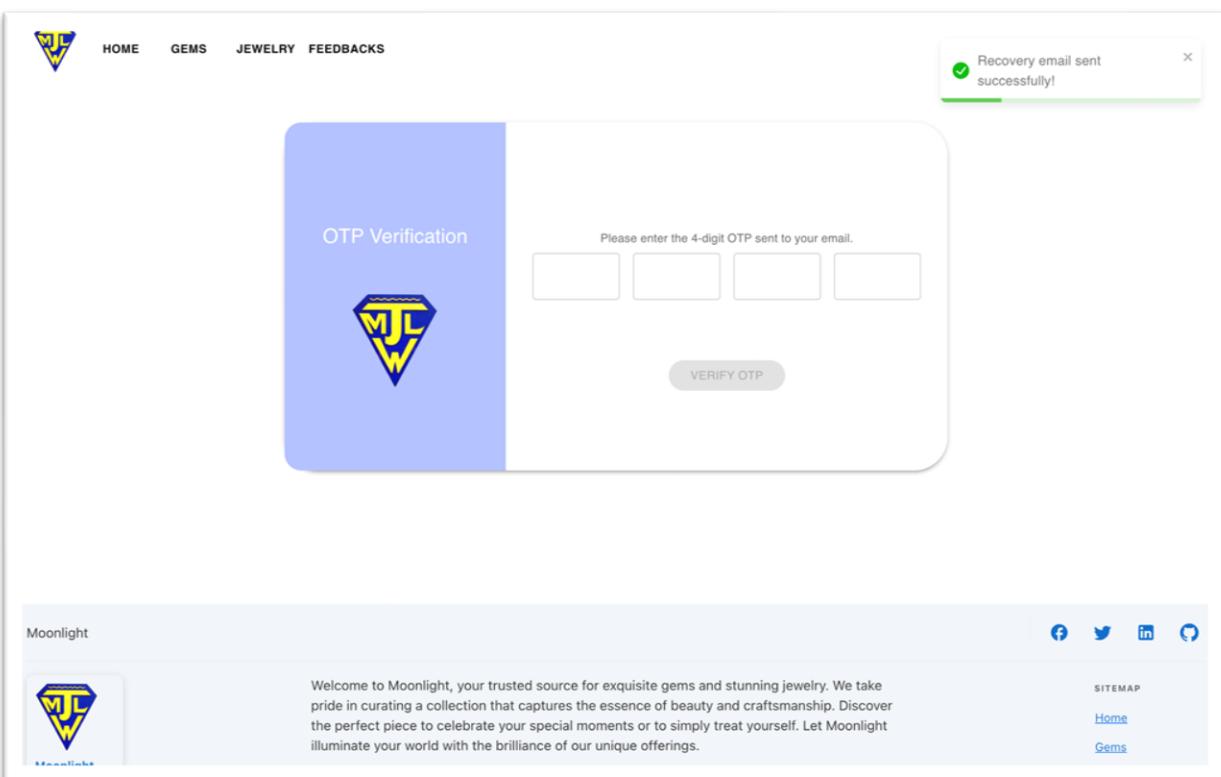


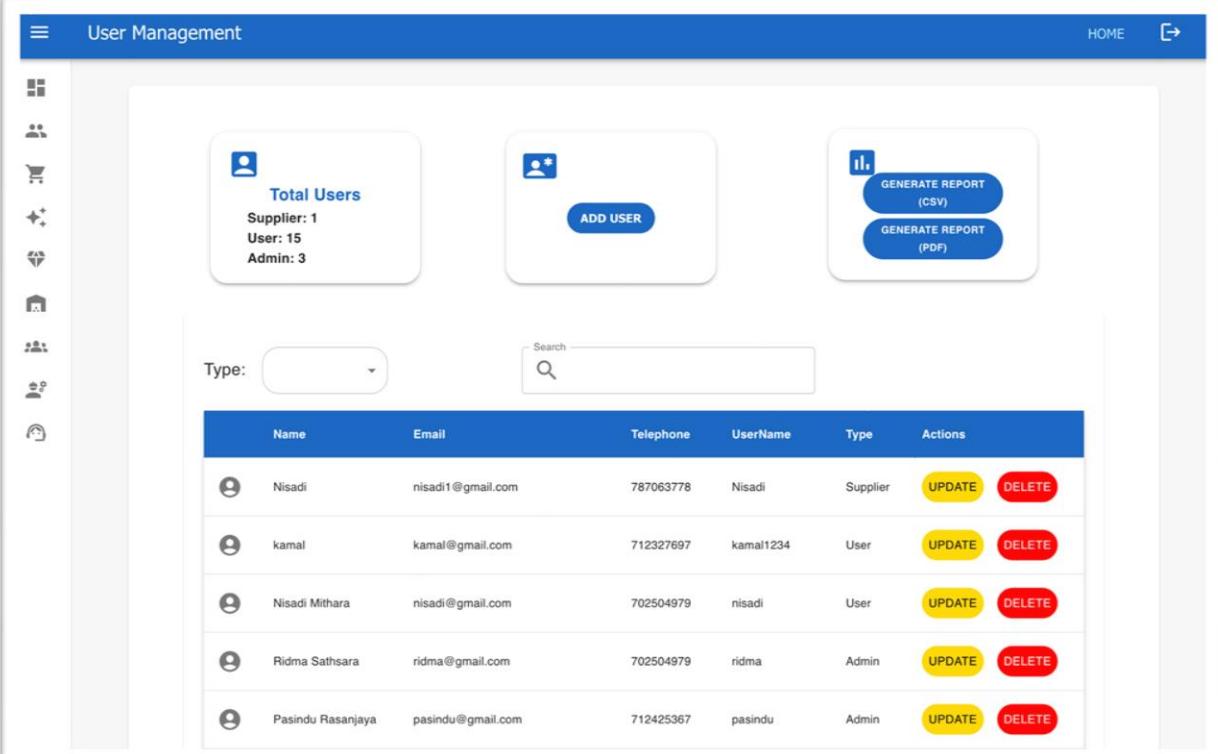
Figure 31 Sign in page



The screenshot shows the 'Change Password' page of the Moonlight website. At the top, there is a navigation bar with links for 'HOME', 'GEMS', 'JEWELRY', 'FEEDBACKS', 'LOGIN', and 'REGISTER'. Below the navigation bar, there is a large blue rectangular area containing the 'Change Password' form. The form includes fields for 'New Password*' and 'Confirm Password*', both marked with asterisks indicating they are required. A 'CHANGE' button is located at the bottom right of the form. Above the form, a message says 'For your email : katharindusandeepa@gmail.com'. On the left side of the blue area, there is a logo for 'MJL' and the word 'Moonlight'.

The screenshot shows the 'My Account' page of the Moonlight website. At the top, there is a navigation bar with links for 'HOME', 'GEMS', 'JEWELRY', 'FEEDBACKS', 'LOGOUT', a shopping cart icon with a red badge, and a user profile icon. Below the navigation bar, there is a large blue rectangular area containing the account information. On the left, there is a placeholder for a user profile picture with the text 'Hi, Tharindu Sandeepa' and a 'DELETE' button. On the right, there is a section titled 'My Account' with fields for 'Username: thari22', 'Email: thari@gmail.com', 'Name: Tharindu Sandeepa', and 'Phone: 723546735'. Below these fields is an 'EDIT' button. At the bottom of the blue area, there is a message that reads 'Welcome to Moonlight, your trusted source for exquisite gems and stunning jewelry. We take pride in curating a collection that captures the essence of beauty and craftsmanship. Discover the perfect piece to celebrate your special moments or to simply treat yourself. Let Moonlight'.

Figure 32 User Account Page



The screenshot shows the User Management dashboard. On the left is a vertical sidebar with icons for Home, User Management, Product Management, Supplier Management, and Reports. The main area has a blue header bar with the title "User Management" and navigation links for "HOME" and "LOGOUT". Below the header are three cards: "Total Users" (Supplier: 1, User: 15, Admin: 3), "ADD USER", and "GENERATE REPORT (CSV)" and "GENERATE REPORT (PDF)". The main content area includes a search bar with a dropdown for "Type" and a "Search" button, followed by a table listing user data:

Name	Email	Telephone	UserName	Type	Actions
Nisadi	nisadi1@gmail.com	787063778	Nisadi	Supplier	UPDATE DELETE
kamal	kamal@gmail.com	712327697	kamal1234	User	UPDATE DELETE
Nisadi Mithara	nisadi@gmail.com	702504979	nisadi	User	UPDATE DELETE
Ridma Sathsara	ridma@gmail.com	702504979	ridma	Admin	UPDATE DELETE
Pasindu Rasanjaya	pasindu@gmail.com	712425367	pasindu	Admin	UPDATE DELETE

Figure 33 User Management Dashboard



HOME GEMS JEWELRY FEEDBACKS

LOGOUT

Search



Enchanted Forest Layered Necklace
Rs 78000



Dreams Choker Necklace
Rs 120000



Celestial Starburst Y-Necklace
Rs 110000



Boho Blossom Flower Necklace
Rs 75000



Figure 34 Jewelry Catalogue

 [HOME](#) [GEMS](#) [JEWELRY](#) [FEEDBACKS](#) [LOGOUT](#)  



Boho Blossom Flower Necklace

Type: Necklace
Price: Rs 75000

Description: Embrace your inner flower child with our Boho Blossom Flower Lariat. This charming necklace features dainty floral charms suspended from a long, adjustable chain, allowing you to customize the length to suit your style. Whether worn loose and free-spirited or wrapped around the neck for a layered look, it's a bohemian-inspired piece that adds a touch of whimsy to any ensemble.

[ADD TO CART](#)  [ADD FEEDBACK](#)

Moonlight

 Welcome to Moonlight, your trusted source for exquisite gems and stunning jewelry. We take [SITEMAP](#)

 [HOME](#) [GEMS](#) [JEWELRY](#) [FEEDBACKS](#) [LOGOUT](#)  

[My Cart](#)



**Boho Blossom
Flower Necklace**

Rs. 75000

Subtotal: Rs. 75000
Discount: Rs. 0.00
Shipping: Free

Total: Rs. 75000

Including VAT

[CHECK OUT](#)

Moonlight



Moonlight
Gems & Jewelry

Welcome to Moonlight, your trusted source for exquisite gems and stunning jewelry. We take pride in curating a collection that captures the essence of beauty and craftsmanship. Discover the perfect piece to celebrate your special moments or to simply treat yourself. Let Moonlight illuminate your world with the brilliance of our unique offerings.

SITEMAP

[Home](#)

[Gems](#)

[Jewelry](#)

[Feedbacks](#)

Figure 35 Add to cart

The screenshot shows the Moonlight Jewelry website's checkout process. At the top, there is a navigation bar with links for HOME, GEMS, JEWELRY, FEEDBACKS, LOGOUT, a shopping cart icon, and a user profile icon.

Checkout

Review Your Order

User Name : admin
Boho Blossom Flower Necklace (x1): Rs. 75000
Total: Rs. 75000

Payment Details

Name: U.K.Sunandha
Account Number: 1050 5226 2750
Bank Name: SAMPATH BANK PLC
Branch Name: KALUTARA BRANCH
Transfer the deposit amount to the provided bank account details.

Payment Form

Amount*
yyyy-mm-dd
Upload Slip
Choose file No file chosen

PLACE ORDER

Moonlight

Welcome to Moonlight, your trusted source for exquisite gems and stunning jewelry. We take pride in curating a collection that captures the essence of beauty and craftsmanship. Discover

SITEMAP

Figure 36 Checkout

The screenshot shows the Moonlight Jewelry Order Management Dashboard. The top navigation bar includes a sidebar with icons for Home, Gems, Jewelry, Feedbacks, Logout, and a search bar. The main header is "Order Management".

Total Orders

ADD ORDER

GENERATE REPORT (CSV)
GENERATE REPORT (PDF)

Status:

Search:

Order ID	User ID	Items	Total	Amount	Date	Slip	Status	Action
1714012128564	Tharindu Sandeepakk	6628b70b2aa874296862ed33	20000	2000	2024-04-25T02:28:48.564Z		Confirm	
1714012549167	Nisadi Mithara	6628bb262aa874296862ed4c	20000	5000	2024-04-25T02:35:49.167Z		Processing	
1714014117675	Ridma Sathsara	6628cf9c2aa874296862ed78	8000	3000	2024-04-25T03:01:57.675Z		Confirm	

Figure 37 Order Management Dashboard

Jewellery

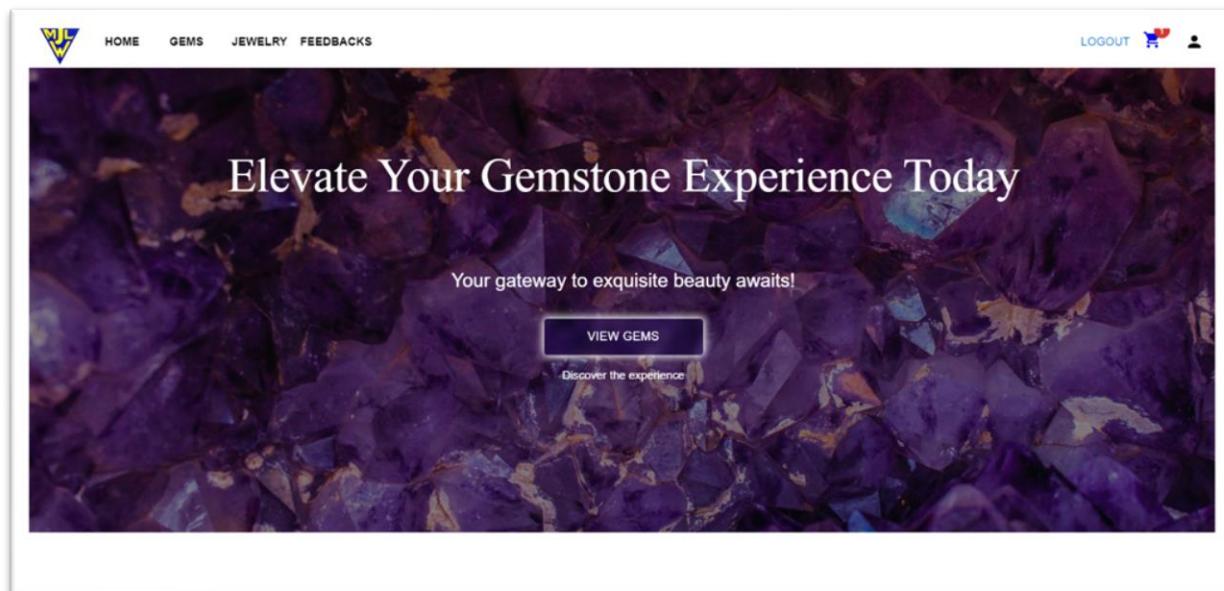
[HOME](#) [LOGOUT](#)

[ADD NEW ITEM](#)

Search Type [DOWNLOAD CSV REPORT](#)

Name	Type	Description	Price	Action
Midnight Moonstone Pendant	Necklace	Illuminate your neckline with our Midnight Moonstone Pendant. Featuring a captivating moonstone nestled in a sterling silver setting, this necklace exudes mystique and elegance. Perfect for adding a touch of celestial charm to your ensemble, it's a timeless piece that transitions effortlessly from day to night.	Rs 33000	DELETE UPDATE
Enchanted Forest Layered Necklace	Necklace	Step into a realm of enchantment with our Enchanted Forest Layered Necklace. This whimsical piece features multiple layers of delicate chains adorned with nature-inspired charms, including leaves, acorns, and woodland creatures. Crafted from high-quality materials, it adds a touch of magic to any outfit, making it perfect for nature lovers and dreamers alike.	Rs 78000	DELETE UPDATE
Dreams Choker Necklace	Necklace	Dive into the depths of style with our Ocean Dreams Seashell Choker. Adorned with iridescent seashells and shimmering beads, this choker captures the essence of sun-kissed shores and salty sea breezes. Whether worn alone for a beachy vibe or layered with other necklaces for a bohemian look, it's sure to make a splash wherever you go.	Rs 120000	DELETE UPDATE
Celestial Starburst Y-Necklace	Necklace	Reach for the stars with our Celestial Starburst Y-Necklace. Featuring a stunning starburst pendant suspended from a delicate chain, this necklace adds a celestial touch to any outfit. Crafted from shimmering gold or silver, it's a versatile piece that effortlessly transitions from day to night.	Rs 110000	DELETE UPDATE

Figure 38 Jewelry Management Dashboard



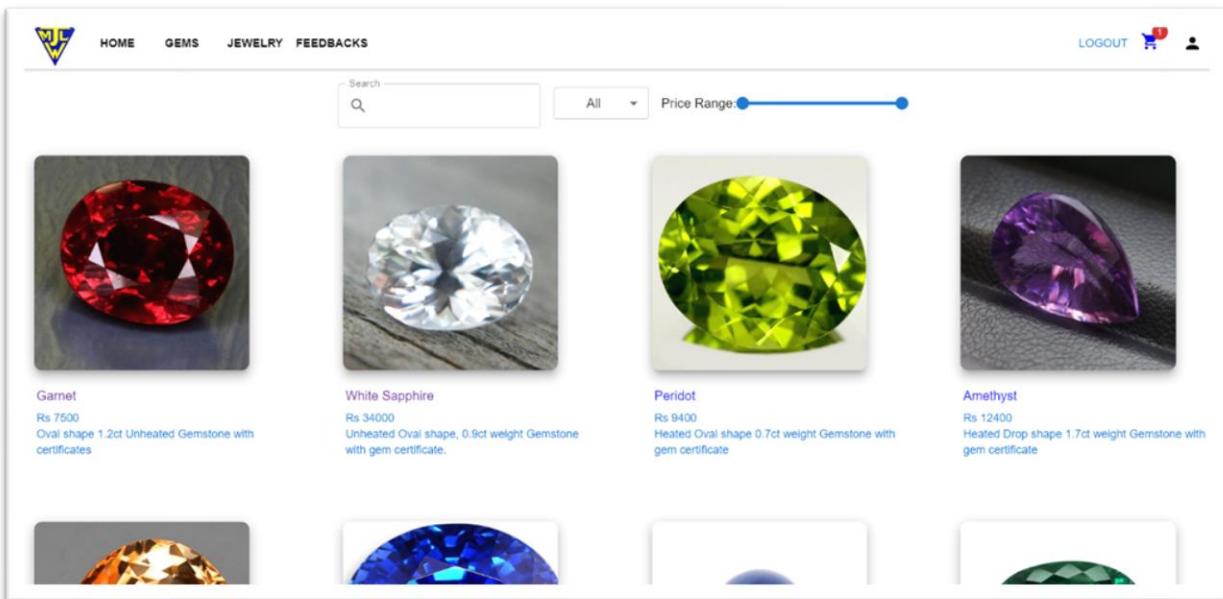
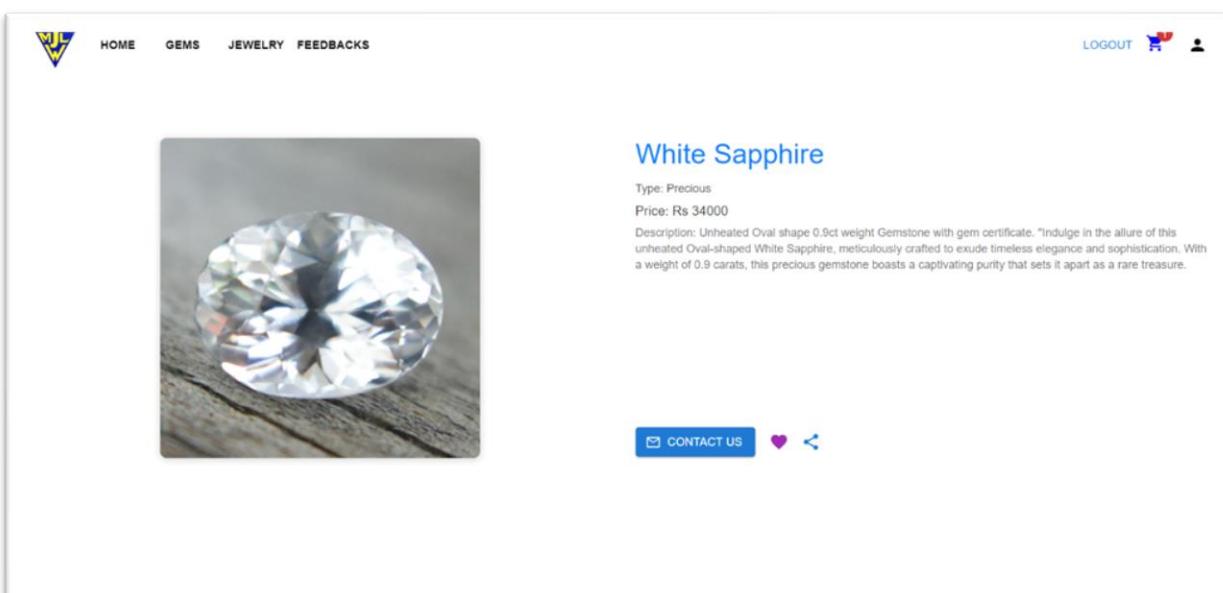


Figure 39 Gemstone Catalogue



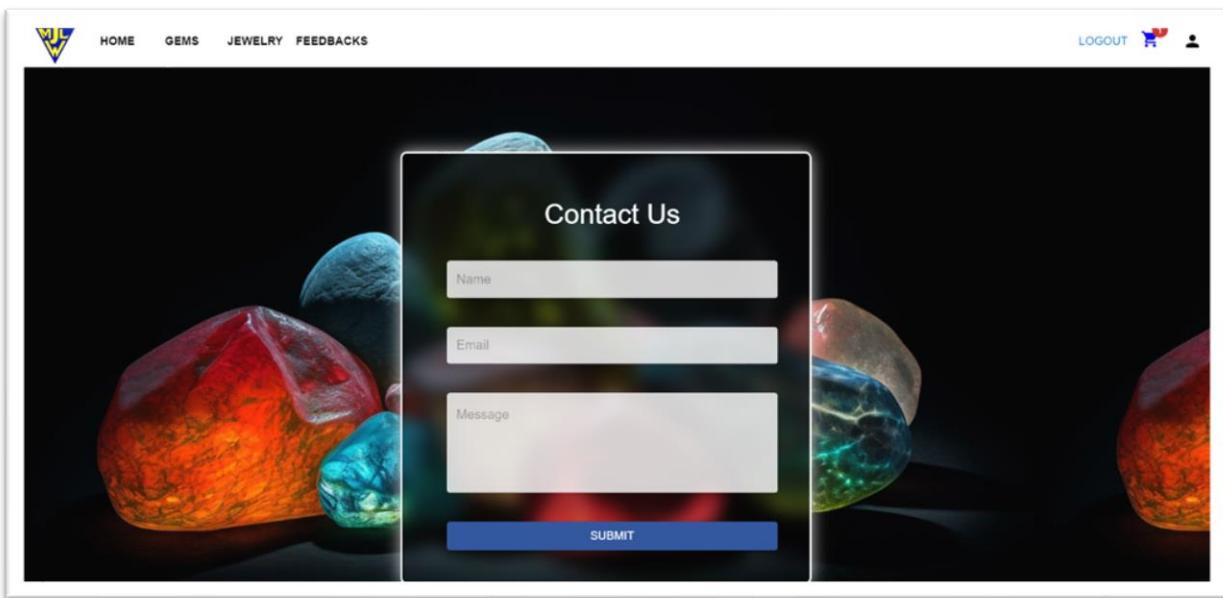


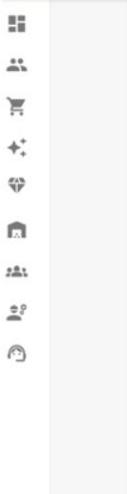
Figure 40 Contact us form.

A screenshot of the "Gem Management" application's dashboard. The top navigation bar includes a menu icon, the title "Gem Management", a "HOME" link, and a user profile icon. On the left, there is a vertical sidebar with icons for various management functions: Add to stock, All Inquiries, Display, Add, View Gems, Manage Inquiries, Displayed Gems, New Display, View Jewelry, Manage Jewelry, and View Feedbacks. The main content area is titled "Gem Catalogue Dashboard" and features four large, rounded rectangular buttons arranged horizontally. From left to right, they are: "Add to stock" (with a clipboard icon), "All Inquiries" (with a bell icon), "Display" (with a diamond icon), and "Add" (with a camera icon). Each button has a blue "VIEW GEMS", "MANAGE INQUIRIES", "DISPLAYED GEMS", or "NEW DISPLAY" button below it.

Figure 41 Gem Catalogue Dashboard

Gem Management

HOME 



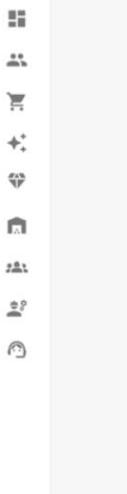
Gem Entry Form

Gem ID	Gem Name
<input type="text" value="0"/>	<input type="text"/>
Gem Color	Price \$
<input type="text"/>	<input type="text"/>
Weight of the Gemstone	Category
<input type="text"/>	<input type="text"/>
Voucher Number	Supplier ID
<input type="text"/>	<input type="text"/>
ADD	

Figure 42 Gem Entry Form

Gem Management

HOME 



ALL GEMS

Id	Gem_Name	Gem Color	Price \$	Weight (carat)	Category	Voucher Number	Supplier ID	Action	
								 UPDATE	 DELETE
10	Garnet	Red	33666666	0.56	Semi Precious	1024	S005	 UPDATE	 DELETE
11	Sapphire	Royal Blue	455000	3.1	Precious	1024	S002	 UPDATE	 DELETE
12	Blue Sapphire	Blue	34000	3.1	Precious	1024	S002	 UPDATE	 DELETE
13	Green sapphire	Light Green	45400	2.1	Precious	1024	S002	 UPDATE	 DELETE

 Search Gems  GENERATE REPORT  DOWNLOAD PDF  TOTAL GEMS: 6

Figure 43 Gem Stock

The screenshot shows the 'Gem Management' application interface. On the left is a vertical sidebar with various icons. The main area has a blue header bar with 'Gem Management' on the left and 'HOME' and a refresh icon on the right. Below the header is a search bar with a magnifying glass icon and a button that says 'Total Inquiries: 4'. To the right of the search bar is a 'DOWNLOAD REPORT' button with a cloud icon. The main content area displays a table with four rows of inquiry data. Each row contains columns for 'Name', 'Email', 'Message', and 'Action'. The 'Action' column features a 'DELETE' button with a trash icon. The data in the table is as follows:

Name	Email	Message	Action
ridma	ridma@gmail.com	I'm interested in sapphires. Send me an email about details.	DELETE
gihan	gihan@gmail.com	I need a lot of small piece if amethyst	DELETE
Dineli	Dineli@gmail.com	I'm interested in star sapphires. Would you be able contact me on my email.	DELETE
Tharusha	tharusha@gmail.com	I'm interested in Green sapphires. Would you be able contact me via email.	DELETE

Figure 44 All Inquiries

The screenshot shows the 'Material Management' dashboard. On the left is a vertical sidebar with icons. The main area has a blue header bar with 'Material Management' on the left and 'HOME' and a refresh icon on the right. The central part of the screen displays a table titled 'Available Material Stock' with seven rows of data. The table has columns for 'ID', 'Name', and 'Weight'. To the right of the table are three buttons: 'ADD MATERIAL ENTRY' with a plus sign icon, 'USE MATERIAL ENTRY' with a clipboard icon, and 'GENERATE REPORT' with a document icon. The data in the table is as follows:

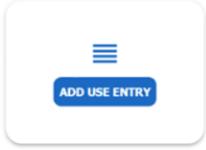
ID	Name	Weight
M001	Gold	10.25
M002	Silver	50.96
M003	Platinum	12.05
M004	Palladium	5.06
M005	Copper	23
M006	Alloy(for Silver)	45.88
M007	Alloy(for Gold)	19.95

Figure 45 Material Management Dashboard

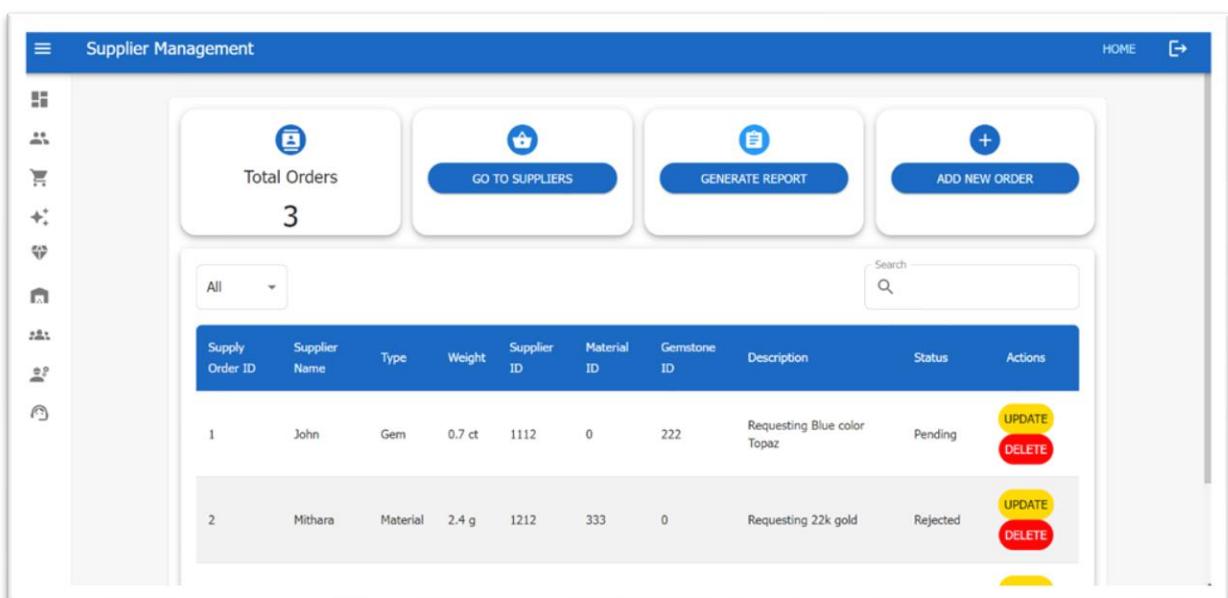
Material Management											HOME	Logout																						
	<div style="text-align: center;"> ≡ ADD NEW ENTRY </div>																																	
	<div style="margin-top: 20px;"> <div style="display: flex; justify-content: space-between;"> <div style="flex: 1;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> <div style="flex: 1; text-align: right;"> DOWNLOAD CSV REPORT GENERATE REPORT (PDF) </div> </div> </div>																																	
	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #007bff; color: white;"> <th>ID</th><th>Name</th><th>Weight</th><th>Order ID</th><th>Supplier ID</th><th>Cost</th><th>Voucher No</th><th>Date</th><th>Special Note</th><th colspan="2">Actions</th></tr> </thead> <tbody> <tr> <td>3</td><td>Platinum</td><td>10.5</td><td>101</td><td>102</td><td>1055000</td><td>255</td><td>2024-04-24T00:00:00.000Z</td><td>-</td><td>UPDATE</td><td>DELETE</td></tr> <tr> <td>4</td><td>Gold</td><td>8</td><td>120</td><td>66</td><td>125000</td><td>75</td><td>2024-04-25T00:00:00.000Z</td><td>-</td><td>UPDATE</td><td>DELETE</td></tr> </tbody> </table>		ID	Name	Weight	Order ID	Supplier ID	Cost	Voucher No	Date	Special Note	Actions		3	Platinum	10.5	101	102	1055000	255	2024-04-24T00:00:00.000Z	-	UPDATE	DELETE	4	Gold	8	120	66	125000	75	2024-04-25T00:00:00.000Z	-	UPDATE
ID	Name	Weight	Order ID	Supplier ID	Cost	Voucher No	Date	Special Note	Actions																									
3	Platinum	10.5	101	102	1055000	255	2024-04-24T00:00:00.000Z	-	UPDATE	DELETE																								
4	Gold	8	120	66	125000	75	2024-04-25T00:00:00.000Z	-	UPDATE	DELETE																								

Material Management													HOME	Logout	
	<h3>Add New Material Entry</h3> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="width: 45%;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> <div style="width: 45%;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> </div> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="width: 45%;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> <div style="width: 45%;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> </div> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="width: 45%;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> <div style="width: 45%;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> </div> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="width: 45%;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> <div style="width: 45%;"> <input style="width: 100%; height: 30px; border: 1px solid #ccc; padding: 5px; margin-bottom: 5px; font-size: 0.8em; border-radius: 5px; outline: none; font-family: inherit;" type="text"/> </div> </div> <div style="text-align: center;"> <input style="width: 100%; background-color: #007bff; color: white; padding: 5px 10px; border-radius: 5px; text-decoration: none; font-weight: bold; font-size: 0.8em; border: none;" type="button" value="ADD NEW ENTRY"/> </div>														

Figure 46 Add Material Form

Material Management					
       HOME 					
 ADD USE ENTRY					
Search <input style="width: 150px; height: 25px; border: 1px solid #ccc; border-radius: 5px; margin-bottom: 5px;" type="text"/>		DOWNLOAD CSV REPORT		USE MATERIAL REPORT (PDF)	
ID	Name	Weight	Date	Special Note	Actions
1	Silver	10.5	2024-04-24T00:00:00.000Z	for wedding rings	UPDATE DELETE
2	Gold	6	2024-04-25T00:00:00.000Z	for sign	UPDATE DELETE

Material Management					
       HOME 					
<h3>Add Use Material Entry</h3>					
ID	<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input style="background-color: #005a99; color: white; border: 1px solid #005a99; padding: 5px 10px; border-radius: 5px; width: 100%;" type="button" value="ADD NEW USE ENTRY"/>
Use Material Weight	<input type="text"/>	<input style="width: 100px; height: 25px; border: 1px solid #ccc; border-radius: 5px; margin-bottom: 5px;" type="text"/>	mm/dd/yyyy	<input type="button" value=""/>	
Special Note	<input type="text"/>				
<input style="width: 150px; height: 25px; border: 1px solid #ccc; border-radius: 5px; margin-bottom: 5px;" type="text"/> DOWNLOAD CSV REPORT USE MATERIAL REPORT (PDF)					
ID	Name	Weight	Date	Special Note	Actions



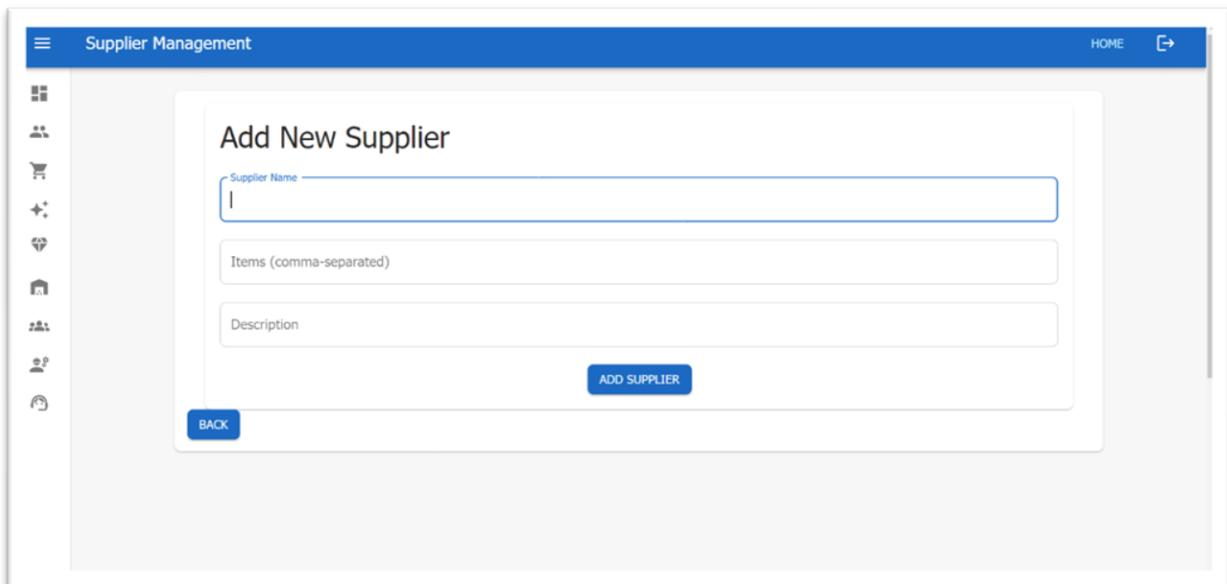
The Supplier Management Dashboard is a web-based application interface. At the top, there's a blue header bar with the title "Supplier Management". On the far right of the header are "HOME" and a user icon. Below the header is a vertical sidebar containing icons for various management functions: Home, Suppliers, Orders, Materials, Gemstones, Reports, and Help.

The main content area features four rounded rectangular buttons: "Total Orders" (3), "GO TO SUPPLIERS", "GENERATE REPORT", and "ADD NEW ORDER". Below these buttons is a dropdown menu set to "All" and a search bar with a magnifying glass icon.

A table lists two supplier entries:

Supply Order ID	Supplier Name	Type	Weight	Supplier ID	Material ID	Gemstone ID	Description	Status	Actions
1	John	Gem	0.7 ct	1112	0	222	Requesting Blue color Topaz	Pending	UPDATE DELETE
2	Mithara	Material	2.4 g	1212	333	0	Requesting 22k gold	Rejected	UPDATE DELETE

Figure 47 Supplier Management Dashboard



The "Add New Supplier" form is a modal window with a blue header bar and "Supplier Management" title. It includes a "BACK" button on the left and a "HOME" and user icon on the right.

The form has three input fields: "Supplier Name" (with placeholder "I"), "Items (comma-separated)" (empty), and "Description" (empty). A "ADD SUPPLIER" button is located at the bottom right of the form area.

The screenshot shows the 'Supplier Management' application interface. At the top, there's a blue header bar with the title 'Supplier Management' and navigation links for 'HOME' and 'LOGOUT'. On the left, a vertical sidebar contains icons for Home, Suppliers, Materials, Gemstones, Orders, and Reports. The main content area is titled 'Suppliers' and displays three supplier cards:

- Nethmi**: Items: Ruby, Blue Sapphire. Description: Ruby -> color = red, cut size = # | Blue Sapphire -> color=Blue, cut size = #. Buttons: UPDATE, PLACE AN ORDER, REMOVE.
- Nipun**: Items: Platinum. Description: Weight -> 4.5g. Buttons: UPDATE, PLACE AN ORDER, REMOVE.
- Mithara**: Items: Diamond. Description: Colors -> Blue. Buttons: UPDATE, PLACE AN ORDER, REMOVE.

A search bar is located at the top of the supplier list. A button to 'ADD NEW SUPPLIER' is also present.

Figure 48 Supplier details Page

The screenshot shows the 'Place Order' form within the 'Supplier Management' application. The title 'Place Order' is at the top. The form fields are as follows:

- Supply Order ID: 4
- Supplier Name: Akash
- Type: Gem Material Other
- Weight: 0.3 ct
- Supplier ID: 1210
- Gemstone ID: 044
- Description: (empty field)

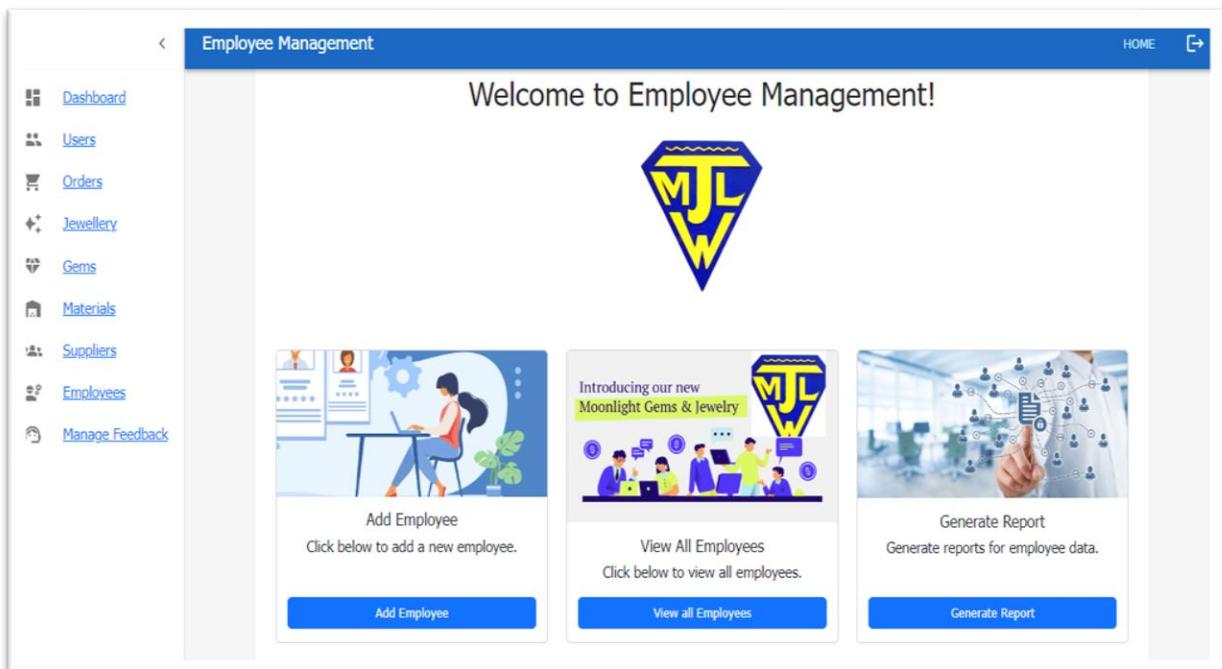


Figure 49 Employee Management Dashboard

The form is titled 'Add Employee' and contains fields for First Name, Last Name, Email, Position, and Department. Each field has a placeholder text and a corresponding input box. At the bottom are 'back' and 'Add Employee' buttons.

Figure 50 Add Employee Form

All Employees Details										
	Employee ID	First Name	Last Name	Email	Position	Department	Basic Salary	OT rate	Total OT	Total Salary
	6639e3626fac84888cef7333	Kanishka	Wijekoon	kanishka@gmail.com	Training	Department Of Jems & Jewellery	0	0	0	0
	6639e3ab6fac84888cef7338	Tharindu	Sandeepa	tharindu@gmail.com	Manager	National Gem & Jewellery Authority	0	0	0	0
	6639e3fd6fac84888cef733b	Vihara	Diwyanjali	vihara@gmail.com	Training	National Gem & Jewellery Authority	0	0	0	0
	6639e5a96fac84888cef7344	Nisadi	Mithara	nisadi@gmai.com	Operations Manager	Department Of Jems & Jewellery	0	0	0	0

[Generate Report](#)

[back](#)

Figure 51 Employee Details Page

Update Employee

First Name	<input type="text" value="Kanishka"/>
Last Name	<input type="text" value="Wijekoon"/>
Email	<input type="text" value="kanishka@gmail.com"/>
Position	<input type="text" value="Training"/>
Department	<input type="text" value="Department Of Jems & Jewellery"/>
Salary	<input type="text" value="0"/>
Update Employee	

Employee Management

Employee Details

Kanishka Wijekoon
Email: kanishka@gmail.com
Position: Trainee
Department: Department Of Gems & Jewellery
Basic Salary (Rs.): 0
OT Rate (%): 0
OT Total (Rs.): 0
Total Salary (Rs.): 0

New Salary
New Overtime Rate

Update Salary Generate Report View All Employees

Employee Management

HOME 

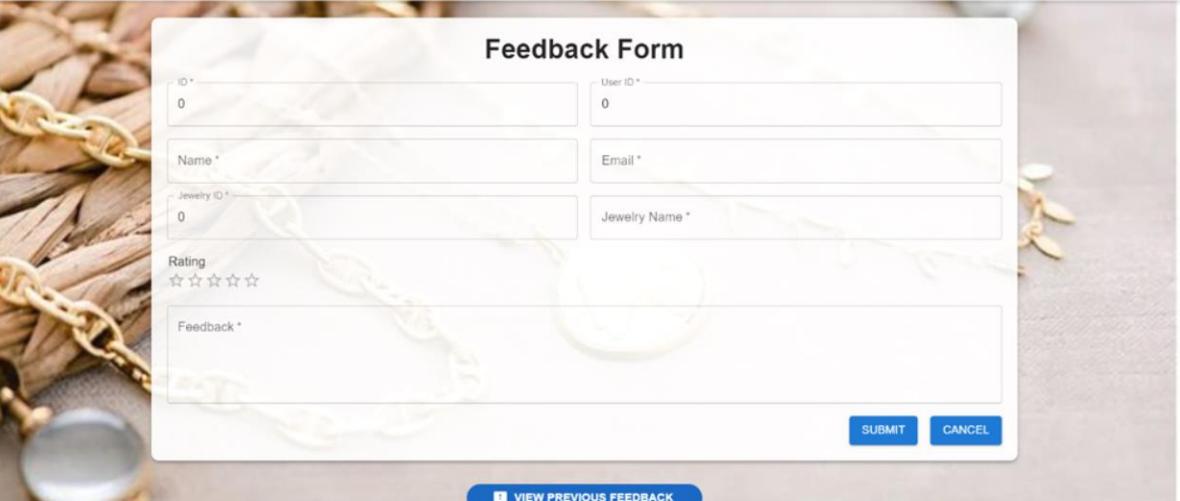


All Employee Details Report

Employee ID	First Name	Last Name	Email	Position	Department	Basic Salary	OT rate	Total OT	Total Salary
6639e3626fac84888cef7333	Kanishka	Wijekoon	kanishka@gmail.com	Trainng	Department Of Jems & Jewellery	0	0	0	0
6639e3ab6fac84888cef7338	Tharindu	Sandeepa	tharindu@gmail.com	Manager	National Gem & Jewellery Authority	0	0	0	0
6639e3fd6fac84888cef733b	Vihara	Diwyanjali	vihara@gmail.com	Trainng	National Gem & Jewellery Authority	0	0	0	0
6639e4ef6fac84888cef733e	Ridma	Sathsara	sathsara@gmail.com	Gemologist	Department Of Jems & Jewellery	0	0	0	0
6639e5a96fac84888cef7344	Nisadi	Mithara	nisadi@gmai.com	Operations Manager	Department Of Jems & Jewellery	0	0	0	0

[Download PDF](#)

[Back](#)



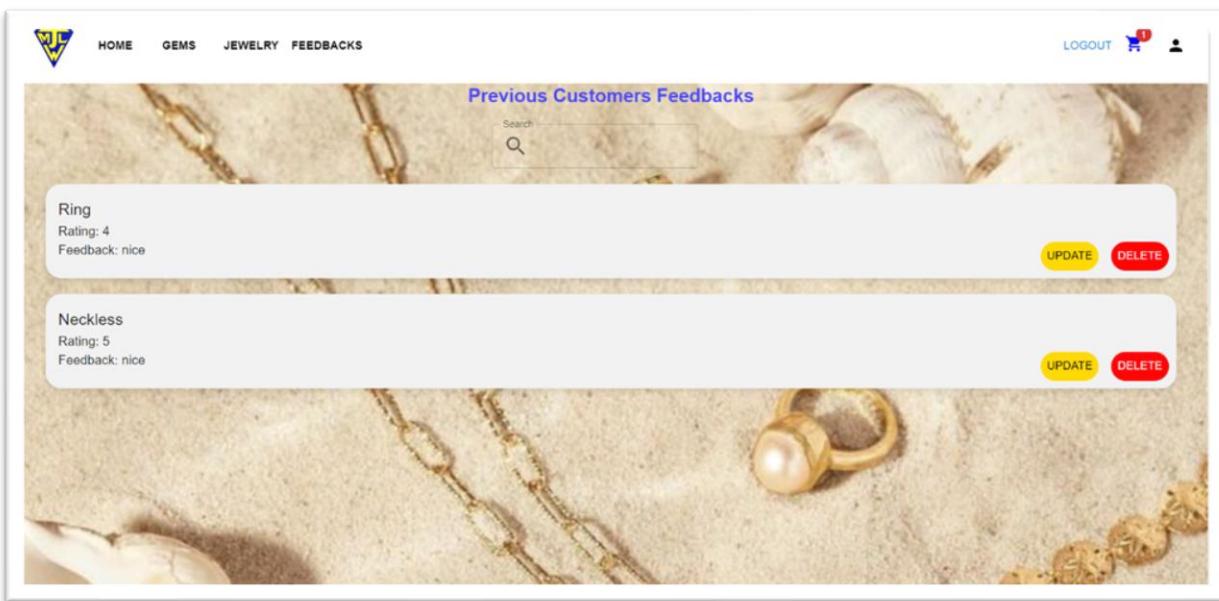
HOME GEMS JEWELRY FEEDBACKS [LOGOUT](#)  

Feedback Form

ID *	<input type="text" value="0"/>	User ID *	<input type="text" value="0"/>
Name *	<input type="text"/>	Email *	<input type="text"/>
Jewelry ID *	<input type="text" value="0"/>	Jewelry Name *	<input type="text"/>
Rating	☆ ☆ ☆ ☆ ☆		
Feedback *	<input type="text"/>		
SUBMIT CANCEL			

[VIEW PREVIOUS FEEDBACK](#)

Figure 52 Feedback form



The screenshot shows an "Admin View Feedback" page under the "Feedback Management" section. The top navigation bar includes links for HOME and a back arrow icon. On the left, there is a sidebar with various icons. The main content area has a title "Admin View Feedback" and a search bar with a magnifying glass icon. It also features two buttons: "Generate CSV" and "Generate PDF". A message box indicates "Total Feedbacks: 2". A table displays the following data:

ID	User_ID	Name	Email	Jewelry_ID	Jewelry_Name	Rating	Feedback	Actions
1	1	Gihan	gihan@gmail.com	1	Ring	4	nice	DELETE
2	2	Shehan	shehan@gmail.com	2	Neckless	5	nice	DELETE

Figure 53 Feedback Dasboard

Testing

Test Case Design

Test case ID: ML_001	Test designed by: Tharindu
Test title: Test the user registration Function.	Test designed day: 12/04/2024
Test priority (High/Medium/Low): High	Test executed by: Tharusha
Module name: User Registration.	Test executed day: 15/04/2024
Description: Verify the successful registration of a new user on the system.	
Dependencies: Availability of the user registration feature in the system.	
Test steps: <ol style="list-style-type: none"> 1. Navigate to the registration page. 2. Select the Sign-Up option. 3. Fill in the registration form with the valid details. (Name, Username, Phone, Email, Password, Confirm Password). 4. Click on the “Register” button. 5. Verify that the system displays a success message. 6. Log in to the system using the newly registered email and password. 7. Verify that the user profile is created. 8. Verify that the All-user details are added properly. 	

Table 1 Test the user registration Function.

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
MLUM_001	Name: "Tharindu" Username: "Tharisand" Email: "thari@gmail.com" Password: "tttt1234" Confirm password: "tttt1234" Phone: "0712324598"	Successful registration message and redirection to login page	Successful registration message and redirection to login page	Pass	Working properly.
MLUM_002	Name: "Tharindus" Username: "Tharisands" Email: "tharis@gmail.com" Password: "ssss1234" Confirm password: "tsws1234"	Error message indicating that the passwords do not match.	Error message indicating that the passwords do not match.	Pass	Working properly.

	Phone: "0712344598"				
MLUM_002	Name: "Sandeepa" Username: "sand2020" Email: "sand@gmail.com" Password: "2233" Confirm password: "2233" Phone: "0712340098"	Error message indicating that “ Password must be at least 8 characters long and include at least one letter and one number”	Error message indicating that “ Password must be at least 8 characters long and include at least one letter and one number”	Pass	Working properly.

Test case ID: ML_002	Test designed by: Vihara
Test title: Items added to Cart.	Test designed day: 12/04/2024
Test priority (High/Medium/Low): High	Test executed by: Tharindu
Module name: Order Management System	Test executed day: 15/04/2024
Description: This test verifies the functionality of adding items to the cart in the Order Management System.	
Preconditions (if there are any): Customer is logged into the system.	
Dependencies (if there are any):	
Test steps: <ol style="list-style-type: none"> 1. Navigate to the product page. 2. Click on the "Add to Cart" button for a product. 3. Verify that the product is added to the cart. 4. Check the quantity of the added item in the cart. Click on the "Cart" button. 5. Review the items listed in the cart. 6. Change the quantity of a product. 7. Verify the quantity and details of each item. 8. Click on the "Proceed to Checkout" button. Enter payment details. 9. Click on the "Submit Payment" button. 	

Table 2 Items added to Cart.

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
OM_01	Product: iPhone 12 Quantity: 1	Item added to the Cart.	Display the items listed in the Cart.	Pass	

OM_02	Product: iPhone 12 Quantity: 3	Error message showing "Not available 3 items"	Redirect to the Cart.	Fail	
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Test case ID: ML_003	Test designed by: Ridma
Test title: Test the add gem function in gem catalogue management system	Test designed day: 12/04/2024
Test priority (High/Medium/Low): High	Test executed by: Tharindu
Module name: Manager add new gem entire	Test executed day: 15/04/2024
Description: Verify the functionality to add gem in the system.	
Dependencies:	
Test steps: <ol style="list-style-type: none"> 1. Navigate to the "Add Gem" section of the gem catalogue management system. 2. Ensure that all required input fields (such as gem name, color, price, weight, category) are visible and accessible. 3. Enter valid data into all required fields. 4. Click on the "Submit" or "Add" button to add the gem to the system. 5. Verify that the system processes the request without errors. 6. Check the system database or backend to confirm that the new gem entry has been created. 7. Verify that the newly added gem appears correctly in the list of gems displayed by the system. 8. Verify that all details of the newly added gem match the data entered during the addition process. 	

Table 3 Test the add gem function in gem catalogue management system

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
SFMS_005	<ul style="list-style-type: none"> • Gem Name: "Sapphire" • Gem Color: "Blue" • Gem Price: 100 • Gem Weight: 2.5 • Gem Category: "Precious" • Supplier ID: "SUP001" • Voucher Number: "VN12345" 	The gem "Sapphire" with the specified details is successfully added to the catalogue	The gem "Sapphire" with the specified details is successfully added to the catalogue	Pass	

	<ul style="list-style-type: none"> Image: img3.jpg 	without any errors.	without any errors.		
SFMS_006	<ul style="list-style-type: none"> Gem Name: "Diamond" Gem Color: "White" Gem Price: 5000 (valid numeric value) Gem Weight: (missing input) Gem Category: "Precious" Supplier ID: "SUP003" Voucher Number: "VN12345" Image: img2.jpg 	The system should display an error message	The system displays an error message: "Please fill in all fields."	Pass	
SFMS_007	<ul style="list-style-type: none"> Gem Name: "Diamond" Gem Color: "123" (invalid input containing numbers) Gem Price: 50 Gem Weight: 3.4 Gem Category: "Precious" Supplier ID: "SUP003". Voucher Number: "VN12345" Image: img.jpg 	The system should display an error message.	The system displays an error message: "Invalid input. Please enter only letters."	Pass	

Test case ID: ML_004	Test designed by: Ridma
Test title: Test the inquiry submission functionality in the inquiry form	Test designed day: 12/04/2024
Test priority (High/Medium/Low): High	Test executed by: Tharindu
Module name: Inquiry Form	Test executed day: 15/04/2024
Description: Verify the functionality to submit an inquiry through the inquiry form.	
Dependencies:	

Test steps:

1. Open the web application and navigate to the inquiry form page.
2. Enter valid data in all required fields (name, email, message).
3. Click on the "Submit" button.
4. Verify that the inquiry submission is successful.
5. Check if the system displays a success message indicating the successful submission of the inquiry.
6. Verify that the form fields are cleared after submission.

Table 4 Test the inquiry submission functionality in the inquiry form

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
SFMS_009	<ul style="list-style-type: none">• Name: "" (empty)• Email: "dineli@gmail.com"• Message: " Do you have star sapphire."	The system should display an error message indicating that the name field is required.	The system displays an error message: "Please enter your name".	Pass	
SFMS_010	<ul style="list-style-type: none">• Name: "Ridma"• Email: "ridma@gmail.com"• Message: "Need a sapphire over 4ct."	The system should successfully submit the inquiry with the provided details.	The system successfully submits the inquiry with the provided details.	Pass	

Test Case ID: ML_005	Test design by: Nisadi
Test title: Place order for supplies	Test designed day: 15/04/2024
Test priority (High/Medium/Low): Medium	Test executed by: Tharindu
Module name: Supplier Management	Test executed day: 17/04/2024
Description: Verifies the end-to-end process of placing an order for supplies through the Supplier Management System.	
Preconditions (if there are any): User should login to the system.	
Dependencies (if there are any):	
Test steps: <ol style="list-style-type: none"> Supplier manager logs into the system using credentials. She/he browses the catalog of unavailable supplies. The system displays related supplier profiles on the screen. Supplier manager can choose a supplier. He/she selects the desired items and specifies quantities. The supplier manager reviews the order details and makes any necessary adjustments. He/she confirms the order. The system sends an order confirmation and sends it to the supplier. Supplier manager navigates to “Orders” option. The supplier manager can see previous and upcoming orders. He/she can navigate to “upcoming orders” option. Supplier Manager can select an order and click on “Edit order” button and after edit the order, then click on “OK”. Supplier manager can select another order and can cancel the order. He/she can select the "Generate order report" and download the order reports. Suppliers can login to the system using their credentials. Supplier navigates to the “Orders” page and reads the list of orders received. 	

Table 5 Place order for supplies

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
	Supply Order ID: 0001 Supplier Name: Christina Type: Gem Weight: 0.2ct Gemstone ID: g440 Status: Pending	Display alert “Order placed successfully” And direct to the dashboard.	Same as expected.	Pass	
	Supply Order ID: 0001 Supplier Name: Christina Type: Weight: 0.2ct Gemstone ID: g440 Status: Pending	Display error message “Fill out the blank field.”	Directed to Dashboard.	Pass	

Test case ID: ML_006	Test designed by: Kanishka
Test title: Test the Add Employee - Employee Management System	Test designed day: 16/04/2024
Test priority (High/Medium/Low): High	Test executed by: Tharindu
Module name: Add to the Employee Details	Test executed day: 17/04/2024
Description: Verify the Emp Details to add employee in the system.	
Dependencies: Ensure that validate details (e.g., Employee ID, email, position) are not accepted during add to the system	
Test steps: <ol style="list-style-type: none"> 1. Navigate to the add employee page 2. Fill in the Details form with the valid details. (Email, position,) 3. Click on the “Add” button. 4. Verify that the system displays a success message indicating that the Employee added successfully. 5. Navigate to the view employee page & Attempt to view in using the Employee Details. 6. Verify and check employee details, update details process (Assign Salary) completed without error or remove if required. 	

Table 6 Test the Add Employee - Employee Management System

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
EMP_00 1	<ul style="list-style-type: none"> • FrstName • LastName • email • position • branch 	Employee added successfully	Direct to the ‘Add page’ and display success message.	Pass	
EMP_00 1	<ul style="list-style-type: none"> • FrstName - kanishka • LastName – wijekoon • Email – ka@gmail.com • Position - Manager • Branch - Kaluthara 	Please fill out all required fields	Error message showing ‘Please fill out this field’	Fail	
EMP_00 1	<ul style="list-style-type: none"> • FrstName - kanishka • LastName – wijekoon • Email – ka@gmail.com • Position - Manager • Branch – Kaluthara • Salary -10000.00 • OT rate- 10.00 • OT total-1000.00 	Updated Employee Details	Added to successfully Salary.	pass	

	• Total salary- 11000.00				
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Test case ID: ML_007	Test designed by: Tharusha
Test title: Test the material management function in Moon Light Gems & Jewelry management system	Test designed day: 08/04/2024
Test priority (High/Medium/Low) : High	Test executed by: Tharindu
Module name: Material adding screen	Test executed day: 16/04/2024
Description: Add material to the stock	
Dependencies (if there are any):	
Test steps:	
1. Navigate to Login page 2. Select login as a admin and provide valid username and password 3. Navigate to ‘Material Management’ dashboard. 4. Click ‘Add Materials’ in the dashboard. 5. Enter material details in the material add form. 6. Click submit button and submit the form.	

Table 7 Test the material management function.

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
MLMM_001	id:1 name: silver weight : 15.5 order : 101 supplierID : 25 cost : 10000 voucher : 166 date : 16/04/2025 special : ok	Display alert “successfully” And direct to the display material details page	Display alert “successfully” And direct to the display material details page	Pass	Working properly
MLMM_002	id:2 name: gold weight : 8 order : 95 supplierID : cost : 190000 voucher : 150 date : 10/04/2024	Display error message “Fill out the blank field”	Display error message “Fill out the blank field”	Pass	Working properly

	special : ok				
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Test case ID: ML_008	Test designed by: Tharusha
Test title: Test the material management function in Moon Light Gems & Jewelry management system	Test designed day: 08/04/2024
Test priority (High/Medium/Low) : High	Test executed by: Tharindu
Module name: Material update screen	Test executed day: 16/04/2024
Description: Update materials in the stock	
Dependencies (if there are any):	
Test steps: <ol style="list-style-type: none"> 1. Navigate to Login page 2. Select login as a admin and provide valid username and password 3. Navigate to ‘Material Management’ dashboard. 4. Click ‘Update Materials’ in the dashboard. 5. Update material details in the material add form. 6. Click Update button and submit the form. 	

Table 8 Test the material management function

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
MLMM_003	id:1 name: silver weight : 15.5 order : 101 supplierID : 25 cost : 10000 voucher : 166 date : 16/04/2025 special : ok	Display alert “successfully update” And direct to the display material details page	Display alert “successfully update” And direct to the display material details page	Pass	

MLMM_004	<p>id:2 name: gold weight : 8 order : 95 supplierID : cost : voucher : 150 date : 10/04/2024 special : ok</p>	<p>Display error message “Fill out the blank field”</p>	<p>Display error message “Fill out the blank field”</p>	<p>Pass</p>	
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Test case ID: ML_009	Test designed by: Gihan
Test title: Test the Feedback & Rating Function.	Test designed day: 17/04/2024
Test priority (High/Medium/Low): High	Test executed by: Tharindu
Module name: Add feedback & Rating	Test executed day: 17/04/2024
Description : Adding Feedback & Rating for each jewelry.	
Dependencies : Availability of registered system manager profiles or service details in the system & User must login to the system.	
Test steps <ol style="list-style-type: none"> 1. Navigate to the login page of the Moonlight Gem & Jewelry Management System. 2. Log in as a regular user using valid credentials. 3. Upon successful login, locate and select the option to give feedback. 4. Ensure that the profiles or service details of service providers are available in the system. 5. Select the jewelry for which you want to add feedback & rating. 6. Enter the feedback details, including the rating and any comments. 7. Submit the feedback. 8. Verify that the system confirms the successful submission of feedback. 9. Optionally, check the feedback view page or service details page to ensure that the feedback & rating are displayed correctly. 	

Table 9 Test the Feedback & Rating Function.

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
MLFM_002	User ID: U001 Name: John Smith Rating: 4.5 Feedback: Excellent service, very satisfied! Photo: [link to photo] (optional)	The system should navigate the user to the feedback details page.	The system should navigate the user to the feedback details page.	Pass	

MLFM_002	User ID: U001 Name: John Smith Rating: 4.5 Feedback: Excellent service, very s#\$%%^! Photo: [link to photo] (optional)	The system should display an error message indicating that certain fields, such as violation feedback polices, system error, network error.	The system should display an error message indicating that certain fields, such as violation feedback polices, system error, network error.	Pass	
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Test case ID: ML_009	Test designed by: Gihan
Test title: Test the Feedback & Rating Function.	Test designed day: 17/04/2024
Test priority (High/Medium/Low): High	Test executed by: Tharindu
Module name: Edit feedback & Rating	Test executed day: 17/04/2024
Description : Allowing manager to check Feedback & Ratings Received for Their Services.	
Dependencies : Availability of feedback view page or feedback details in the system.	
<p>Test steps</p> <ol style="list-style-type: none"> 1. Navigate to the login page of the Moonlight Gem & Jewelry Management System 2. Log in as a regular user using valid credentials. 3. Select the view feedback page. 4. Upon successful login, locate and select the option to update feedback. 5. Display the feedback from & refill the details to the feedback from which submitted earlier. 6. Reenter the new feedback details, including the new rating and new comments. 7. Update the new feedback. 8. Verify that the system confirms the update successful submission of feedback. 9. Optionally, check the feedback view page to ensure that the feedback & rating are displayed correctly. 	

Table 10 Test the Feedback & Rating Function.

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
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MLFM_009	Name: Devin vixcy Customer Affair ManagerID: S023 Feedback: Excellent service, very satisfied!	Display Feedback update successfully.	Display Feedback update successfully.	Pass	
MLFM_009	Name: Devin vixcy Service provider ID: S023 Feedback: Thanks for rating us \$%#@.	Display error message invalid feedback.	Display error message invalid feedback.	Pass	

Test case ID: SFJS_10	Test designed by: Pasindu
Test title: Test the Jewelry management function in Moon Light Gems & Jewelry management system	Test designed day: 18/4/2024
Test priority (High/Medium/Low) : High	Test executed by: Tharindu
Module name: Jewelry adding screen	Test executed day: 19/04/2024
Description: Add Jewelry to the inventory	
Dependencies (if there are any): None	
Test steps:	
7. Navigate to Login page 8. Select login as admin and provide valid username and password 9. Navigate to 'Jewelry Management' dashboard. 10. Click 'Add Jewelry' in the dashboard. 11. Enter Jewelry details in the Jewelry add form. 12. Click submit button and submit the form.	

Table 11 Test the Jewelry management function.

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
SFJS_007	id: 001 name: Diamond Necklace weight : 10 cost : 500 special : None image :	Display alert “Jewelry item inserted successfully” And direct to the display details page	Display alert “Jewelry item inserted successfully” And direct to the display details page	Pass	—
SFJS_008	id: 002 name: Sapphire Ring weight : 5 order : 234 cost : 400 special : None image :	Display error message “Fill out the blank field”	Direct to the display details page	Fail	Weight field left blank. Ensure all required fields are filled before submission.

Test case ID: SFJS_012	Test designed by: Pasindu
Test title: Test the Jewelry management function in Moon Light Gems & Jewelry management system	Test designed day: 18/4/2024
Test priority (High/Medium/Low) : Medium	Test executed by: Tharindu
Module name: Jewelry deletion screen	Test executed day: 19/04/2024
Description: Delete Jewelry to the inventory	
Dependencies (if there are any): None	
Test steps:	
<ol style="list-style-type: none"> 1. Navigate to Login page 2. Select login as an admin and provide a valid username and password 3. Navigate to ‘Jewelry Management’ dashboard. 4. Search for the jewelry item to be deleted. 5. Select the jewelry item. 6. Click on the delete button. 7. Confirm the deletion action. 	

Table 12 Test the Jewelry management function.

Test ID	Test Inputs	Expected Output	Actual Output	Result (Pass/Fail)	Comments
SFJS_009	Search for the jewelry item "Ruby Pendant"	Jewelry item "Ruby Pendant" found and selected	Jewelry item "Ruby Pendant" selected	Pass	—
SFJS_010	Click on the delete button	Confirmation message "Are you sure you want to delete this item?" displayed	Confirmation message "Are you sure you want to delete this item?" displayed	Pass	—
SFJS_011	Confirm the deletion action	Alert message "Jewelry item deleted successfully" displayed	Alert message "Jewelry item deleted successfully" displayed	Pass	—

Evaluation and Conclusion

Evaluation

The Gem and Jewellery Shop Management System is designed to streamline and enhance the operations of Moonlight Gems & Jewelry, an established artisanal shop in Kalutara. It leverages the MERN stack (MongoDB, Express.js, React, and Node.js) to seamlessly integrate digital functionalities with the shop's physical operations.

The system offers a wide array of features across several key areas;

- The system facilitates the creation, editing, and deletion of user accounts. It also supports password resets, adding new users, and generating user details reports. A search functionality enables efficient retrieval of user information.
- Users can securely access the system by logging in with their credentials. Role-based access control ensures that users have appropriate permissions based on their roles.
- Customers can browse, search, add items to the cart, edit orders, cancel orders, and place orders. They can also view order history and receive notifications. Order Manager functionalities allow for the management of orders, including verification of product availability, order confirmation, cancellation, and handling returns.
- The system provides tools for managing materials, including viewing current stock levels, adding new materials, updating details, deleting materials, and generating reports for material stock.
- The system enables the System Manager to handle all employee-related tasks, including registration, leave evaluation, and salary management. It provides tools to view, modify, and remove employee details, as well as finalize employee salaries.
- Supplier Manager functionalities allow for the seamless management of supply orders. This includes placing orders, reading order lists, editing and canceling orders, generating reports for order history, receiving orders, and marking orders as pending.
- Customers can submit feedback through the system, which is then reviewed and approved by the admin. Users can also edit or remove their feedback. The admin can generate reports for feedback to gain insights.

Overall, the Gem and Jewellery Shop Management System offers a comprehensive solution for Moonlight Gems & Jewelry to optimize its operations, enhance customer satisfaction, and drive business growth. It represents a strategic investment in leveraging technology to maintain competitiveness and ensure long-term success in the gem and jewellery industry.

Conclusion

The Gem and Jewellery Shop Management System represents a significant advancement in the operations of Moonlight Gems & Jewelry. By leveraging modern technology and the MERN stack, the system offers a comprehensive suite of features that streamline various aspects of the business, from employee and supplier management to catalog and inventory control.

One of the key strengths of the project is its ability to seamlessly integrate digital functionalities with the shop's physical operations. This integration enhances efficiency, accuracy, and customer satisfaction. The system enables Moonlight Gems & Jewelry to manage its workforce effectively, handle supplier relationships, and maintain an up-to-date inventory of gemstones, jewellery, and materials.

Moreover, the system fosters improved customer engagement through features such as feedback management, user accounts, and a user-friendly catalog interface. Customers can conveniently browse, select, and purchase items, while the shop can efficiently manage orders, handle returns, and generate insights from feedback data.

Overall, the Gem and Jewellery Shop Management System not only modernizes the shop's operations but also positions it as a pioneer in industry innovation. By investing in this technology-driven solution, Moonlight Gems & Jewelry demonstrates its commitment to excellence, responsiveness to customer demands, and readiness to adapt to evolving market trends. This strategic move is poised to enhance the shop's competitiveness, sustainability, and long-term success in the gem and jewellery industry.

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