

CHAPTER 1

INTRODUCTION

Nowadays internet is widely used in almost every field of life. In this rapidly growing era, many people have no time to go and do the shopping. Also, the shopkeepers need a literal media for marketing their products. The project entitled “**AQUERA**” is a web-based project describing a unique market place for aquatic related items like Aquarium Fishes, Aquarium, Fish foods, Aquatic plants, Aquarium stones, Sands, Lights, Air Filter etc. Aquatic enthusiasts will enjoy this site.

Two modules make up this project. Admin who oversees all activities such as verification of genuine seller, can view the user registration details, booking details and so on. Anyone can use the website as a Buyer or Seller by logging in or registering. This website allows sellers to offer their products and buyers to purchase products that meet their needs.

The two main modules of the system are:

1. Admin
2. User (Buyer/Seller)

1.Admin Module

The admin plays most important role in the system. The admin holds the responsibility to ensure smooth working of the system. The main roles of admins are verification of genuine seller. The admin can manage all the system process. Admin can view user registration details and also can view booking details.

2.User Module (Buyer / Seller)

The user can login into the system as a buyer or seller. The seller can add, delete, update products and product details. Seller can also view the booking details. Manage payment details. The buyer can register into the system with some details. The buyer can buy the products as per categories listed on the UI.

CHAPTER 2

SYSTEM ANALYSIS

2.1 EXISTING SYSTEM

The study about the existing system helps to know as much information as possible about the system. There exist so many websites for aquarium products. There are numerous flaws in the current system. There is not an effective website that contain all the aquatic related things. Won't give any information about aquarium products. Most of the website contains limited products only.

Drawbacks in existing system

- Time consuming
- Validation: The existing system doesn't provide a proper validation on information. The user won't be known if it is genuine or not.
- Lack of information about the products.
- Sites are often dangerous: Most of the existing system have dangerous information leakage and other misleads.
- Limited products: Most of the website contains limited products only.

2.2 PROPOSED SYSTEM

The proposed system's goal is to develop a more efficient and systematic application for people who are passionate about selling and buying Aquarium products. The system is very user friendly and which makes the user to handle the application more conveniently. The project named **AQUERA** which contain all aquarium related products with specific information about the products. The system provide validation for genuine buyers and in terms of security, all of the user's personal information is kept safe. The primary goal is to establish a platform for enthusiastic entrepreneurs. There are no advertisements or

redirecting links on the UI. The proposed system provides a platform for selling and buying aquarium products. Sellers can create accounts in this system, but they must be validated by the administrator before they can sell their products. The admin holds the authority to verify sellers so that they can sell their products. Customers can buy the things that are sold by verified sellers. This increases the system's security and efficiency.

Advantages of Proposed System

- User friendly and easy to handle.
- Provide more security and privacy.
- Includes all aquarium related products.
- Provides specific information about the products.
- Faster information access.
- Efficient order traceability.

CHAPTER 3

SYSTEM SPECIFICATION

3.1 SOFTWARE SPECIFICATION

- 1) Operating System : Window 10
- 2) Front End : JAVA
- 3) IDE : Net Beans Version 13
- 4) Back End : MYSQL Version 8.0.21
- 5) Server : Apache Tomcat 9

3.2 HARDWARE SPECIFICATION

- 1) Processor : Intel® core™ i3-7100U CPU
- 2) RAM : 4GB
- 3) Hard Disk Drive : 64-bit OS
- 4) Monitor Size : 15.6 HD Display
- 5) Keyboard : Standard PS/2 keyboard
- 6) Mouse : Touchpad

CHAPTER 4

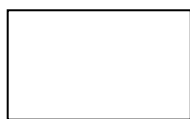
SYSTEM ANALYSIS AND DESIGN

System design's main aim is to identify the modules that should be in the system, and the specifications of these modules and how they interact with each other to produce the desired results. At the end of the system design all the major data structures, file formats and the major modules in the system and their specification are decided.

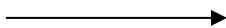
4.1 DATA FLOW DIAGRAM

A DFD is a graphical tool that depicts information flow and transforms data from input to output. A DFD models a system by using external entity from which data flows into a process, while transforms the data create the output data flows, which go through the other processes or external entities or files. Data in files may also flow to processes as inputs. The main merit of the DFD is that it can provide an overview of what data the system should process what transformations of data are done and where the result flows. The graphical representation of the system is between the user and the analysts. A DFD has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design.

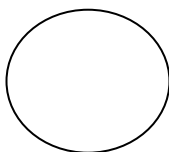
Basic symbols used in DFD:



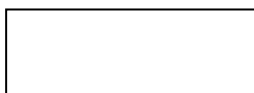
Source or destination of data



Data Flow

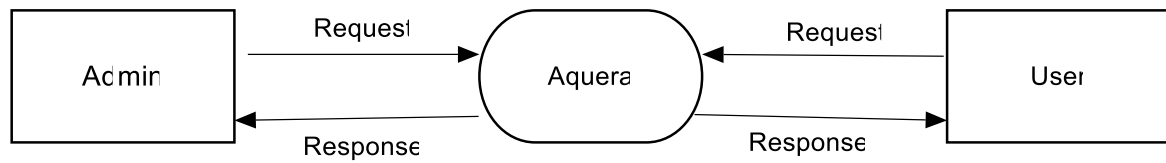


Process that transforms data flow

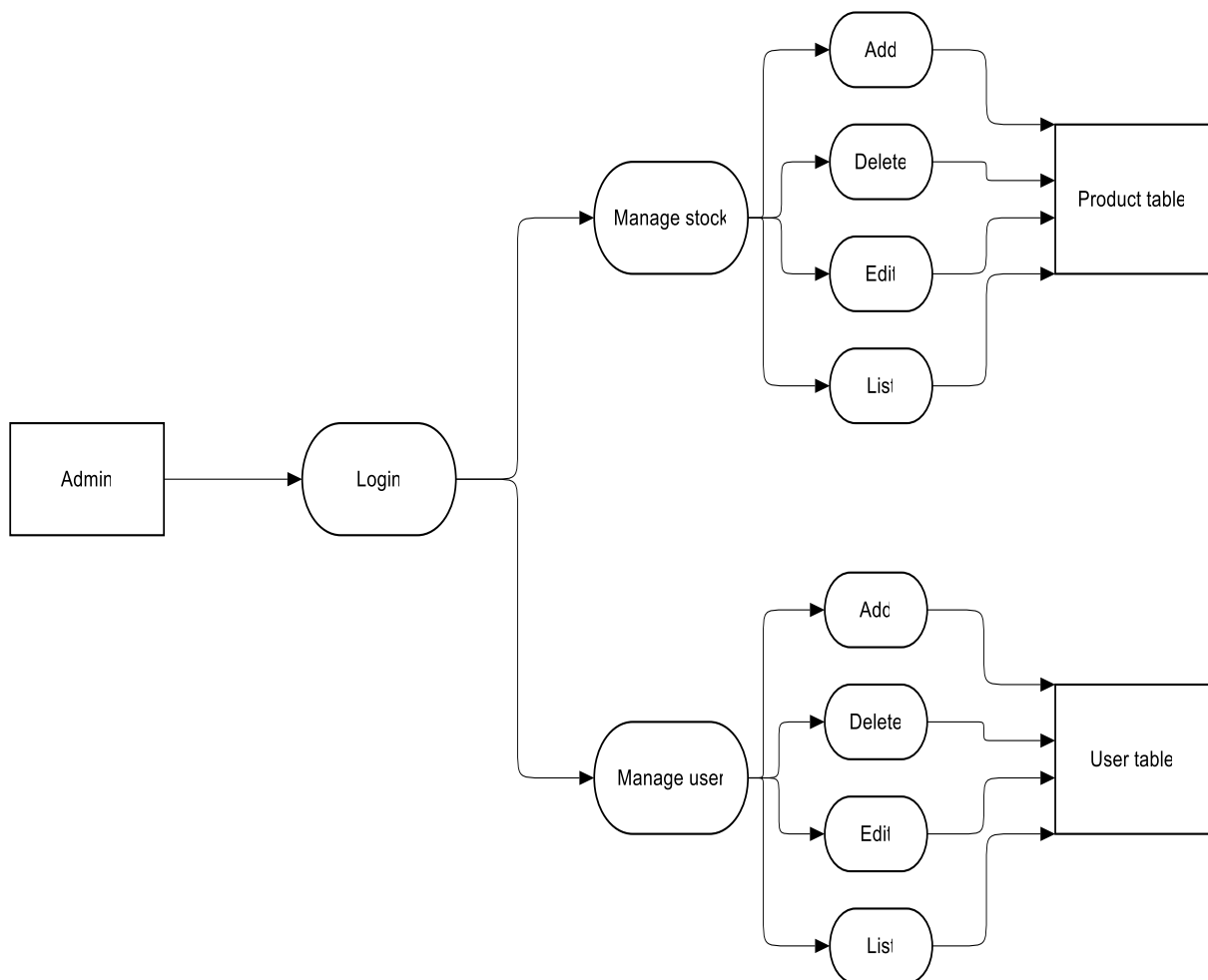


Data store

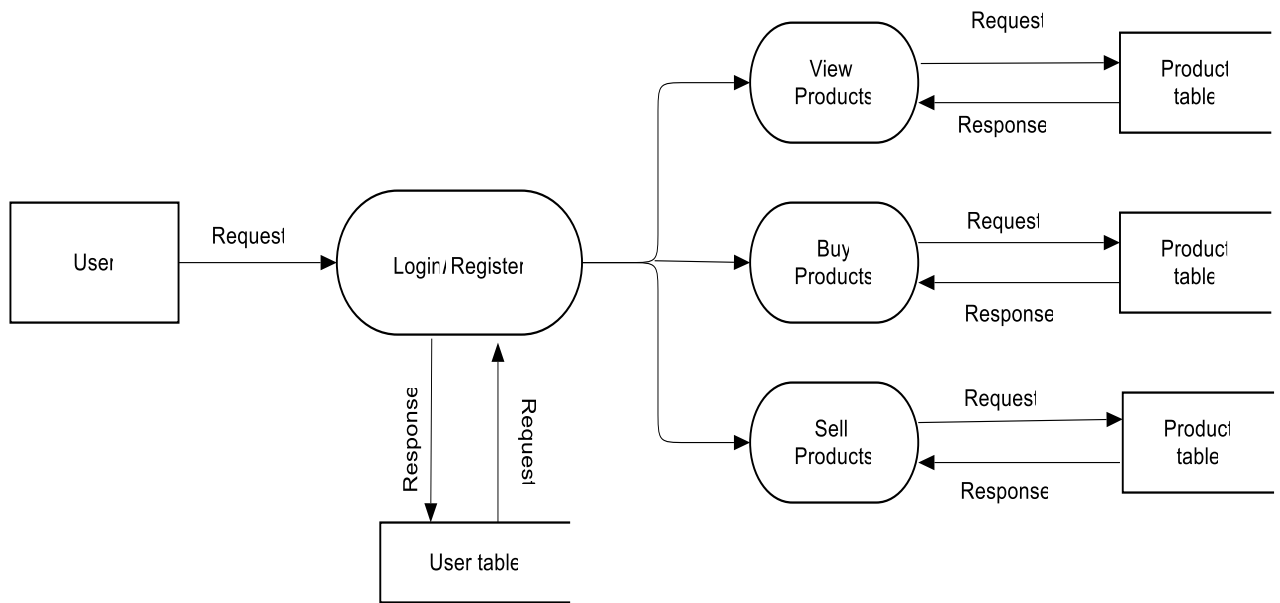
Context Level DFD



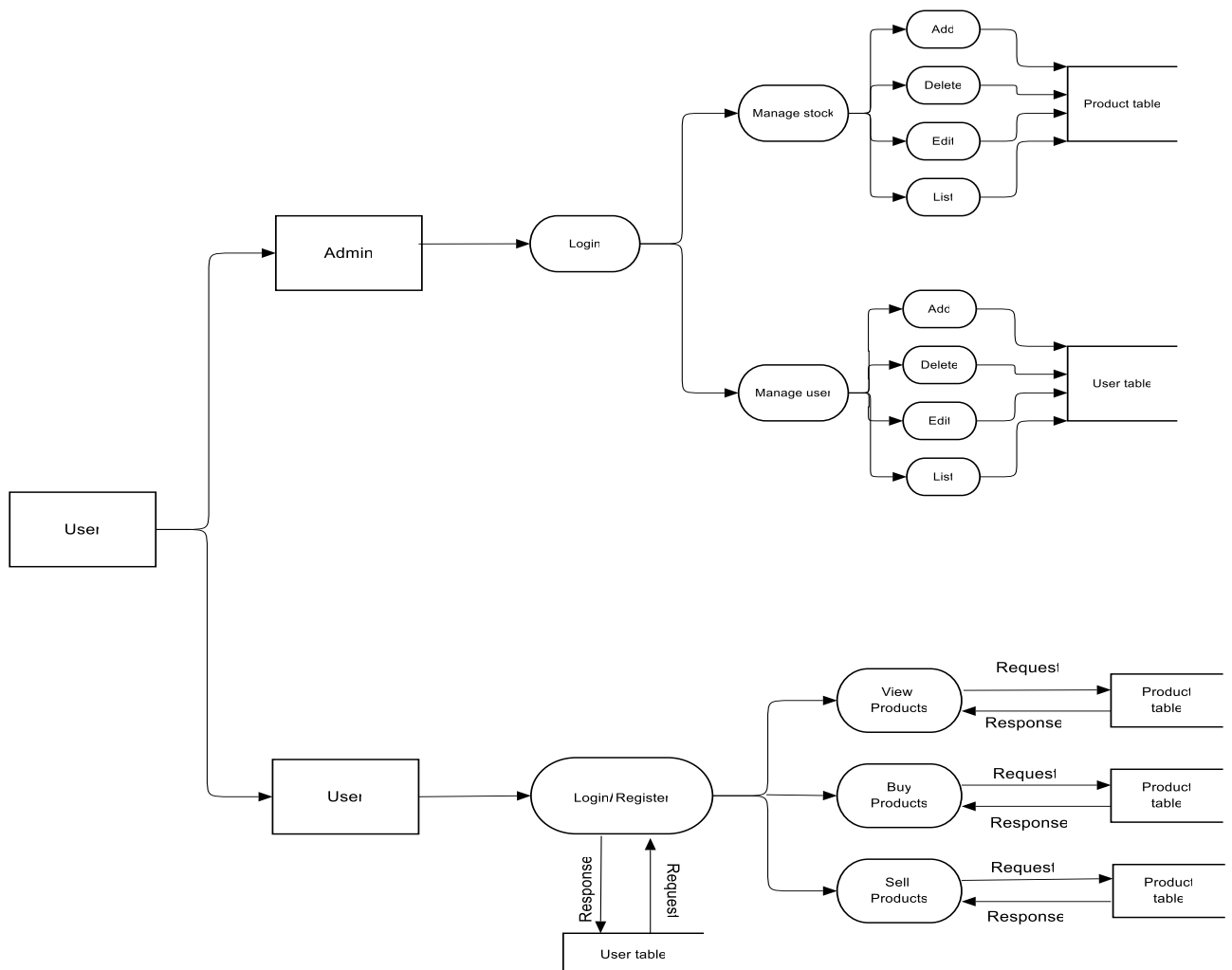
Level 1.1 Admin



Level 1.2 User



Level 2



4.2 UML DIAGRAMS

UML is a standard language for specifying, visualizing, constructing, and documenting the artifacts of software systems. UML stands for Unified Modelling Language. UML has a direct relation with object oriented analysis and design

As UML describes the real-time systems, it is very important to make a conceptual model and then proceed gradually. The building blocks of UML can be defined as –

- Things
- Relationships
- Diagrams

i. Things

Things are the most important building blocks of UML. Things can be –

- Structural
- Behavioral
- Grouping
- Annotational

Structural Things

Structural things define the static part of the model. They represent the physical and conceptual elements. Following are the brief descriptions of the structural things.

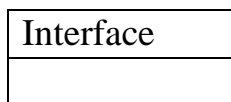
- Class – Class represents a set of objects having similar responsibilities.

Class
Attributes
Operations

Classes in proposed system are,

- Admin
- Sellers
- Buyers

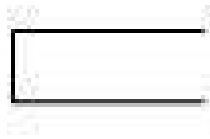
➤ Interface – Interface defines a set of operations, which specify the responsibility of a class.



Interfaces in proposed system are,

- Admin
 - Verify sellers()
 - Payment management()
 - Order details()
 - Edit()
 - Delete()
- Sellers
 - Add product()
 - View product()
 - Edit product()
 - Delete product()
 - Edit profile()
- Buyers
 - View product()
 - Buy products()
 - Payment()

- Collaboration – Collaboration defines an interaction between elemen



Collaborations in proposed system are,

- Admin
 - Verify sellers()
 - Delete users()
- Sellers
 - Add product()
 - Edit product()
 - Edit profile()
- Buyers
 - View product()
 - Payment()

- Use case – Use case represents a set of actions performed by a system for a specific goal.



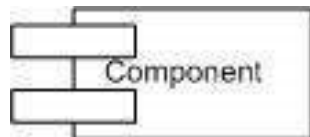
Use cases in proposed system are,

- Admin
 - Verification()
 - Seller details()
 - Delete Seller()

- Sellers
 - Edit profile()
 - Add product()
 - Delete stock()
 - Update stock()

- Buyers
 - View product()
 - Buy Product()
 - Payment()

➤ Component –Component describes the physical part of a system.

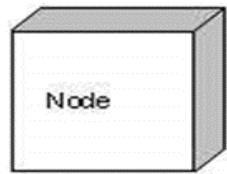


Components in proposed system are,

1. Operating System : Windows 7 or above
2. Front end : JAVA
3. IDE : Net Beans
4. Back End : SQL Server
5. Processor : Intel core i3
6. RAM : 4 GB
7. Files
 - Login.java
 - Admin.java
 - Seller.java
 - Buyer.java
 - Product.java
 - Payment.java

- Order.java
- Stock.java

- Node – A node can be defined as a physical element that exists at run time.



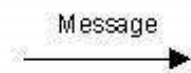
Node in proposed system,

- Payment – Stock

Behavioral Things

A behavioral thing consists of the dynamic parts of UML models.

- Interaction – Interaction is defined as a behavior that consists of a group of messages exchanged among elements to accomplish a specific task.



State machine – State machine is useful when the state of an object in its life cycle is important. It defines the sequence of states an object goes through in response to events.



State machine in proposed system,

- Verification request –verify by admin

Grouping Things

Grouping things can be defined as a mechanism to group elements of a UML model together

- Package – Package is the only one grouping thing available for gathering structural and behavioral things.



Annotational Things

Annotational things can be defined as a mechanism to capture remarks, descriptions, and comments of UML model elements.

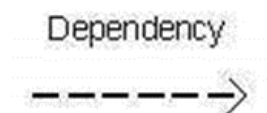
- Note - It is the only one Annotational thing available. A note is used to render comments, constraints, etc. of an UML element.



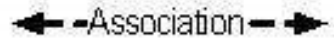
ii. Relationship

Relationship shows how the elements are associated with each other and this association describes the functionality of an application.

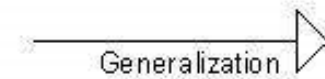
- Dependency - Dependency is a relationship between two things in which change in one element also affects the other.



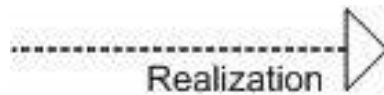
- Association - Association is basically a set of links that connects the elements of a UML model. It also describes how many objects are taking part in that relationship



- Generalization - Generalization can be defined as a relationship which connects a specialized element with a generalized element



- Realization - Realization can be defined as a relationship in which two elements are connected.



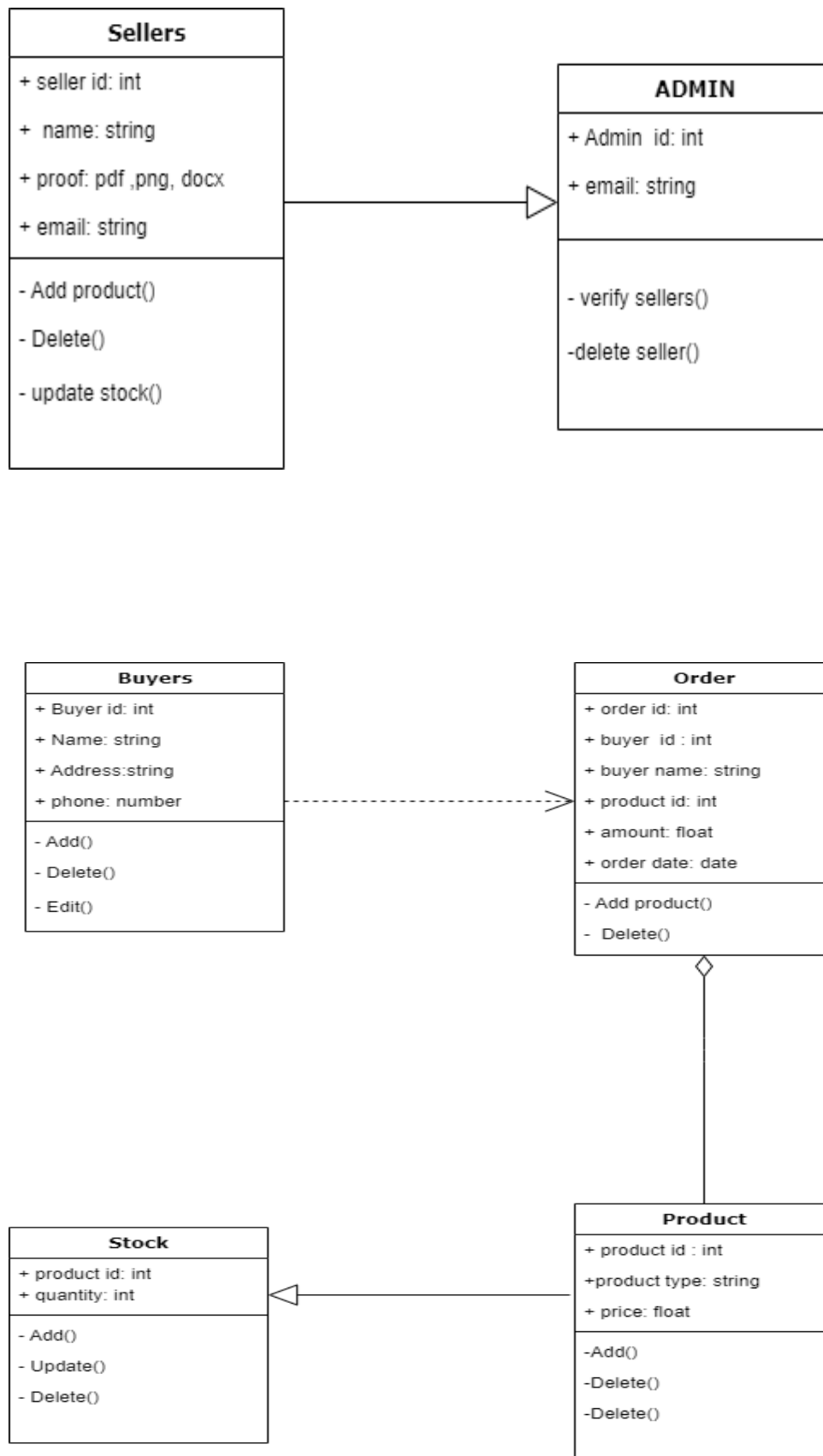
iii. UML Diagrams

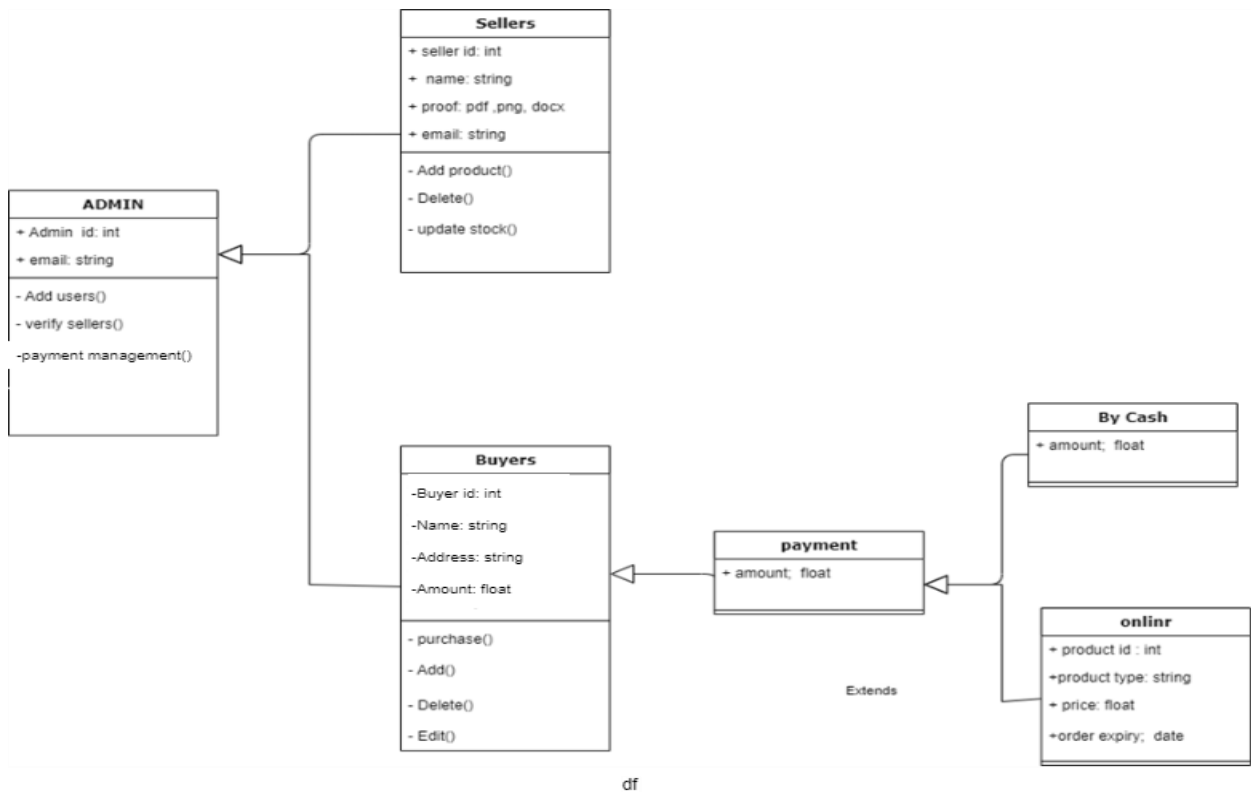
UML diagrams are the ultimate output of the entire discussion. All the elements, relationships are used to make a complete UML diagram and the diagram represents a system.

Structural Diagrams

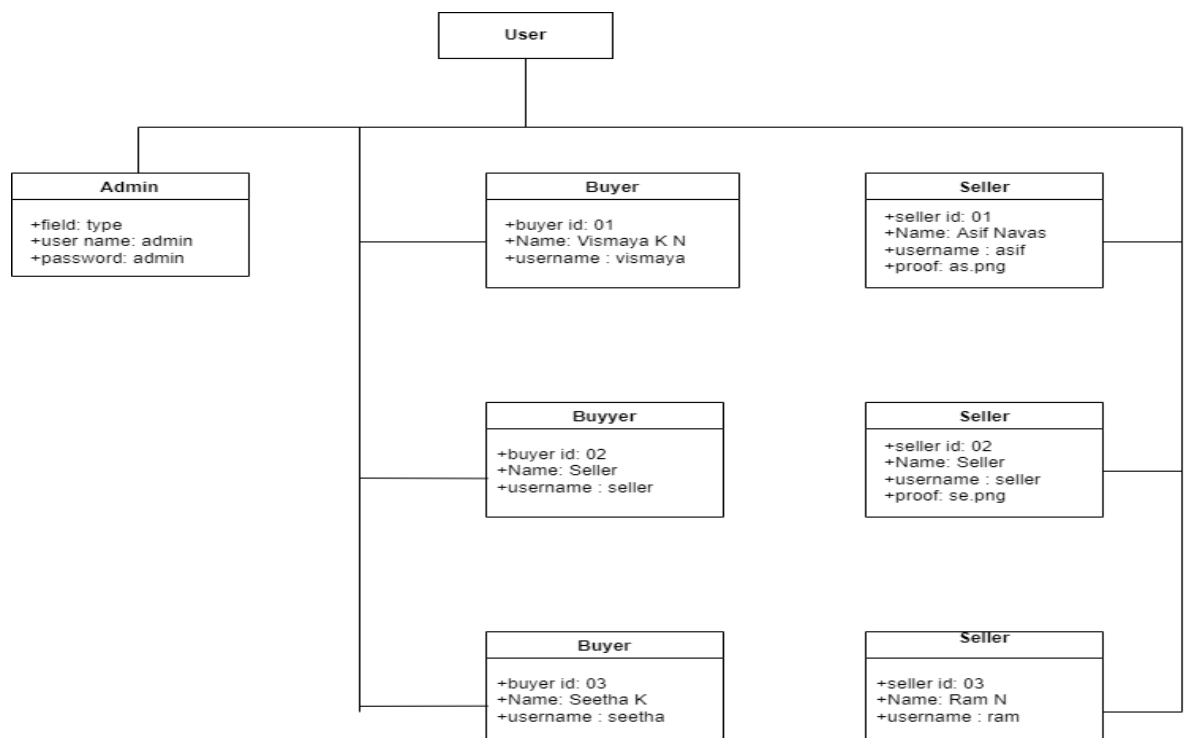
Structural modeling captures the static features of a system

- **Class Diagram** - Class diagram is a static diagram. It represents the static view of an application. Class diagram describes the attributes and operations of a class and also the constraints imposed on the system



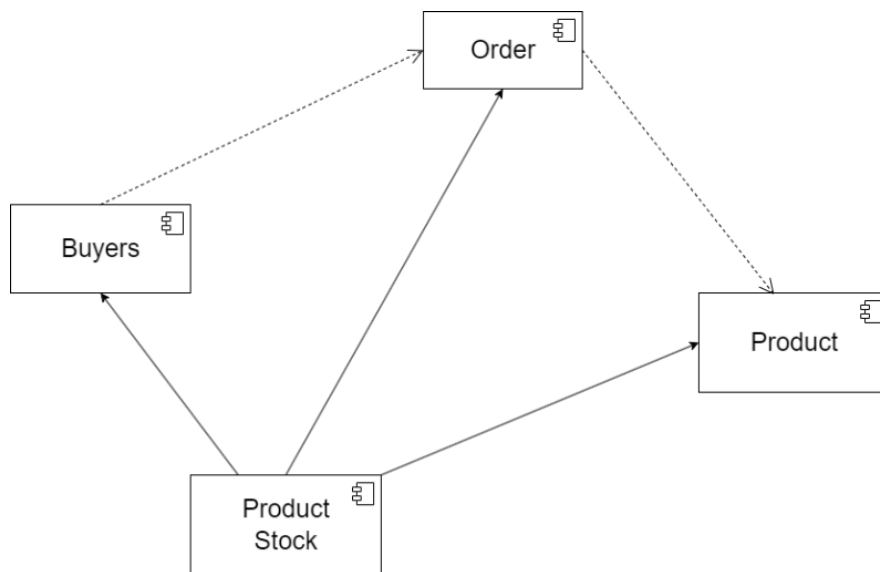


- **Object Diagram** - Object diagrams can be described as an instance of class diagram. Thus, these diagrams are more close to real-life scenarios where we implement a system. Object diagrams are a set of objects and their relationship is just like class diagrams. They also represent the static view of the system.

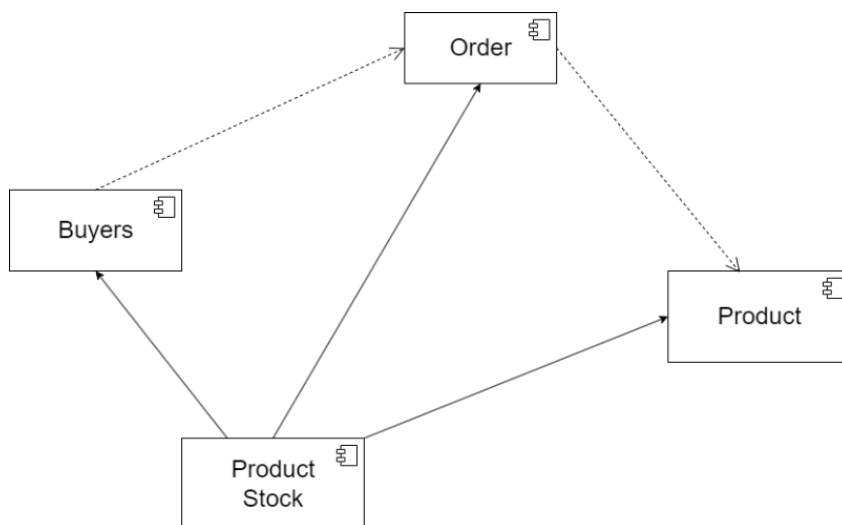


- **Component Diagram** - Component diagrams represent a set of components and their relationships. These components consist of classes, interfaces, or collaborations. Component diagrams represent the implementation view of a system.

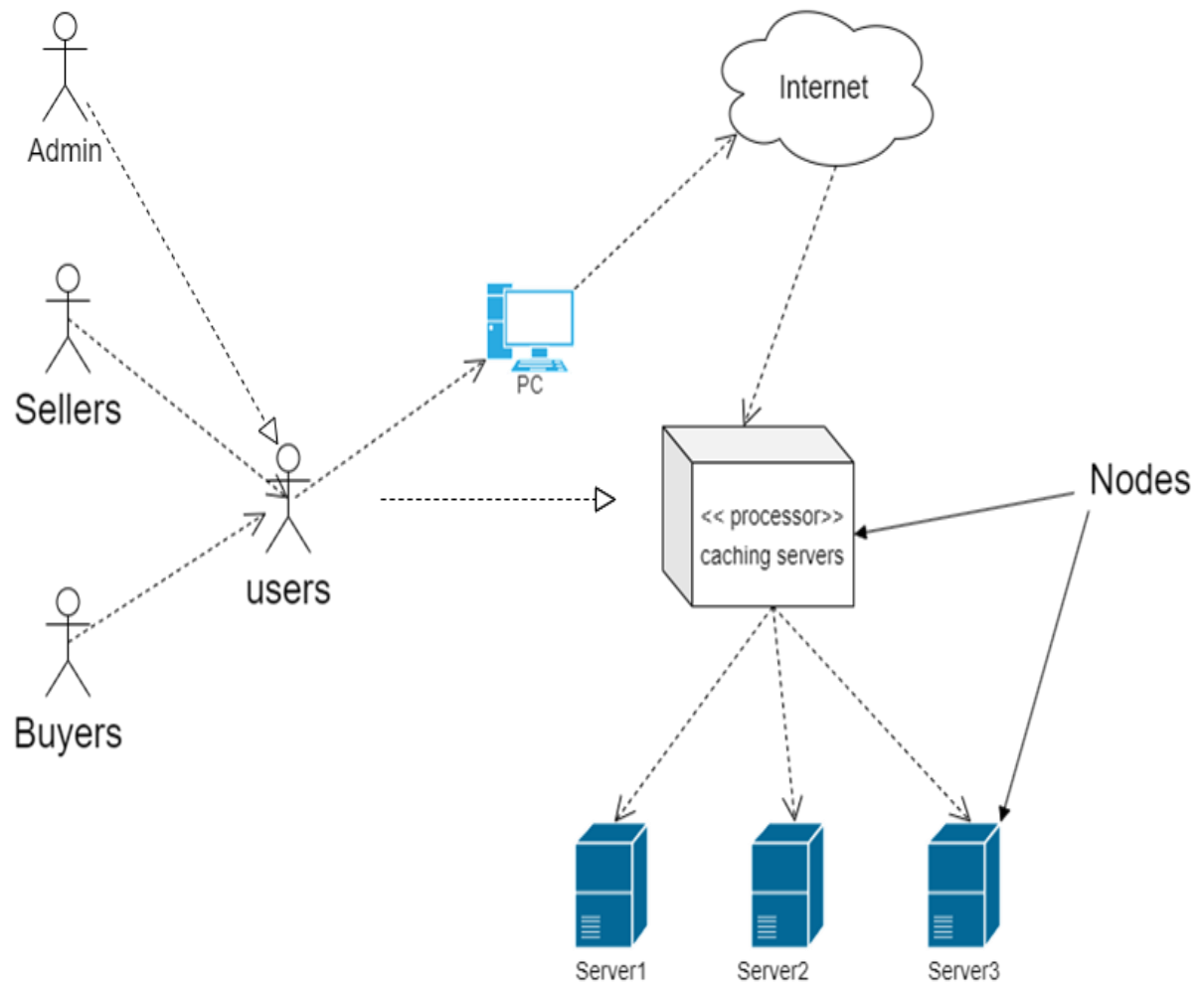
For Registration



For Order



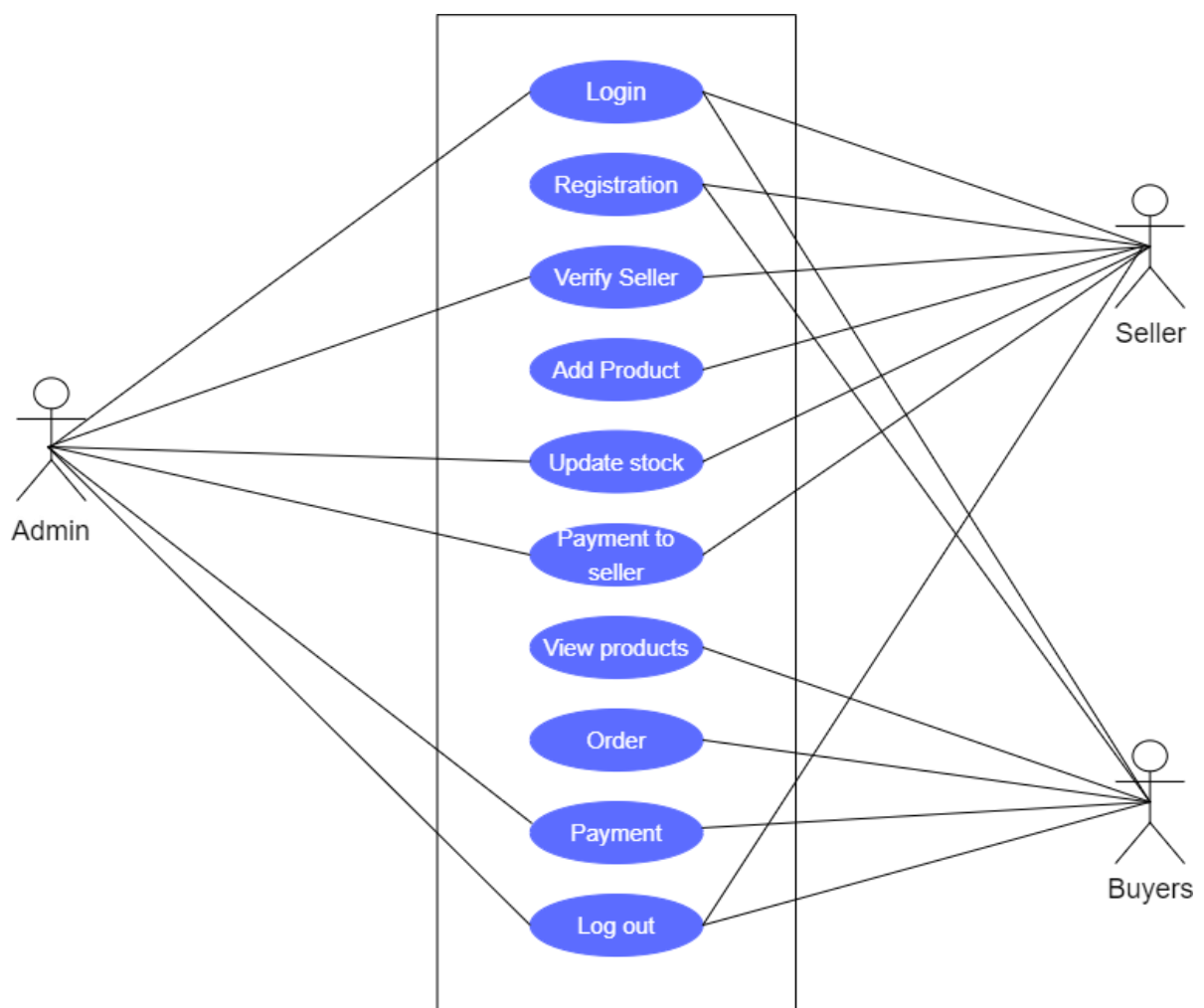
- **Deployment Diagram** - Deployment diagrams are a set of nodes and their relationships. These nodes are physical entities where the components are deployed. Deployment diagrams are used for visualizing the deployment view of a system



Behavioral Diagrams

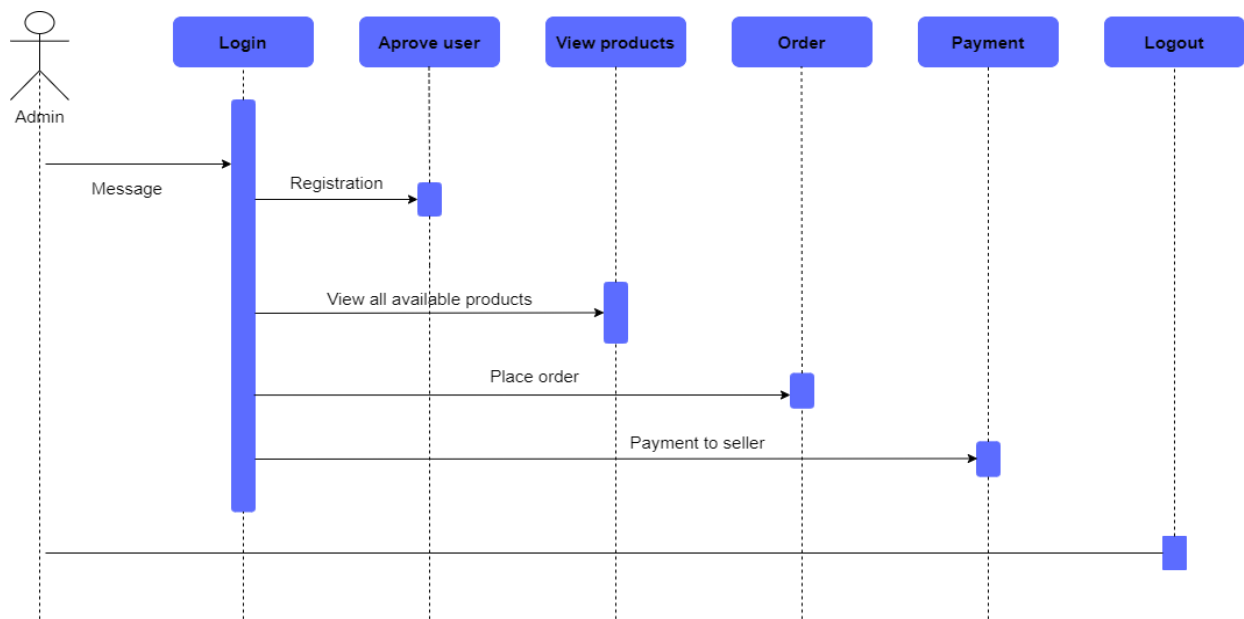
Behavioral diagrams basically capture the dynamic aspect of a system

- **Use case Diagram** - Use case diagram is used to describe the relationships among the functionalities and their internal/external controllers. These controllers are known as actors.

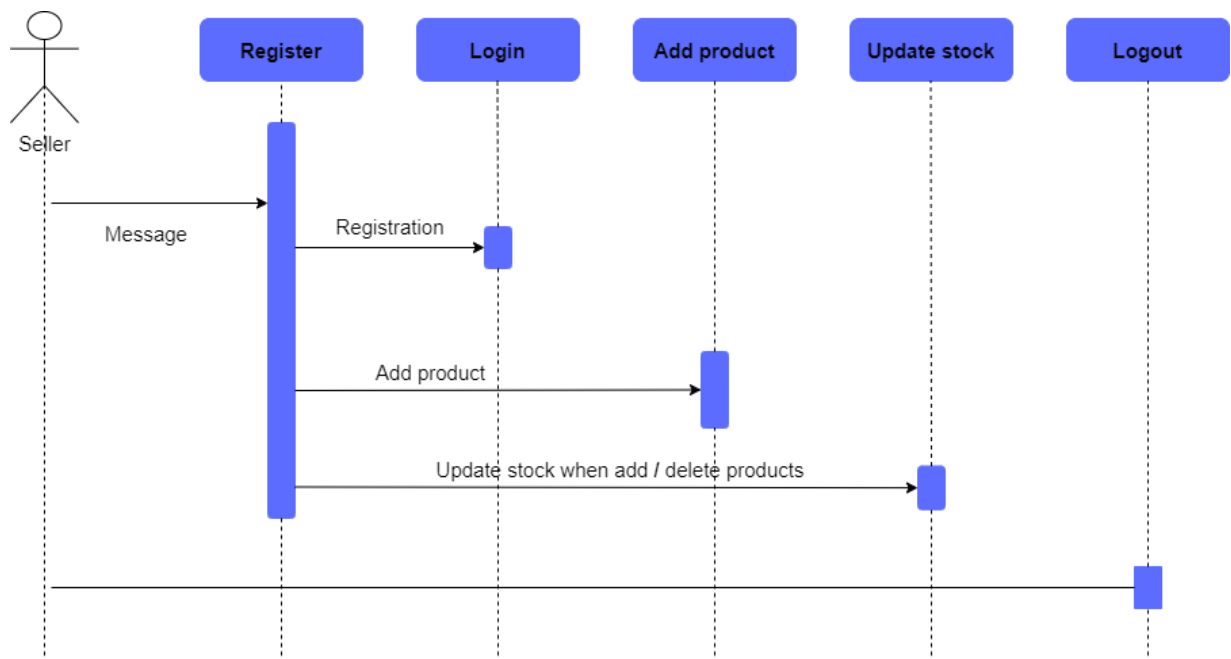


- **Sequence Diagram** - A sequence diagram is an interaction diagram. It is used to visualize the sequence of calls in a system to perform a specific functionality

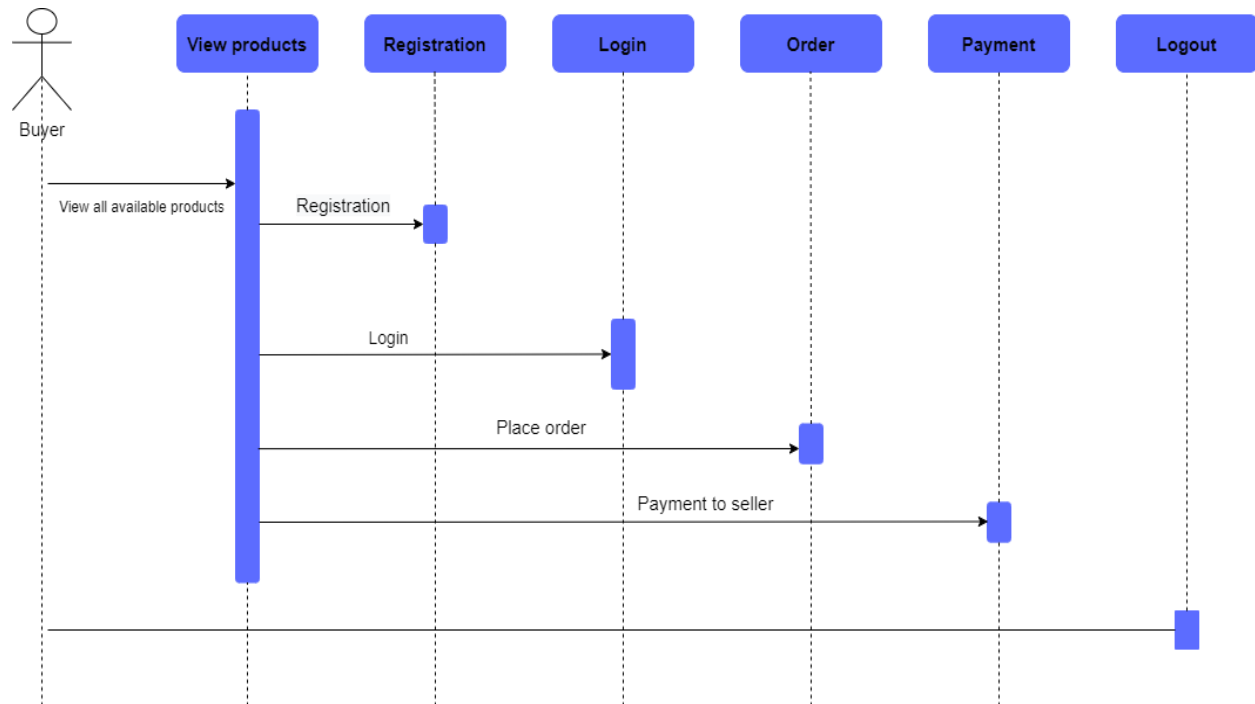
For Admin



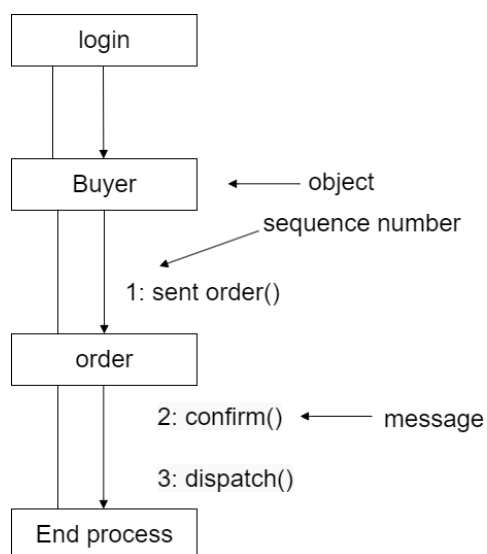
For Sellers



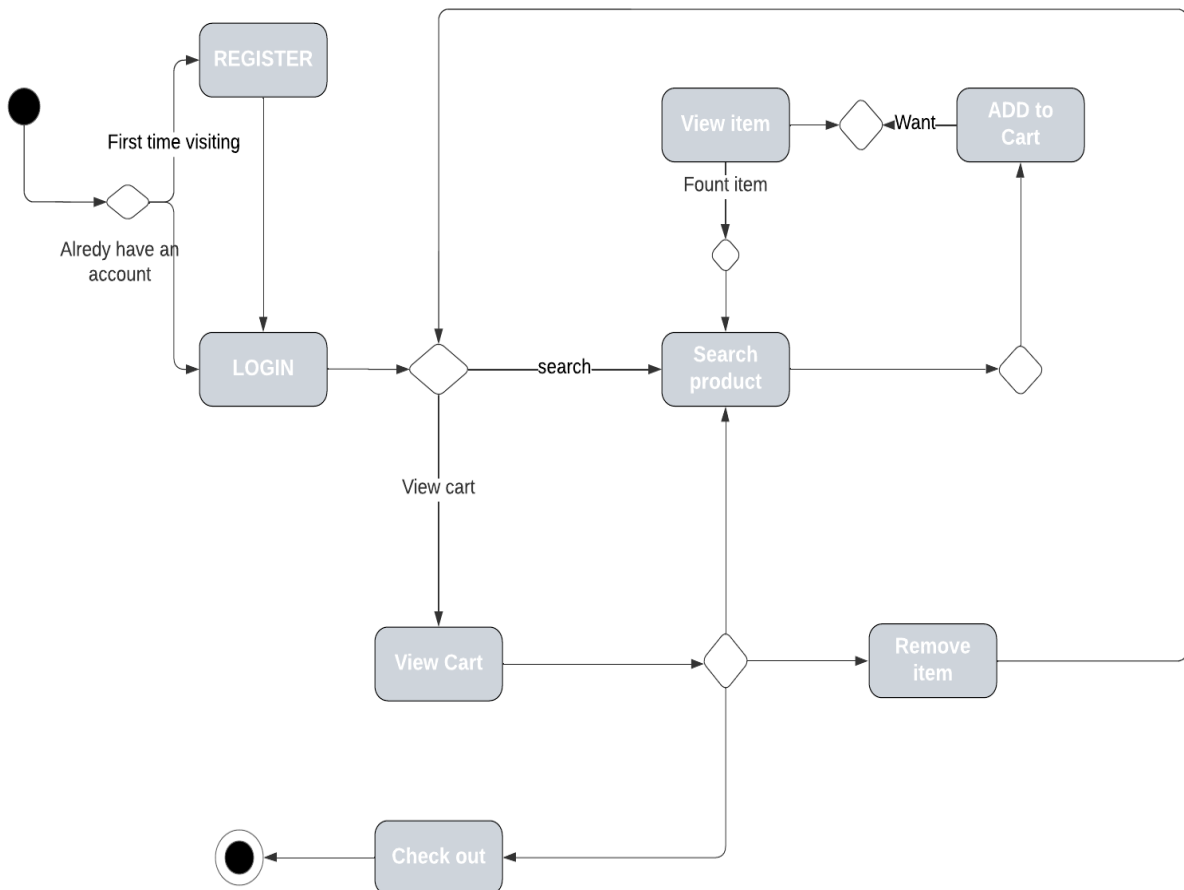
For Buyers



- **Collaboration Diagram** - Collaboration diagram is another form of interaction diagram. It represents the structural organization of a system and the messages sent/received.

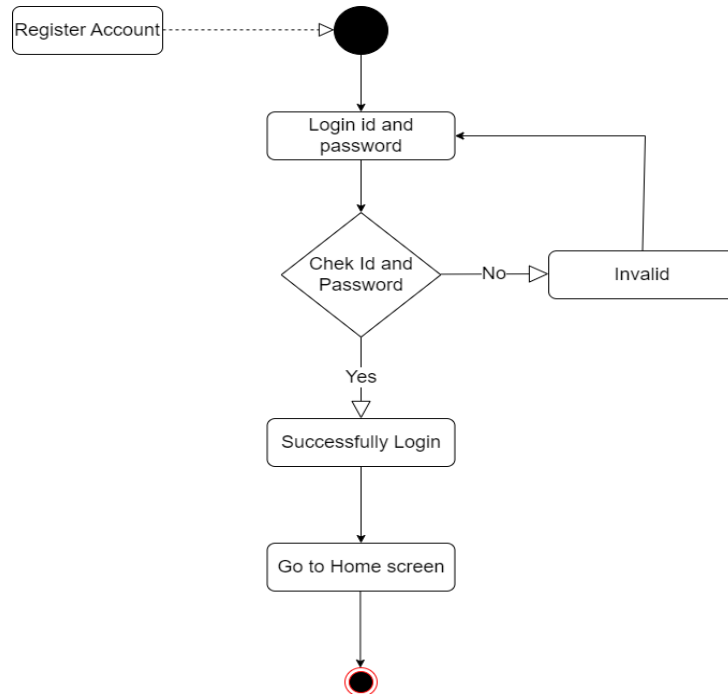


- **Statechart Diagram-** Statechart diagram is used to represent the event driven state change of a system. It basically describes the state change of a class, interface, etc.

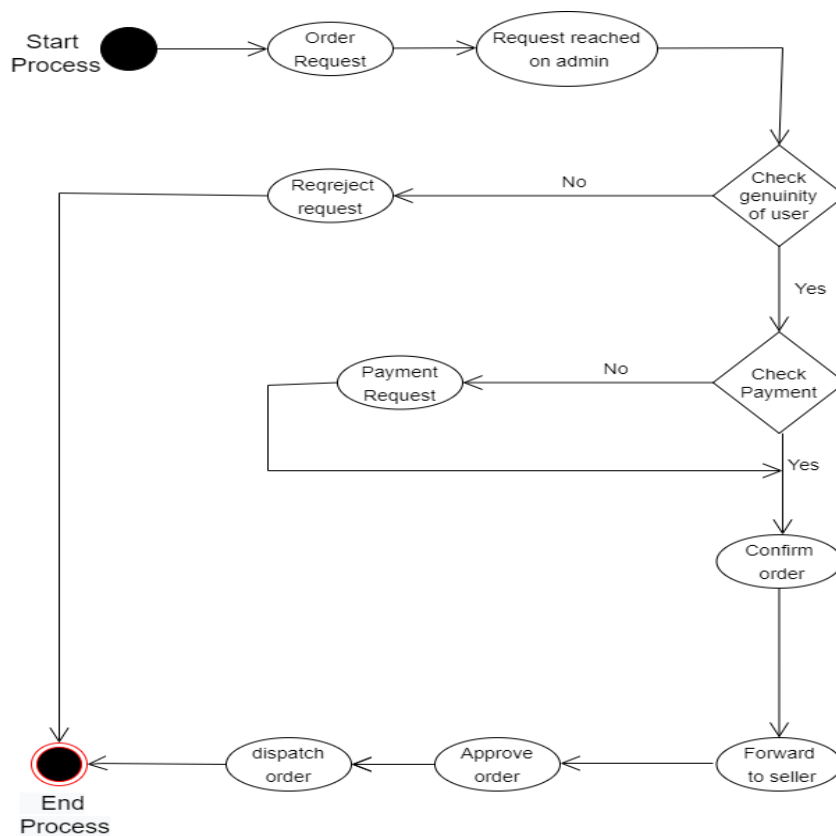


- **Activity Diagram** - Activity diagram describes the flow of control in a system. It consists of activities and links.

Login Activity



Order Activity



CHAPTER 5

TABLE DESIGN

A database is a collection of information that is organized so that it can be easily accessed, managed and updated. Data is organized into rows, columns and tables, and it is indexed to make it easier to find relevant information. Data gets updated, expanded and deleted as new information is added. Databases process workloads to create and update themselves, querying the data they contain and running applications against it.

Database : aquera

Table Name: **Users**

Column Name	Data Type	Constrain	Description
id	int	Primary key,auto increment	User id
email	varchar(35)	Not null	Email id
name	varchar(35)	Not null	Name of the User
address	varchar(35)	Not null	Address of the User
district	varchar(35)	Not null	District of the User
pincode	integer	Not null	Pincode of the User
phone	integer	Not null	Phone Number of the User
id_proof	varchar(35)	Not null	ID_Proof Of the of the User (Seller) for verification.
username	varchar(35)	Not null	Username of the of the User
password	varchar(35)	Not null	Password
has_approved	interger	Not null	To determine the User (Seller) has been approved by the admin or not
role	varchar(35)	Not null	To determine whether the user is a buyer or seller

Table Name: **Products**

Primary Key: id (Product ID)

Column Name	Data Type	Constrain	Description
Id	integer	Primary key,auto increment	Product ID
Product_name	varchar(35)	Not null	Product Name
Product_category	varchar(35)	Not null	Product Categort (Fish Or Aquatic Product)
Product_description	varchar(35)	Not null	Product Discription
quantity	integer	Not null	Product Quantity
price	integer	Not null	Product Price
Product_image	varchar(35)	Not null	Product Image
Created_by	integer	Foregin key,not null	Seller ID

Table Name: **Orders**

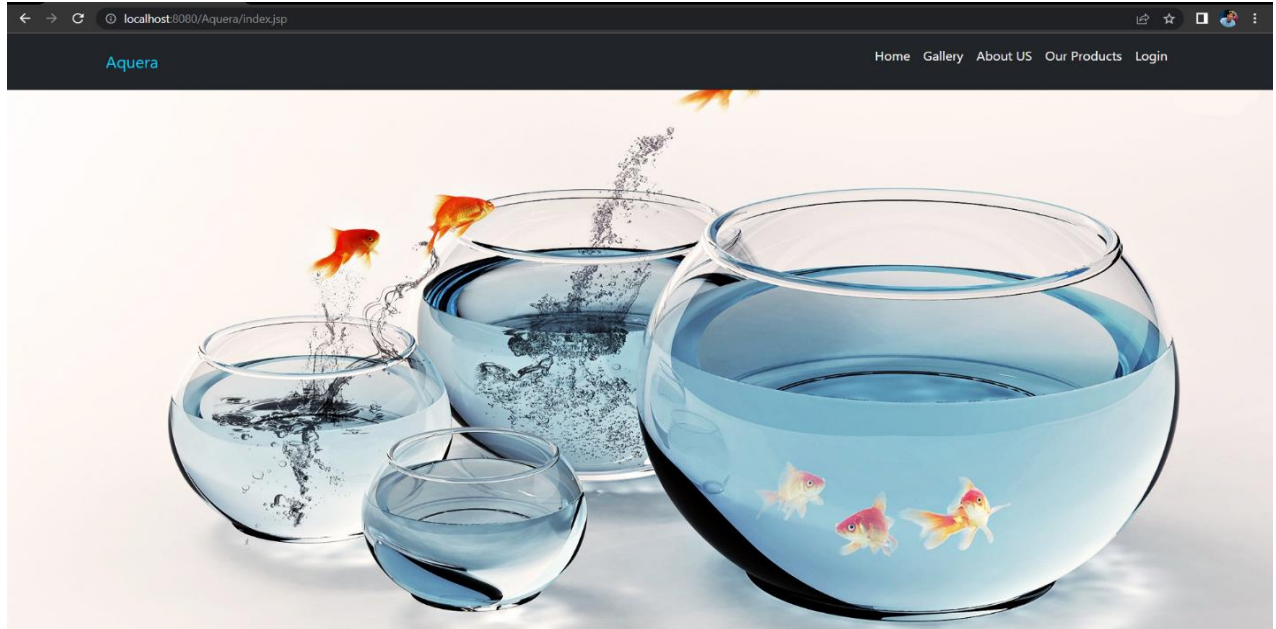
Primary Key: id (order ID)

Column Name	Data Type	Constrain	Description
id	integer	Primary key,auto increment	Order ID
Product_id	integer	Foregin key,not null	Product ID
ordered_date	date	Not null	Date of ordered
quantity	integer	Not null	Quantity Of the Product
Total	integer	Not null	Total Amount of the Product
buyer_id	integer	Foregin key,not null	Buyer ID
delivered	varchar(30)	Not null	Delivered Status
acc_no	integer	Not null	Bank Account Number
ifsc_code	varchar(30)	Not null	IFSC Code
branch_name	varchar(30)	Not null	Branch Name
seller_id	integer	Foregin key,not null	Seller ID

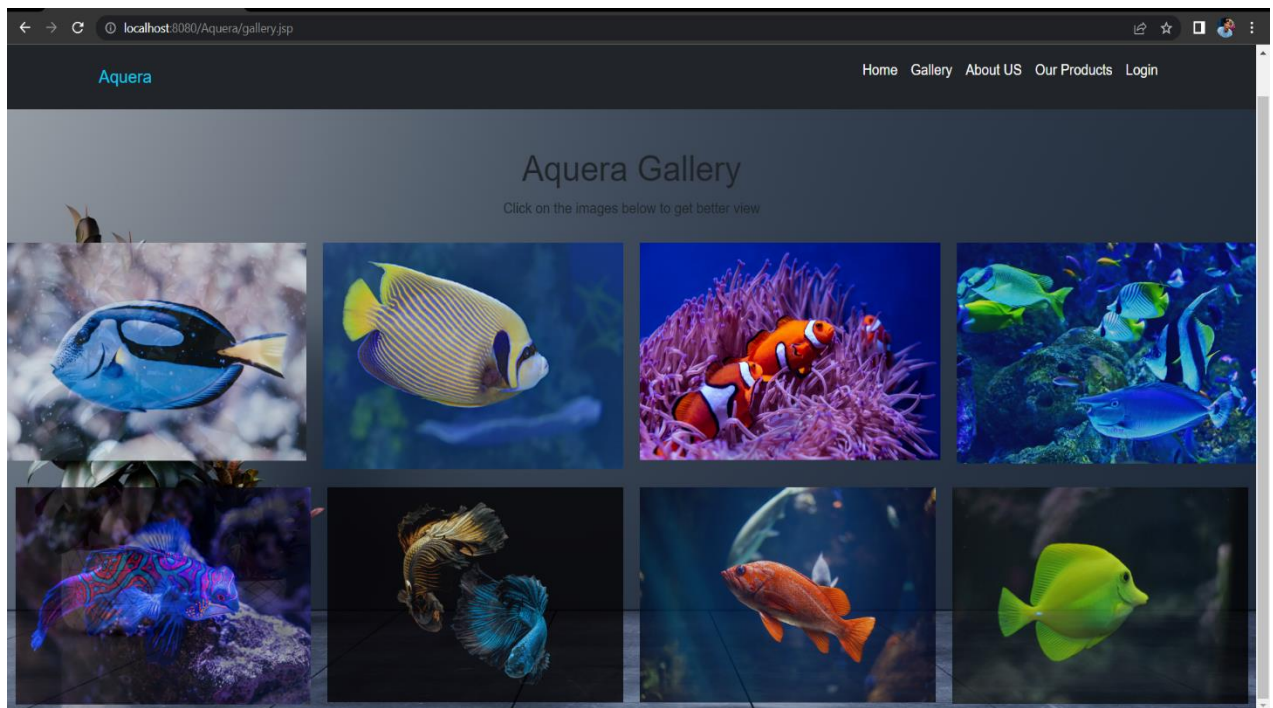
CHAPTER 6

SCREENSHOTS

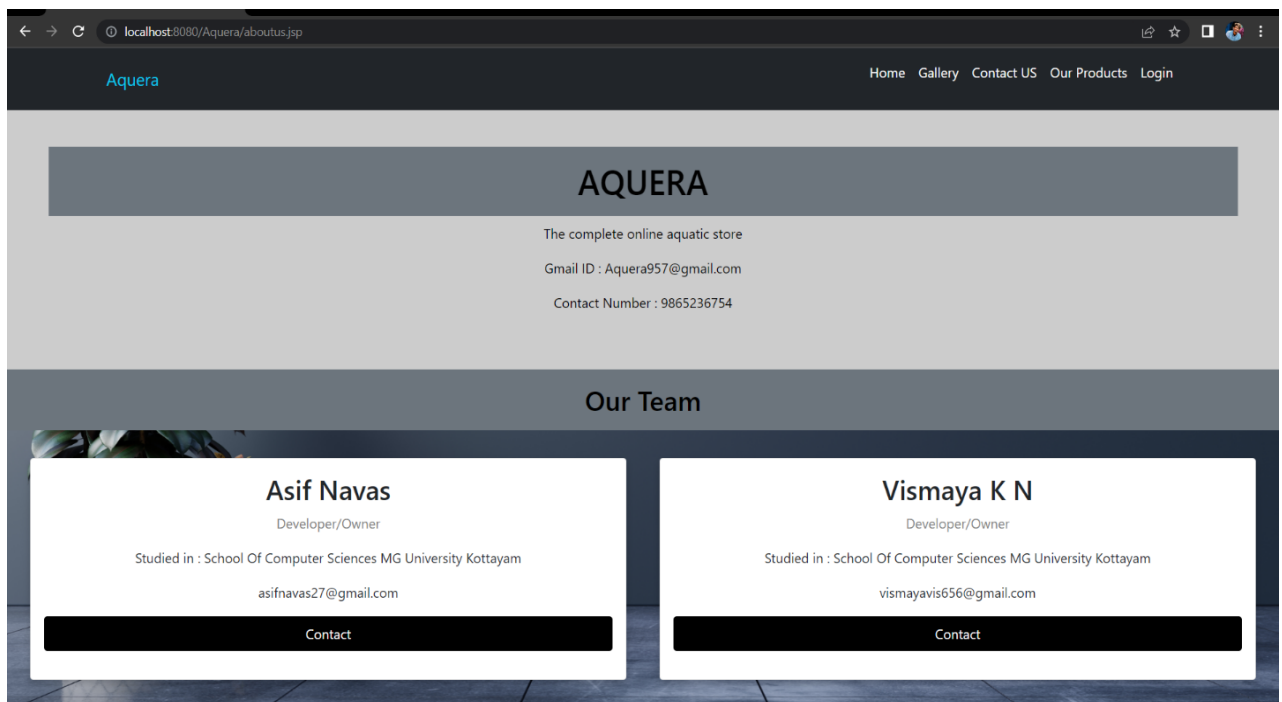
Main Home Page



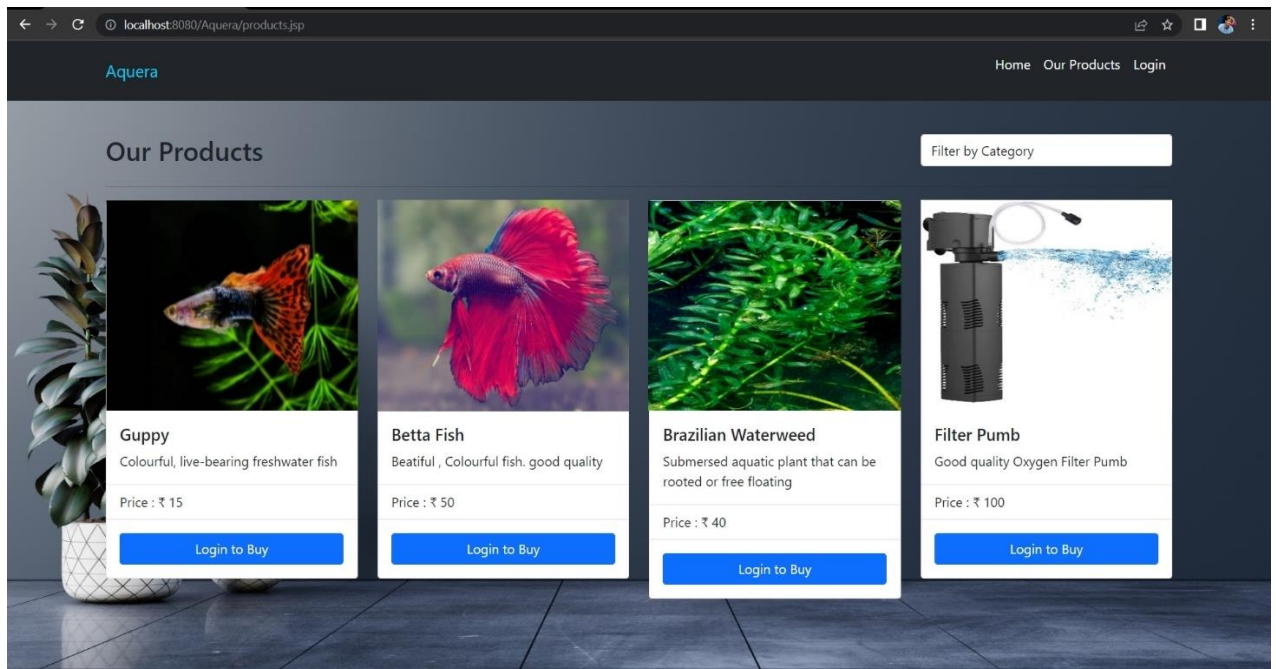
Gallery



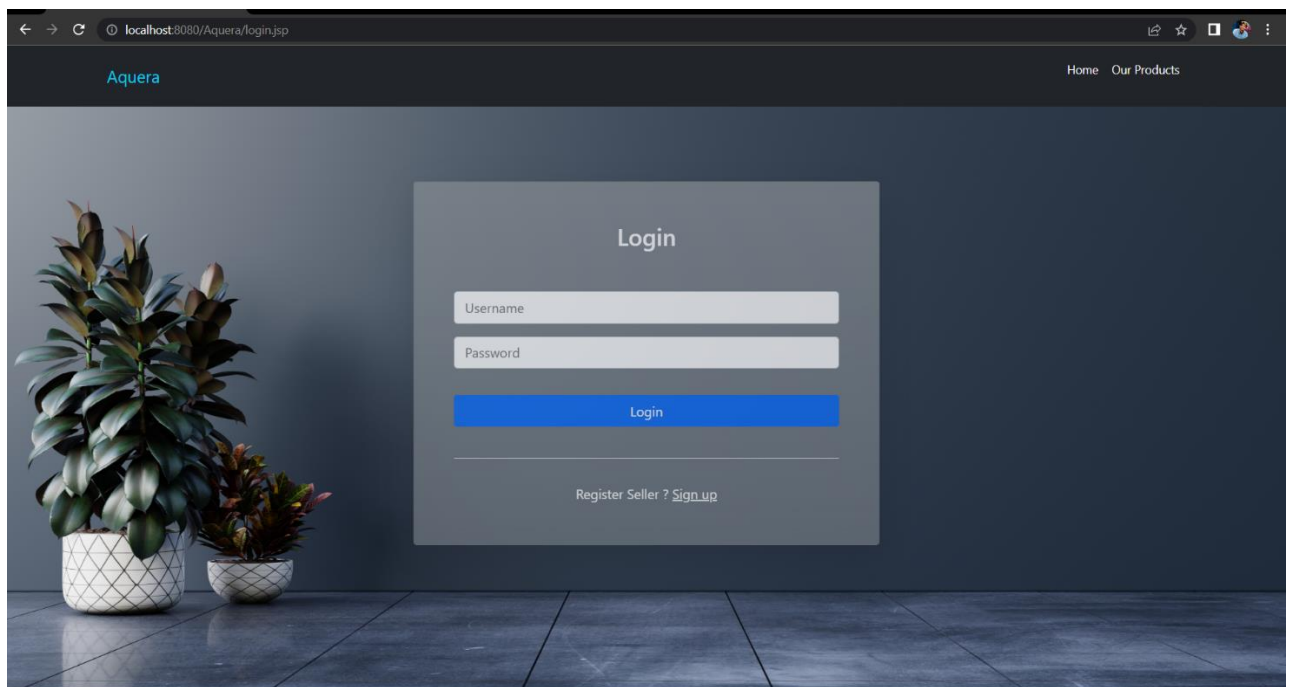
About US



Our Products

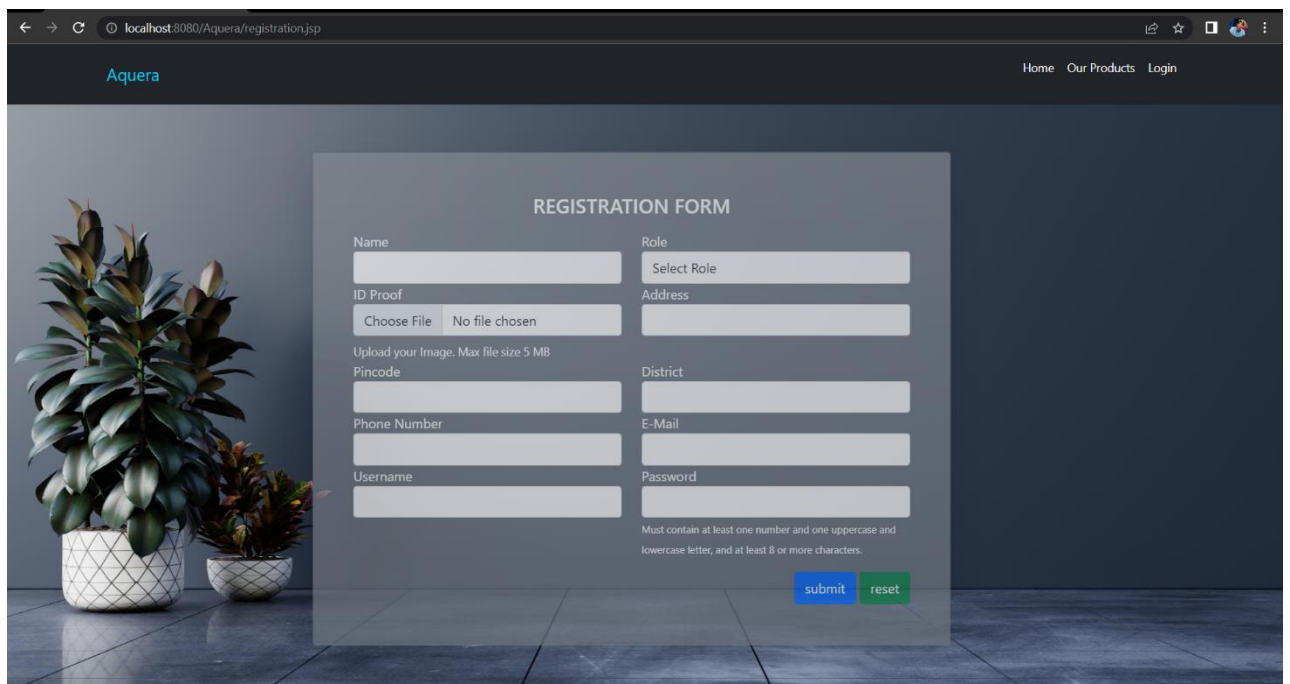


Login Page



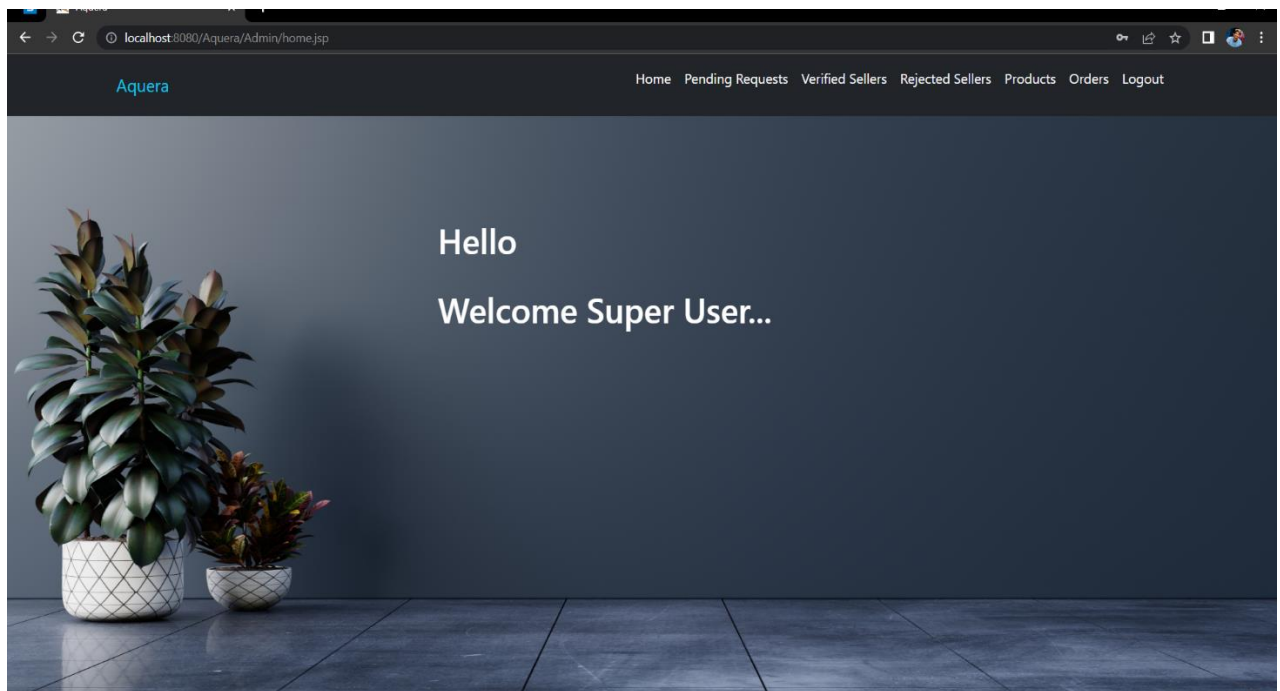
A screenshot of a web browser displaying the login page of a website named 'Aquera'. The browser's address bar shows 'localhost:8080/Aquera/login.jsp'. The page features a dark blue header with the 'Aquera' logo on the left and 'Home' and 'Our Products' links on the right. The main content area has a dark blue background with a large, light gray rectangular login form in the center. To the left of the form is a decorative image of two potted plants. The login form is titled 'Login' and contains two input fields: 'Username' and 'Password'. Below these fields is a blue 'Login' button. At the bottom of the form, there is a link that says 'Register Seller ? Sign up'.

Registration Form

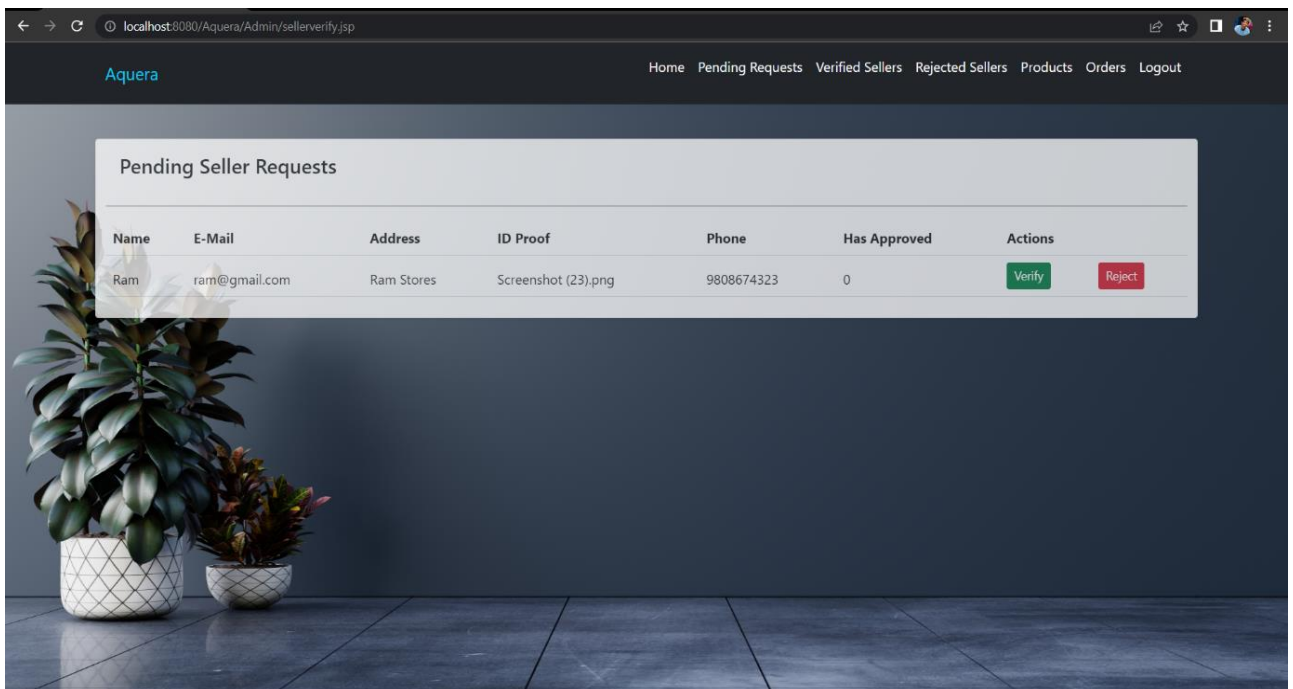


A screenshot of a web browser displaying the registration page of a website named 'Aquera'. The browser's address bar shows 'localhost:8080/Aquera/registration.jsp'. The page features a dark blue header with the 'Aquera' logo on the left and 'Home', 'Our Products', and 'Login' links on the right. The main content area has a dark blue background with a large, light gray rectangular registration form in the center. To the left of the form is a decorative image of two potted plants. The registration form is titled 'REGISTRATION FORM' and contains several input fields: 'Name', 'Role' (with a dropdown menu showing 'Select Role'), 'ID Proof' (with a 'Choose File' button and 'No file chosen' text), 'Address', 'Upload your Image. Max file size 5 MB' (with a 'Pincode' field), 'District', 'Phone Number', 'E-Mail', 'Username', and 'Password'. Below the 'Password' field, there is a note: 'Must contain at least one number and one uppercase and lowercase letter, and at least 8 or more characters.' At the bottom right of the form, there are two buttons: 'submit' (blue) and 'reset' (green).

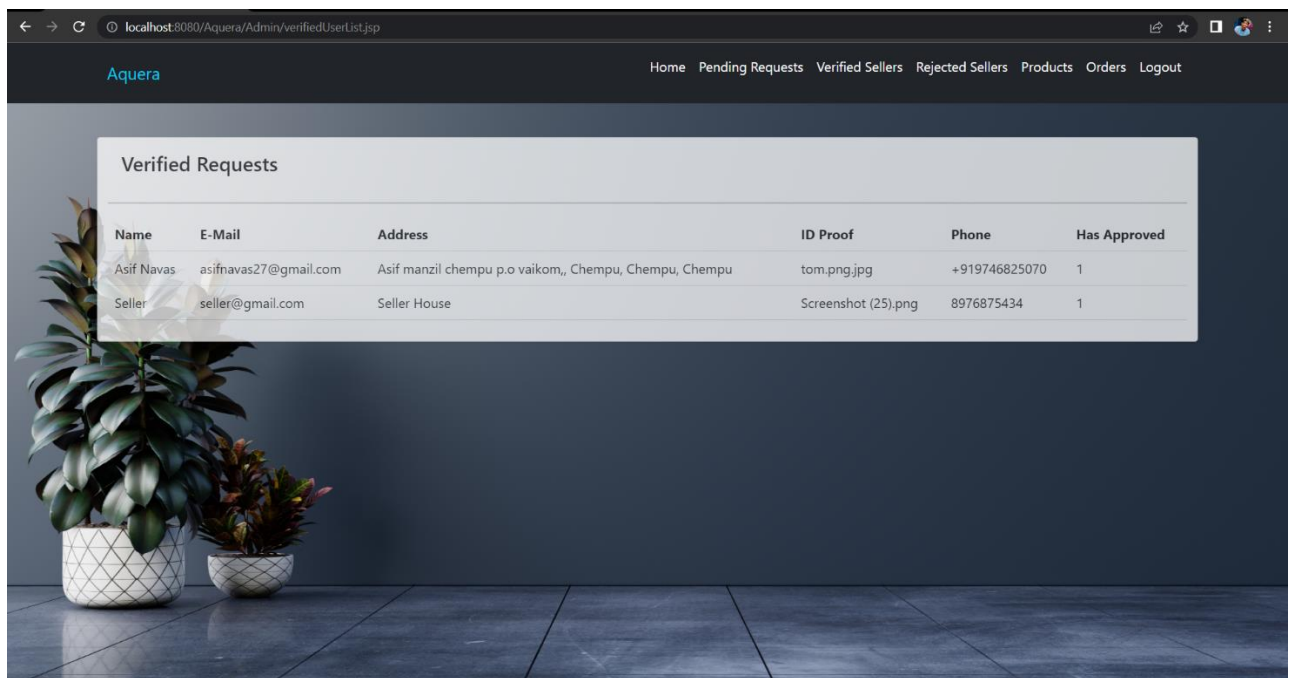
Admin Home



Pending Request (Verification Of The Seller)



Verified Seller (Accepted Seller)



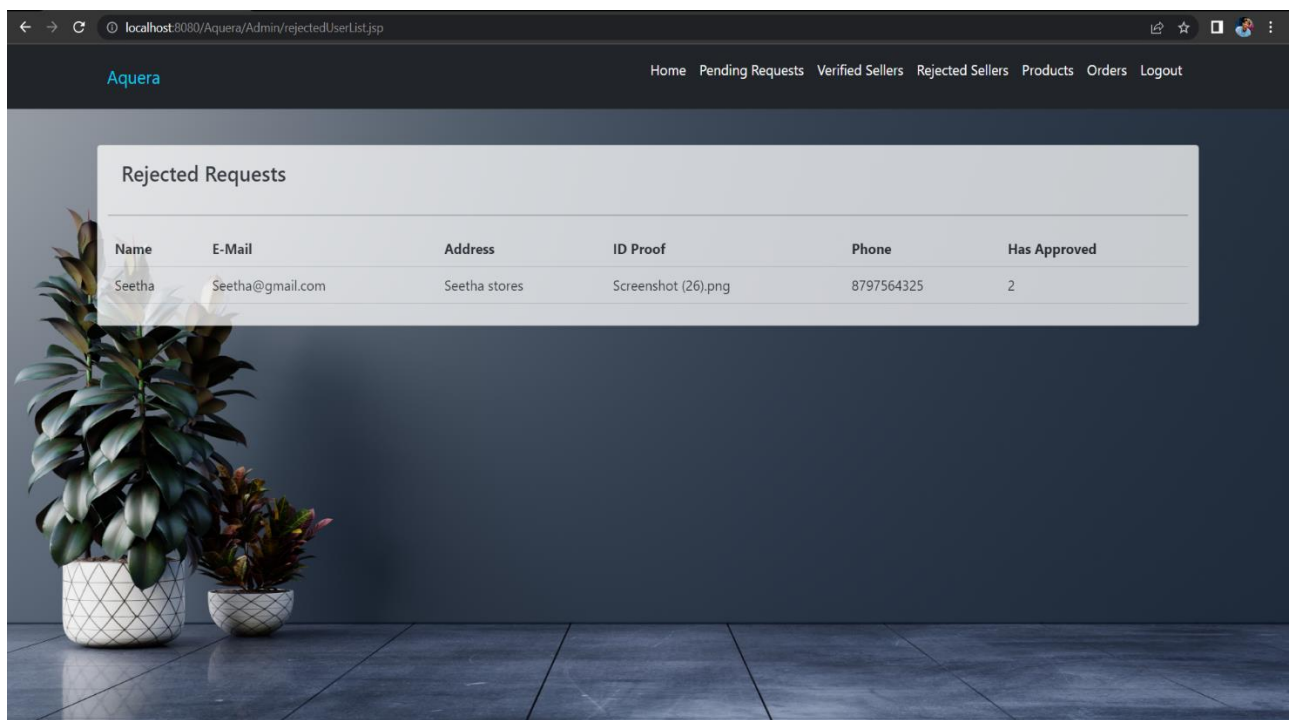
localhost:8080/Aquera/Admin/verifiedUserList.jsp

Aquera Home Pending Requests Verified Sellers Rejected Sellers Products Orders Logout

Verified Requests

Name	E-Mail	Address	ID Proof	Phone	Has Approved
Asif Navas	asifnavas27@gmail.com	Asif manzil chempu p.o vaikom,, Chempu, Chempu, Chempu	tom.png.jpg	+919746825070	1
Seller	seller@gmail.com	Seller House	Screenshot (25).png	8976875434	1

Rejected Seller



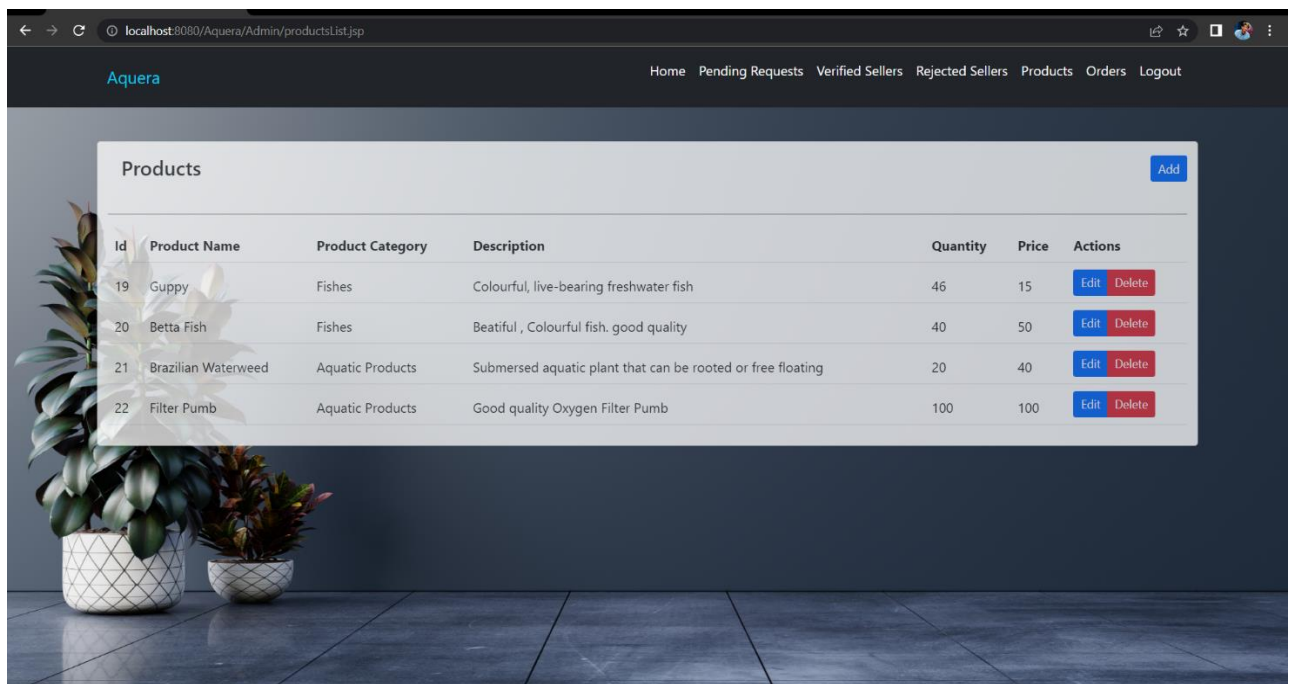
localhost:8080/Aquera/Admin/rejectedUserList.jsp

Aquera Home Pending Requests Verified Sellers Rejected Sellers Products Orders Logout

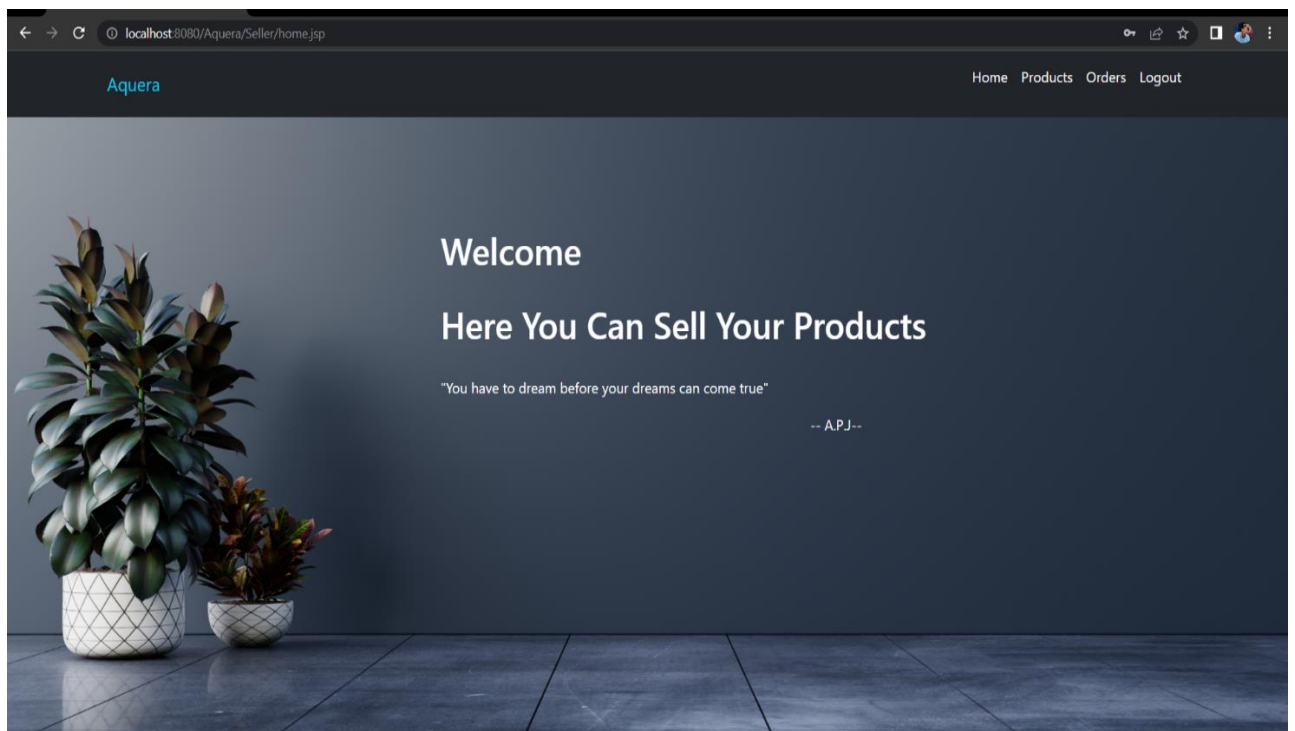
Rejected Requests

Name	E-Mail	Address	ID Proof	Phone	Has Approved
Seetha	Seetha@gmail.com	Seetha stores	Screenshot (26).png	8797564325	2

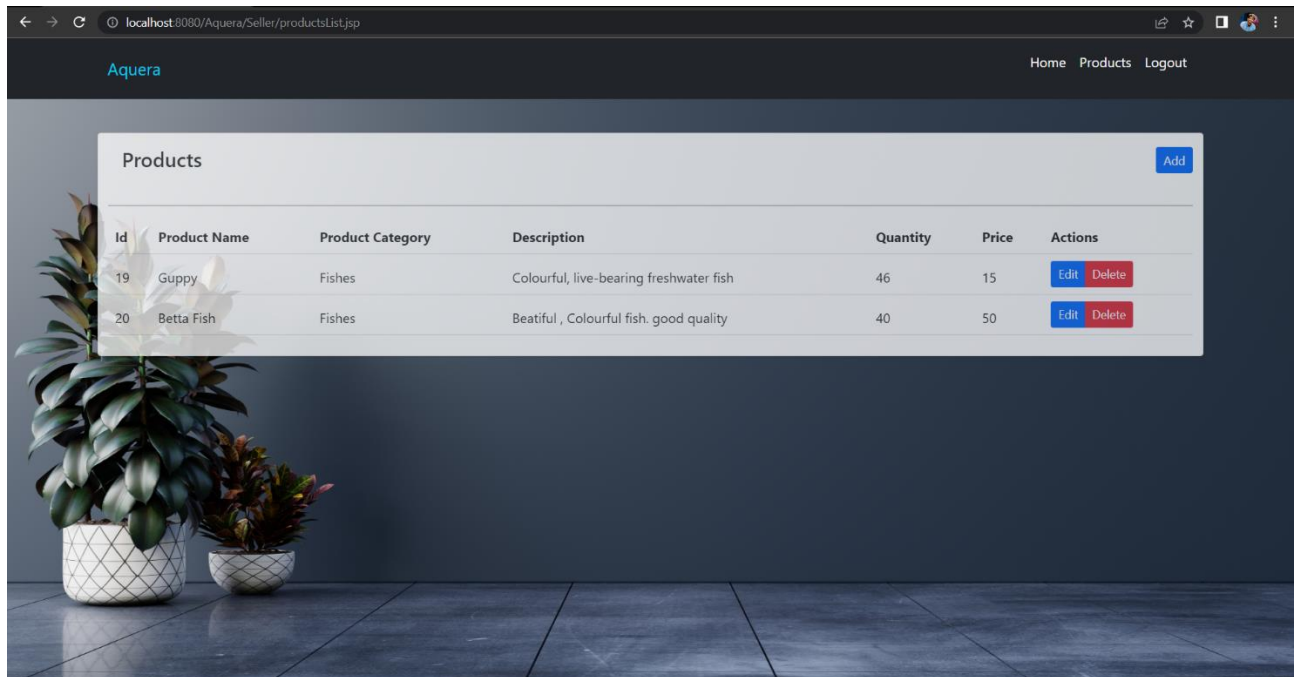
Admin View Products



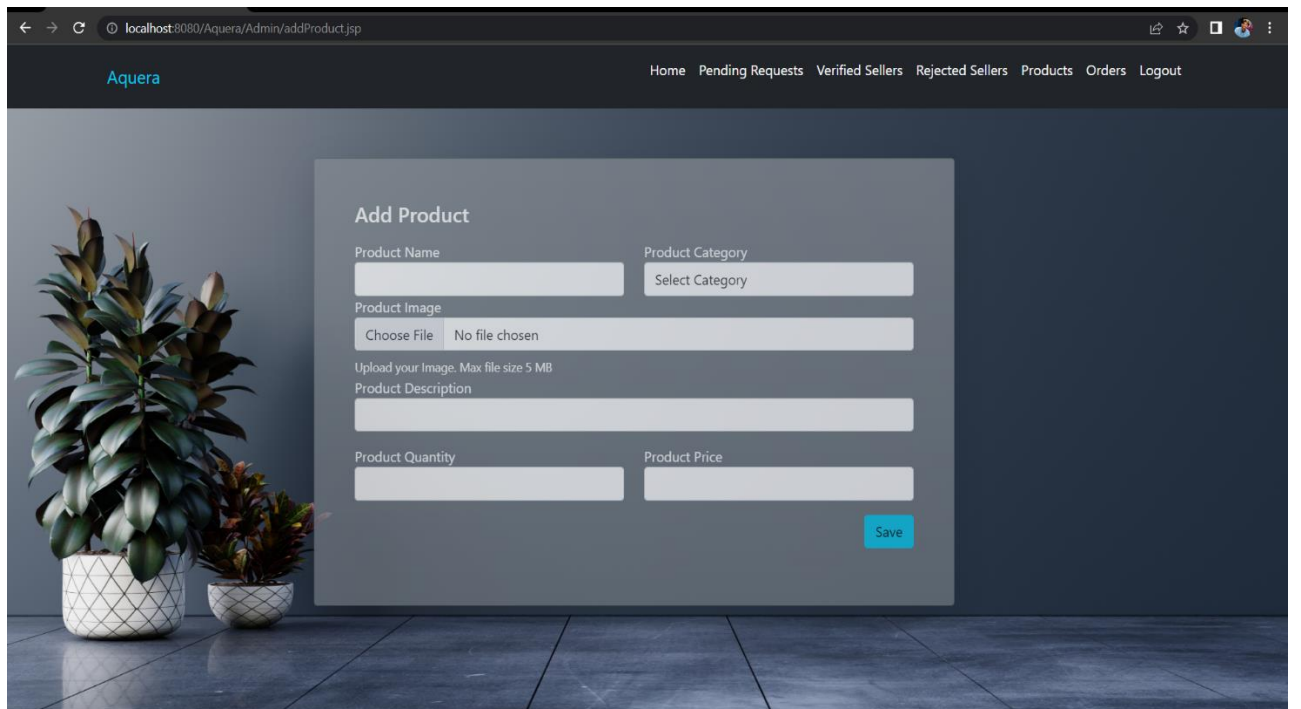
Seller Home Page



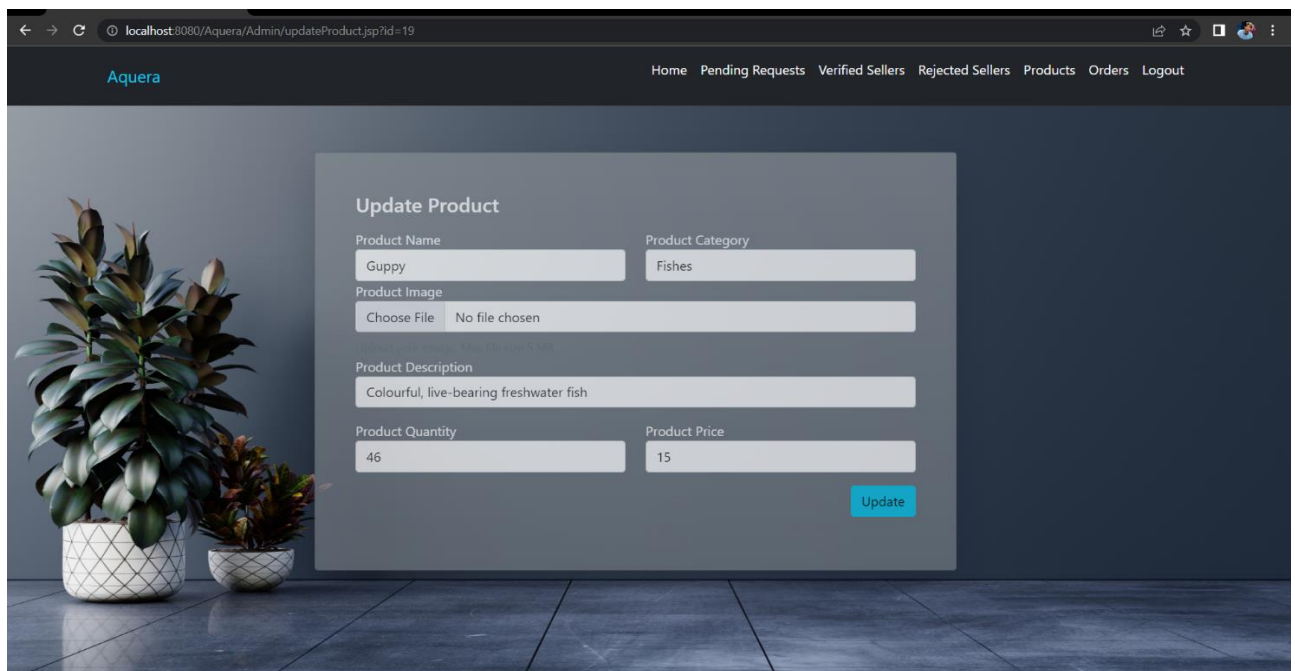
Seller View Their Products



Add Products



Update Products



The screenshot shows a web browser window with the URL `localhost:8080/Aquera/Admin/updateProduct.jsp?id=19`. The page features a dark header with the 'Aquera' logo and navigation links: Home, Pending Requests, Verified Sellers, Rejected Sellers, Products, Orders, and Logout. The main content area has a background image of two potted plants. Overlaid on this is a light gray 'Update Product' form. The form contains the following fields: 'Product Name' (Guppy), 'Product Category' (Fishes), 'Product Image' (Choose File, No file chosen), 'Product Description' (Colourful, live-bearing freshwater fish), 'Product Quantity' (46), and 'Product Price' (15). A blue 'Update' button is located at the bottom right of the form.

Update Product

Product Name:

Product Category:

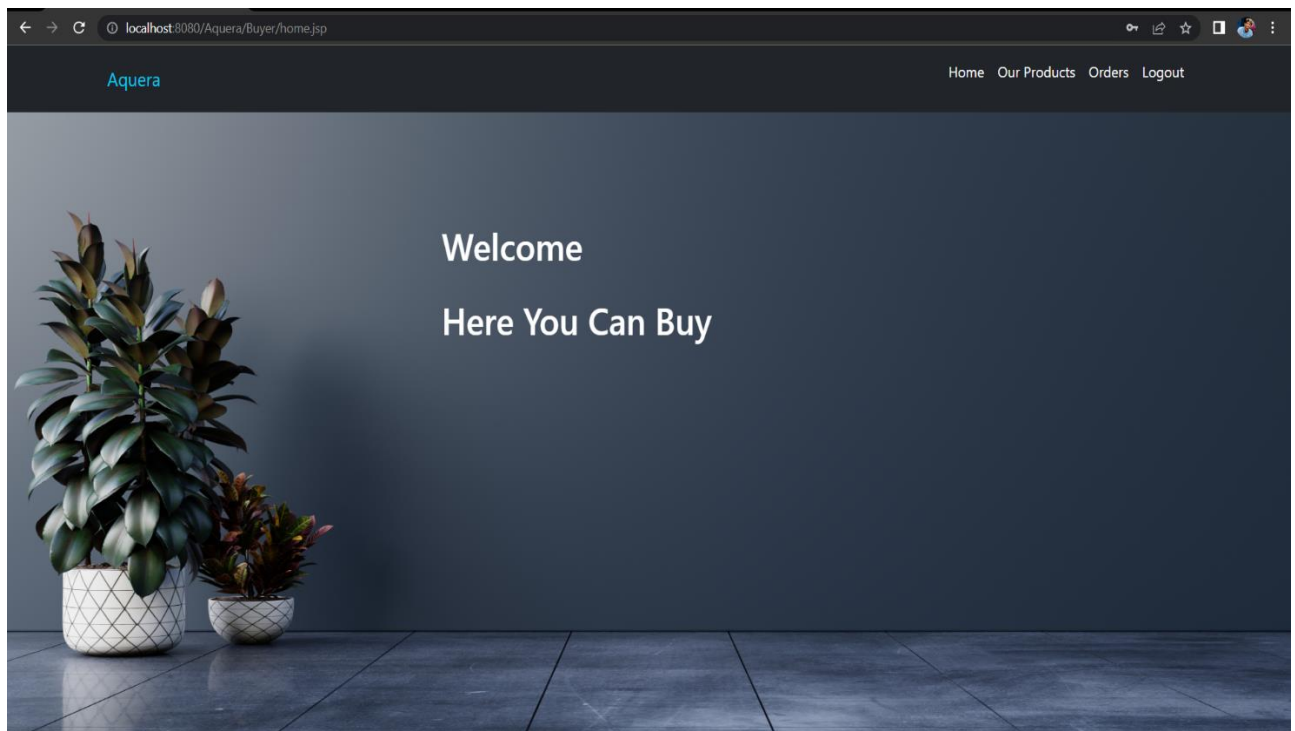
Product Image:

Product Description:

Product Quantity:

Product Price:

Buyer Home Page




Buy Products

localhost:8080/Aquera/Buyer/buyProduct.jsp?id=20&price=50

Aquera Home Pending Requests Verified Sellers Rejected Sellers Products Logout

Buy Product



Product ID
20
Product Name (40)
Betta Fish
Product Price
50
Product Description
Beatiful , Colourful fish. good quality

Quantity

Total

Account Number

IFSC Code

Branch Name

Ordered List

localhost:8080/Aquera/Admin/orderList.jsp

Aquera Home Pending Requests Verified Sellers Rejected Sellers Products Orders Logout

Orders

Id	Product Name	Product Category	Ordered Date	Buyer	Quantity	Total
1	Guppy	Fishes	2022-10-07	Vismaya	4	60

CHAPTER 7

CONCLUSION

The project AQUERA is completed, satisfying the required design specifications. The system provides a user-friendly interface. The software is developed with modular approach. All modules in the system have been tested with valid data and invalid data and everything work successfully. Thus the system has fulfilled all the objectives identified and is able to replace the existing system. The constraints are met and overcome successfully. The system is designed as like it was decided in the design phase.

Utmost care has been taken to design the system covering all possible functional requirements and implement the designed components without any bugs. The system is customizable according to client setup done in other modules.

Utmost care has been taken to design the screens to make the customer's choices easiest. Tables are designed to meet all requirements identified during system study. Besides, all the tables are normalized to reduce redundancy. The system addresses all issues identified during study, design development phases.

CHAPTER 8

FURTHER ENHANCEMENT

The system is developed with a view to easily incorporate the requirements that may arise in future. Actually there is not an effective existing system for buying and selling aquarium fishes and aquatic related products through online. By using AQUERA Anyone can purchase aquarium fishes and all aquatic related products through this website. No need to go for offline stores.

AQUERA allowed only verified sellers to sell there products, So Security is guaranteed. In AQUERA there is all types of Aquarium fishes and Aquatic related products are available with correct and complete description. And provide a user friendly interface. Hence any additional requirements or modifications suggested by the client will be addressed then and thereof.

In future we are planed to add a doctor module. The user can interact with doctor about their fish diseases and clear all their doubts regarding aquarium fishes, their foods, their medicines etc.

REFERENCES

BOOK:

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2. System Analysis and Design-Fifth Edition, by Alan Dennis, January 2012

WEBSITE:

1. <https://app.diagrams.net/>
2. https://www.tutorialspoint.com/system_analysis_and_design/system_analysis_and_design_overview.htm
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