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BridgeLocal

Empowering Jordanian Manufacturers

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Declaration of Originality

This document has been written entirely by the undersigned team members of the project. The source of every quoted text is clearly cited and there is no ambiguity in where the quoted text begins and ends. The source of any illustration, image or table that is not the work of the team members is also clearly cited. We are aware that using non-original text or material or paraphrasing or modifying it without proper citation is a violation of the university's regulations and is subject to legal actions.

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This project holds great personal significance to us, inspiring us to help local producers in Jordan overcome market entry barriers. Witnessing the challenges they face in gaining traction motivated us to take this step.

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Summary

Small-scale local producers in Jordan are unable to compete in the market and achieve recognition because larger manufacturers frequently overrun them. This indicates that there is an urgent need for a system that can successfully link these regional producers with retailers guaranteeing an environment that is fair and competitive and showcases high quality regional goods.

By enabling local manufacturers in Jordan the Bridge Local online application aims at bridging this gap. It seeks to give businesses a strong platform on which to present their goods, interact with merchants directly and thereby increase their market share.

Through standardizing the sales process of products to retailers this platform hopes to endorse local businesses while providing retailers with a wide selection of goods. By using a user-oriented design approach the project facilitates an intuitive process for retailers as well as manufacturers. Our methodology which included carrying out holistic market research tailored to the domestic context, was followed by creating a prototype that is safe, scalable and easy to use.

This includes implementing features like data analytics, user-specific dashboards, a process for validating products and payment methods. The project's strategy focuses on addressing issues with user adoption, data security and the advancement of sustainable business practices.

These issues will be dealt with through demo training, intuitive User Interface design, encryption, regular audits and compliance with industry standards.

In Conclusion BridgeLocal is a cutting-edge solution designed specifically for the Jordanian market. It has the potential to greatly increase the visibility of local manufacturers in which it simplifies the procurement process for retailers and cultivate an interconnected business community. In addition, BridgeLocal aims at supporting local businesses in Jordan by addressing essential market demands and creating a sustainable local economy.

List of Abbreviations

List the abbreviations you have used in your project if there are any and what they stand for.

UML: Unified Modeling Language.

JSP: Java Server Pages.

DLL: Dynamic Link Library.

CMS: Content Management System.

ERD: Entity Relationship Diagram.

OO: Object Oriented

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Chapter 1

Introduction

1.1 Overview

BridgeLocal is a platform created to endorse the Jordanian economy by increasing local manufacturers' visibility and access to markets. The goal of BridgeLocal is to shorten the gap between small-medium scale producers and retailers by providing a simple, safe and effective platform for local product discovery and sales. An analytics driven interface for retailers to track purchase history and product profitability in which there is a comprehensive dashboard for manufacturers to monitor product performance, receive feedback and advanced features like product validation and secure payment processing are the main use cases of BridgeLocal.

1.2 Problem Statement

The main aim of BridgeLocal is to resolve is the considerable barrier that Jordanian local manufacturers experience when trying to enter the market and gain traction. Small scale producers frequently face difficulties competing with larger enterprises because they have restricted access to retail networks and have trouble reaching potential customers. Furthermore, the current markets and platforms are unable to fully address the particular requirements of local Jordanian producers, creating a void in the market where premium and locally produced goods are marginalized and underrepresented. This situation not only limits local businesses' potential for growth but also denies customers and retailers access to a wide variety of high quality locally produced goods.

Bridge Local's primary goal is to develop a web application that functions as a marketplace and a tool for business-to-business networking, improving product visibility, guaranteeing product authenticity, and expediting the purchase process. In addition to improving the financial prospects of local producers this approach aims to strengthen and expand the local economy by providing a wide range of superior and local products to the retail sector.

1.3 Related Work

However, some applications offer similar services and features that could potentially be present in our system:

1. Faire:

Faire is a marketplace connecting retailers with independent brands. Available in countries like the United States, Canada and the United Kingdom. Suitable for retailers looking for a filtered selection of products from established independent brands. It offers a wide variety of products like Home Decor, food / beverage, Clothing and more. Benefits for retailers are flexible payment terms, free returns on opening orders, curated product recommendations and a user-friendly platform. Some distinctive characteristics include:

- Delicate Selection: Faire validate brands, ensuring a high quality selection for retailers.
- Wholesale purchase: Retailers can purchase products in bulk at wholesale prices.
- Flexible Payment: Offers flexible payment options for retailers.
- Free Returns on Opening Orders: Reduces risk for retailers trying new products.

2. Jungleworks Yelo:

Jungleworks Yelo is a web-based platform designed for local businesses to establish an online presence. Located in the USA Yelo equips local businesses with the tools they need to create an online store, manage inventory and engage customers. Features include digital storefront creation, inventory management tools, and customer engagement tools (may vary depending on the plan).

Yelo offers a free trial along with paid plans. Among Jungleworks Yelo's key characteristics are:

- Local Business Focus: Tailored specifically for the needs of local businesses.
- Easy Online Store Creation: platform allows businesses to set up an online store.
- Integrated Gadgets: tools for managing inventory and engaging customers.
- Free Trial: Allows businesses to try the platform before committing to a paid plan

3. RangeMe (rangeme.com)

RangeMe is a web-based marketplace located in the USA connecting brands with retailers and distributors across various categories. A valuable tool for both brands and retailers. Brands can showcase their products and connect with potential buyers, while retailers can discover new and innovative products from a wide range of brands. RangeMe offers a freemium model with a free basic plan and paid options for additional features. Among the numerous distinctive elements of this application are:

- Broad Reach: Ideal for brands seeking to expand their reach and retailers looking for a diverse selection of products.
- Freemium Model: Caters to different needs with a free plan and paid options.
- Brand-Retailer Connection: Facilitates communication and product discovery between brands and retailers.
- Focus on Discovery: Helps brands get discovered by potential buyers and allows retailers to find unique products.

Table 1.1 Applications Comparison

<i>Features</i>	<i>BridgeLocal</i>	<i>Faire</i>	<i>Jungleworks</i>	<i>RangeMe</i> <i>(Yelo)</i>
<i>Jordan Based</i>	Yes	No	No	No
<i>Target Audience</i>	Local Manufacturers and Retailers	Retailers	Brands & Retailers	Local Business
<i>Focus</i>	Local Business Networking & Support	Wholesale Buying	Product Distribution	Online Store Creation
<i>Similarities</i>	User-friendly interface, connects businesses in e-commerce space	User-friendly interface, e-commerce focus	Connects businesses in e-commerce space	N/A
<i>Key Differences</i>	Promoting local businesses mainly	Focus on pre-vetted brands, wholesale buying	Focus on brand discovery, wider reach	For local businesses, online store creation

In addition to the above: there exist other platforms that provide similar services such as GO Wholesale, MerchantCircle, Mable.

1.4 Document Outline

The document provides a comprehensive and structured approach to the development and implementation of BridgeLocal, a platform aimed at empowering local manufacturers in Jordan by bridging the gap between them and retailers. Each chapter of the document carefully outlines different aspects of the project, ensuring a thorough understanding and effective execution. The following is the detailed outline of the document:

Table 1.2 Documentation Outline

<i>Chapter Title</i>	<i>Description</i>
<i>Chapter 1: Introduction</i>	Includes a brief overview of the project and a summary of the problem the project is trying to solve.
<i>Chapter 2: Project Plan</i>	Includes a detailed explanation of the project plan, the role of each team member, cost estimation, and necessary tools.
<i>Chapter 3: Requirements Specification</i>	Includes a detailed description of the system functional and nonfunctional requirements as well as declaration of the stakeholders.
<i>Chapter 4: System Design</i>	Includes a detailed analysis of the system components, and low- and high-level designs of the system.

Chapter 2

Project Plan

2.1 Project Deliverables

BridgeLocal encompasses a comprehensive set of components crucial for its development, deployment, and effective use. These include the complete source code and detailed documentation covering all system aspects, as well as the database schema with initialization scripts. Additionally, high-fidelity user interface designs and strict security guidelines ensure the platform is scalable, secure, and user-friendly. Together, these deliverables form the backbone of the Bridge Local platform, facilitating a direct connection between local manufacturers and retailers, promoting local products, and fostering a sustainable market environment in Jordan.

2.2 Project Tasks

Table 2.1 shows the tasks that will and have taken place during our project. The project starts with the analysis phase, where the main project idea and requirements were stated. The next tasks are in the design phase, where the logical model design and user interface prototyping are completed. After the design phase, we are expected to complete implementation at a later time, when the system will be fully functional and ready for the user. Every phase has been given an expected completion time.

Table 2.1 Project Tasks

Task ID	Task Name	Description	Dependencies	Start Date	Due Date	Completed
Analysis						
T1	Brainstorming Ideas	Meeting with the project supervisor to discuss project ideas	-	3/3/2024	7/3/2024	100%
T2	The general idea and problem statement	Planning and discussion of the project with group individuals	T1	10/3/2024	12/3/2024	100%
T3	Requirements Gathering	Collecting information from local manufacturers about their needs for the application and the database.	T1	10/3/2024	14/3/2024	100%
T4	Scope Definition	Defining the features and functionality that will be included in the project as well as constraints and Limitations	T3	17/3/2024	21/3/2024	100%
T5	Related Work	Researching similar applications and competitors	T4	24/3/2024	28/3/2024	100%
Design						
T6	Documentation design	Involves designing the documentation for the application and the database, including manuals, specifications, and system diagrams	T1	17/3/2024	11/5/2024	100%
T7	User-Interface design	Designing our website's interface	T5	14/4/2024	11/5/2024	100%
T8	Database design	Designing the database for the website	T5	14/4/2024	11/5/2024	100%
T9	Documentation Finalization	Finalizing and organizing the four chapters	T8	11/5/2024	19/5/2024	100%

T10	Presentation Preparation	Preparing for the project presentation	-	19/5/2024	25/5/2024	100%
Implementation						
T11	Coding and Development	Writing the code for the interface, database development	T7,T8,T9	6/10/2024	28/12/2024	0%
T12	Testing	Conducting rigorous testing of the developed system	T11	29/12/2024	11/1/2025	0%

The figure below Figure 2.1 shows a Gantt chart of the project tasks, it provides a detailed outline of the duration each task took and a completion date estimation. Tasks in orange shows the set of tasks related to the Analysis phase of the SDLC, while the set in green shows the ones related to design.



Figure 2.1 Gantt Chart

The figure below Figure 2.2 shows a PERT chart of the project tasks, it provides an overview of tasks interrelation and dependence.

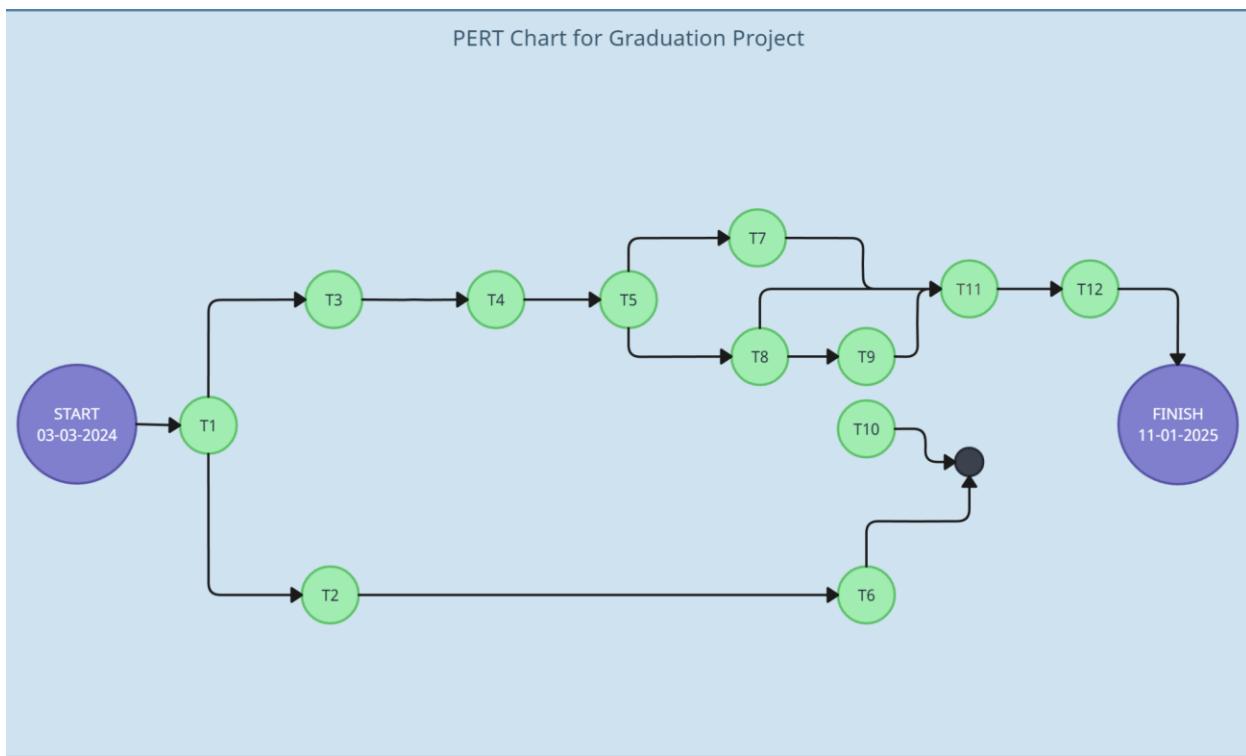


Figure 2.2 Pert Chart

2.3 Roles and Responsibilities

Table 2.2 shows the roles of each team member in the project and what tasks they will be responsible for.

Table 2.2 Roles & Responsibilities

<i>Member Name</i>	<i>Responsibility</i>
<i>Mohammad Abuayyash</i>	Documentation, Database, and Back-end
<i>Hamzeh Nsirat</i>	Documentation, Database, and Back-end
<i>Rafeeq Al-Shareef</i>	Documentation, Database, and Front-end
<i>Hussam Jabban</i>	Documentation, Design, and Front-end

2.4 Risk Assessment

Table 2.3 shows the possible obstacles and issues we might come across. We also provided a risk response, which shows what can be done to avoid these potential risks.

Table 2.3 Risk Assessment

<i>Risk ID</i>	<i>Task ID</i>	<i>Task Name</i>	<i>Risk Description</i>	<i>Probability</i>	<i>Risk Response</i>
<i>R1</i>	T1 & T2	Brainstorming ideas and the idea and problem statement	Conflict about the project specifications and misunderstanding of the project goals	Low	Making sure that everyone has a comprehensive understanding of the project requirements and ensure that everyone is on the same page moving forward
<i>R2</i>	T3	Requirement Gathering	Inadequate understanding of user requirements leading to incomplete or incorrect feature implementation	Medium	Conduct thorough interviews and surveys with local manufacturers to gather requirements. Prioritize based on impact and feasibility.
<i>R3</i>	T4	Scope Definition	Unclear project scope resulting in scope creep or project delays	Medium	Collaborate closely with stakeholders to define clear project scope and objectives. Document scope boundaries and constraints.
<i>R4</i>	T5	Related Work	Not finding applications related to our project	Low	Conducting an extensive search of applications
<i>R5</i>	T6	Documentation design	The documentation may be incomplete or inaccurate	Low	Establishing clear documentation guidelines and ensuring the documentation is organized and accessible

R6	T7	User-Interface design	Not providing the user with an adequate user-interface results in poor user experience	High	Ensuring the user is involved in the UI design process and conducting usability testing
R7	T8	Database design	Inefficient database design may result in poor query performance, slow data retrieval, or inefficient storage structures	High	Prioritizing a thorough analysis of data requirements and implementing an optimized database structure
R8	T9	Documentation Finalization	Not completing the documentation on due date	Low	Making sure every chapter has a designated time period and sticking to the project plan
R9	T10	Presentation Preparation	Unclear communication of project purpose and main goal	Low	Ensuring that everyone in the team is well prepared and understands the project's problem statement in addition to conducting several rehearsing sessions

The SWOT analysis provides a clear overview of the internal and external factors that impact the BridgeLocal project. The strengths highlight the platform's ability to support the local economy, foster sustainability, and provide advanced analytics and product validation tailored for the Jordanian market. Weaknesses such as dependency on user adoption, initial market competition, and the required skillset for development and maintenance are identified. Opportunities include potential expansion to other markets, integration with local payment gateways, and community-building features. However, the project must also navigate threats such as market dominance by large manufacturers, cybersecurity risks, and rapid technological change.



Figure 2.3 SWOT Grid

2.5 Cost Estimation

Table 2.4 describes the services needed for this project in addition to the cost estimation of each service and a brief description on how these services are used.

Table 2.4 Cost Estimation

<i>Service</i>	<i>Cost Estimate</i>	<i>Description</i>	<i>Actual Cost</i>
<i>Servers</i>	\$2500 ONE TIME	Servers play a crucial role in the infrastructure of any web-based application. They host the application, manage requests from clients and store data.	\$0
<i>Development Tools and software Licenses</i>	\$150 per user/year	Software licenses for development tools, integrated development environments (IntelliJ IDEA), and other necessary utilities	\$0
<i>Domain Registration</i>	\$10-\$20 per year	Provides a recognizable and professional web address for users to access BridgeLocal	-
<i>SSL Certificate</i>	\$200 per year	An SSL certificate encrypts data transferred between users and the website, which is crucial for security	Free Access
<i>Cloud Services and Hosting</i>	\$100 per month	Cloud Hosting: is essential for deploying and scaling the application Cloud Storage: For storing user data, product images, and other content.	-

2.6 Project Management Tools

Table 2.5 shows the tools that will be used in the implementation of this project.

Table 2.5 Project Management Tools

<i>Tool</i>	<i>Description</i>
<i>Google Docs</i>	Documentation
<i>Google drive</i>	Sharing folders between team members
<i>Creately</i>	PERT chart
<i>TeamGantt</i>	Gantt Chart
<i>Lucidchart</i>	UML Design
<i>Figma</i>	Interface Design
<i>Visual Studio Code</i>	Front-End Development
<i>IntelliJ IDEA</i>	Back-End Development
<i>PostgreSQL</i>	Database Interfacing and Administration
<i>AWS Services</i>	Cloud Services for Storage and Computing

Chapter 3

Requirements Specification

3.1 Stakeholders

Table 3.1 defines the stakeholders of the system, their importance, and how they benefit from our platform.

Table 3.1 Stakeholders

<i>ID</i>	<i>Stakeholder</i>	<i>Description</i>
S1	Local Suppliers	Local suppliers are individuals or businesses that produce goods locally within Jordan. They are the primary users of the BridgeLocal platform, utilizing it to showcase and sell their products to a wider audience.
S2	Retailers	Retailers are businesses or individuals who sell products to end consumers. They utilize BridgeLocal to discover and purchase locally produced goods to stock in their stores or sell online.
S3	System Administrator	The system administrator is responsible for the overall management of the system, this is an essential role to ensure that the system stays reliable and secure.
S4	Guest User	Guest Users can view platform services.

3.2 Platform Requirements

Table 3.2, Table 3.3 describe the client requirements and server requirements respectively, in addition to their importance.

Table 3.2 Client Requirements

<i>Requirement</i>	<i>Requirement Name</i>	<i>Importance</i>
<i>CR1</i>	PC or Laptop or Mobile	Required
<i>CR2</i>	Connection to Internet	Required
<i>CR3</i>	Connection to Server	Required

Table 3.3 Server Requirements

<i>Requirement</i>	<i>Requirement Name</i>	<i>Importance</i>
<i>SR1</i>	Access to Database	Required
<i>SR2</i>	Connection to Internet	Required

3.3 Functional Requirements

3.3.1 Common Functional Requirements

Table 3.4 describes the common functional requirements of the system and outlines the features that all users can have.

Table 3.4 Common Functional Requirements

<i>ID</i>	<i>Requirement</i>	<i>Description</i>
<i>CFR1</i>	User Login	Allows users to get into their specified dashboard based on the information provided.
<i>CFR2</i>	User Sign up	Allows new users to join by providing their personal information.
<i>CFR3</i>	Dashboard	Each type of user has a specified dashboard that they are redirected to after checking their login information.
<i>CFR4</i>	Forget Password	Allows users to easily change their passwords and confirmation to ensure security measures are upheld.
<i>CFR5</i>	User Logout	The users have the option to logout of their accounts anytime they want.
<i>CFR6</i>	Navigation Menu	The landing page of the website provides a navigation menu that educates the user about our website and what exactly it does, it helps them learn more about the services provided.
<i>CFR7</i>	Access Control	Users should have appropriate access rights based on their roles and permissions.
<i>CFR8</i>	View Platform Services	Users can view detailed information on all available services, search, filter by category, sort, and read reviews to easily find and compare services.

3.3.2 System Administrator Functional Requirements

Table 3.5 describes the functional requirements of the system from the system administrator's perspective. As the main mediator of the system, they can do all the operations

Table 3.5 System Administrator Functional Requirements

<i>ID</i>	<i>Requirement</i>	<i>Description</i>
<i>SAFR1</i>	View Users	System administrators should have the ability to view users such as retailers and local suppliers.
<i>SAFR2</i>	View Applications	System administrators should be able to review applications from suppliers and retailers upon signing up.
<i>SAFR3</i>	Apply Penalties	System administrators should have the authority to apply penalties upon violation of order fulfillment, order payment, and other relevant policies.
<i>SAFR4</i>	Add Users	System administrators should be able to add users to the system.
<i>SAFR5</i>	Edit Users	System administrators should be able to edit users to the system.
<i>SAFR6</i>	Delete Users	System administrators should be able to delete users to the system.
<i>SAFR7</i>	Approve Applications	System administrators should be able to approve applications sent by suppliers and retailers.
<i>SAFR8</i>	Reject Applications	System administrators should be able to reject applications sent by suppliers and retailers.
<i>SAFR9</i>	View Complaints	System administrators should be able to view complaints sent by suppliers to retailers and vice versa.

3.3.3 Retailer Functional Requirements

Table 3.6 describes the functional requirements of the system from the retailer's perspective.

Table 3.6 Retailer Functional Requirements

<i>ID</i>	<i>Requirement</i>	<i>Description</i>
<i>RFR1</i>	View Account Info	Retailers should be able to view their account information easily.
<i>RFR2</i>	Update Account Info	Retailers should be able to update their account information easily.
<i>RFR3</i>	View Requested Quotations	Retailers should be able to view quotations that have been sent to the supplier.
<i>RFR4</i>	View Dashboard Content	Retailers should have access to a customized dashboard featuring data analytics and visualization tools.
<i>RFR5</i>	Export Dashboard Content	Retailers should be able to export dashboard content as a PDF
<i>RFR6</i>	Search Marketplace and Filter by Category.	Retailers should be able to search the marketplace for products and filter results based on categories, and other relevant metrics.
<i>RFR7</i>	View Product	Retailers should be able to view supplier products
<i>RFR8</i>	Save Favorite Listings	Retailers should have the ability to save favorite listings from search results for later reference.
<i>RFR9</i>	View Past Purchases Performance	Retailers should be able to view past purchases' performance based on factors such as profits and quality ratings.
<i>RFR10</i>	Request Quotation	Retailers should be able to request quotations from local suppliers for desired products.
<i>RFR11</i>	View Selected Quotation	Retailer should be able to view a selected quotation from the quotation list.
<i>RFR12</i>	Accept The Supplier's Placed Quotation	Retailer should be able to accept the quotation that is sent by the supplier.

<i>RFR13</i>	Cancel Send Quotation	Retailers should have the option to cancel their quotation requests to suppliers.
<i>RFR14</i>	View Supplier's Related Products	Retailers should be able to view other supplier's products when they request the quotation.
<i>RFR15</i>	Add Supplier's Related Products	Retailers should be able to add other supplier's products to the requested the quotation.
<i>RFR16</i>	Cancel Order	Retailers should be able to cancel orders that been sent to suppliers.
<i>RFR17</i>	Add Feedback	Retailers should be able to give feedback for the supplier based on their products.
<i>RFR18</i>	Escalate Order Fulfillment Failures	Retailers should be able to escalate order fulfillment failures to resolve issues promptly.
<i>RFR19</i>	Monitor Purchase Status	Retailers should be able to monitor the status of their purchases, including quotation responses, bid-order process, payment, delivery, and feedback.

3.3.4 Supplier Functional Requirements

Table 3.7 describes the functional requirements of the system from the supplier's perspective.

Table 3.7 Supplier Functional Requirements

<i>ID</i>	<i>Requirement</i>	<i>Description</i>
<i>SFR1</i>	View Account Info	Suppliers should be able to view their account information easily.
<i>SFR2</i>	Update Account Info	Suppliers should be able to update their account information easily.
<i>SFR3</i>	View Product	Suppliers should be able to view their products.
<i>SFR4</i>	Upload Products	Suppliers should be able to upload product listings on the platform.
<i>SFR5</i>	Edit Products	Suppliers should be able to edit product listings on the platform.
<i>SFR6</i>	Search Products	Suppliers should be able to search for their products on their lists.
<i>SFR7</i>	Publish Product	Suppliers should be able to publish their products on the marketplace.
<i>SFR8</i>	Expand Product	Suppliers should be able to expand the selected product from the product list.
<i>SFR9</i>	Export Dashboard Content	Suppliers should be able to export dashboard content with an option for selective report generation.
<i>SFR10</i>	View Profile Insights	Suppliers should be able to view insights into their profiles.
<i>SFR11</i>	View Product Insights	Suppliers should be able to view insights into their product performance.
<i>SFR12</i>	Send Quotation	Suppliers should be able to send quotations to retailers for requested products.
<i>SFR13</i>	Expand Quotation	Suppliers should be able to expand the selected quotation from the quotation list.
<i>SFR14</i>	Escalate Order Payment Failures	Suppliers should be able to escalate order payment failures for timely resolution.
<i>SFR15</i>	Monitor Fulfillment Status	Suppliers should be able to monitor the fulfillment status of orders, including quotation responses, bid-order processes, payment, delivery, and feedback.

<i>SFR16</i>	View Quotation	Suppliers should be able to view quotations that have been sent from retailers.
<i>SFR17</i>	View Orders	Suppliers should be able to view orders coming from retailers.
<i>SRF18</i>	Search Marketplace and Filter by Competitors	Suppliers should be able to search the marketplace for competitors and filter search results based on competitor offerings.
<i>SRF19</i>	Expand Order	Suppliers should be able to expand the selected order from the order list.
<i>SRF20</i>	View Status	Suppliers should be able to view the current status of the selected order.
<i>SRF21</i>	View Feedback	Suppliers should be able to view the retailer's feedback.
<i>SRF22</i>	View Dashboard Content	The supplier should have access to a customized dashboard featuring data analytics and visualization tools.

3.4 Non-Functional Requirements

Table 3.5 defines the non-functional requirements of the system; these are the requirements that show how the system should operate in order for it to meet the desired objective.

Table 3.8 Non-Functional Requirements

<i>ID</i>	<i>Requirement</i>	<i>Description</i>
<i>NFR1</i>	Usability	The system should achieve its specified goals with an efficient, effective, and satisfactory user experience for all users of the system. This includes providing a seamless user experience that ensures all users are satisfied.
<i>NFR2</i>	Performance	The system should run smoothly, run large amounts of data without interruption, and ensure all functionalities are running smoothly.
<i>NFR3</i>	Security	The platform will ensure that all user data, including personal information and transaction details, is handled securely.
<i>NFR4</i>	Reliability	The platform should provide accurate and reliable information to users, ensuring trustworthiness and credibility. The system should also have a high level of availability, with minimal downtime or disruptions to user access.
<i>NFR5</i>	Scalability	The platform should be designed to handle increasing user traffic and product listings as the user base grows, and the system's performance and capacity should scale with the expanding data volume and user load, ensuring optimal performance under load.
<i>NFR6</i>	Maintainability	The system will be easy to update and fix any issues that may arise.

Chapter 4

System Design

4.1 Logical Model Design

After examination of the system requirements and the level of complexity involved in the project we have made the decision to employ an object-oriented methodology.

The main advantage of the object-oriented approach is in its inherent organization which greatly facilitates collaborative development. Encapsulation and abstraction facilitate collaboration by combining data and methods within a singular class allowing for regulated access to properties and methods.

Abstraction enhances simplicity by prioritizing the fundamental characteristics of the system.

One further advantage of the object-oriented (OO) approach is the ability to reuse code through the implementation of the inheritance principle. Establishing links between objects enables developers to construct a hierarchical structure of classes thus facilitating the reuse of code from existing classes. Code reuse enhances efficiency and minimizes duplication.

Comprehending the interconnections of classes is of utmost significance as all classes within the system are intricately linked and associated in some manner. Objects cannot exist independently; they must have connections or associations with other objects.

Polymorphism is a fundamental notion in the object-oriented method along with encapsulation, abstraction and inheritance. Polymorphism enables the flexibility to invoke functions in multiple ways by allowing access to different types of objects through a common interface

The Unified Modeling Language (UML) is a tool that visually represents the design of a system using the object-oriented paradigm. This section is subdivided into nine subsections. Each chapter corresponds to a certain UML diagram, beginning with use case diagrams that illustrate the connections between the actors and the system. The class diagram illustrates the system's classes along with their properties, methods, and associations with other classes.

The object diagram represents an instance of the class diagram. Package diagrams are used to organize the structure of the system and to illustrate the relationships between these packages.

Followed by component diagrams that are used to offer insight regarding the components of the system, while deployment diagrams, on the other hand, show the physical aspects of the system and how they communicate with the software.

We used activity diagrams in addition to state transition diagrams to represent the workflow of some features and functionalities of the system, state transition diagram offers a dynamic view of how objects transition between different states. Finally, sequence diagrams show the interaction with different objects over an amount of time.

4.1.1 Use Case Diagram

Figures Below Illustrates the different Actions each stakeholder can take.

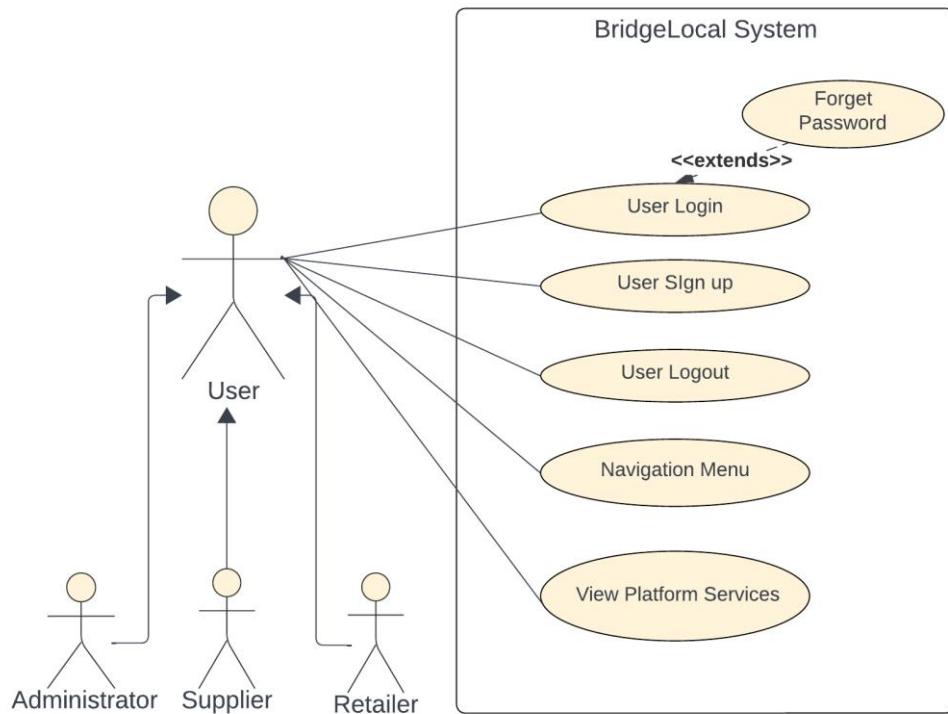


Figure 4.1 Use Case Diagram 1

Use case: Forget Password

Actors: User (initiator)

Purpose: Forget password allows users to change their passwords after authentication

Overview: The user is able to change their password after receiving a confirmation email to add a security measure and ensure that no one is trying to access their account, after the confirmation email the user is able to change their password into a new one.

Type: Essential

Cross-Reference: CFR4

A typical course of action:

Table 4.1 Typical Course of Action - Forget Password

Actor Action	System Response
1. Clicks on forget password	
2. Enters their email	3. A confirmation email is sent to the user with a link that redirects to the change password page.

4. Enters their new password

5. Saves the new password

6. Sends another confirmation email stating that their password has been changed.

Alternative Solution: the user receives an email regarding a password change and discovers that someone is trying to access their account, the user suspecting a malicious activity decides to ignore the email and does not end up changing their password.

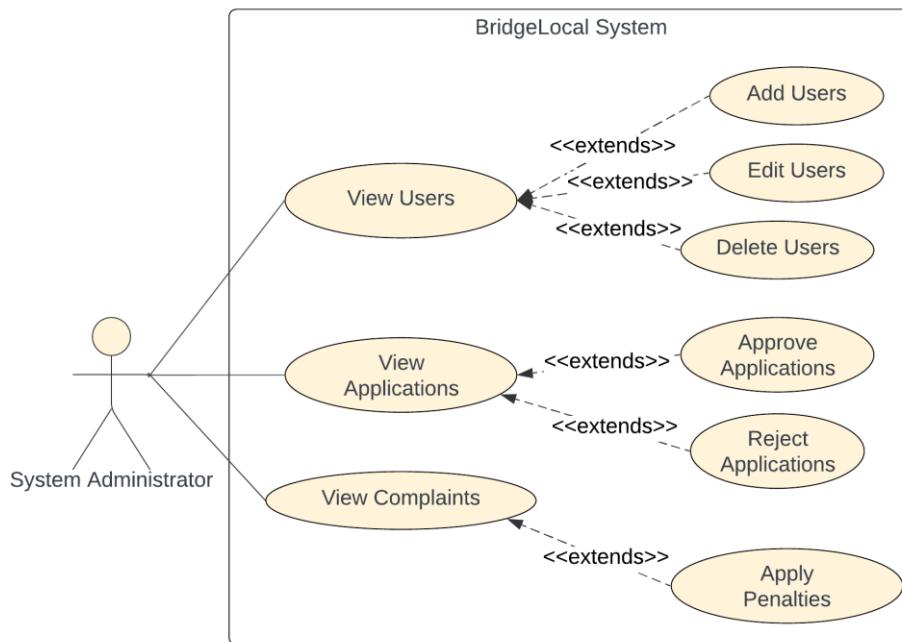


Figure 4.2 Use Case Diagram 2

Use case: View Complaints

Actors: System Administrator (Initiator), Server

Purpose: The purpose of this use case is to enable system administrators to view complaints submitted by customers.

Overview: After logging into the system, a system administrator can access the complaints section where they can view all complaints submitted by retailers/suppliers. They can then take appropriate actions based on the nature of the complaints, such as analyzing trends or taking corrective actions.

Type: Essential

Cross-Reference: SAFR9

A typical course of action:

Table 4.2 Typical Course of Action – View Complaints

Actor Action	System Response
<p><i>1. Navigates to the complaints section of the dashboard.</i></p> <p><i>3. Selects a specific complaint from the list to view details.</i></p> <p><i>5. Reviews the complaint details and analyzes the complaint, including the customer's description and then takes the appropriate actions.</i></p>	<p>2. Server retrieves complaints from the database and displays a list of complaints.</p> <p>4. Server retrieves detailed information about the selected complaint and display its details.</p>

Alternative Solution: the system faces issues while retrieving complaint records from the database or displaying them to the System Admin; it notifies the System Admin about the problem. The system will display an error message explaining the issue then suggest a list of actions for the System Admin to solve the issue. This could include troubleshooting steps like checking database connectivity or verifying system configurations.

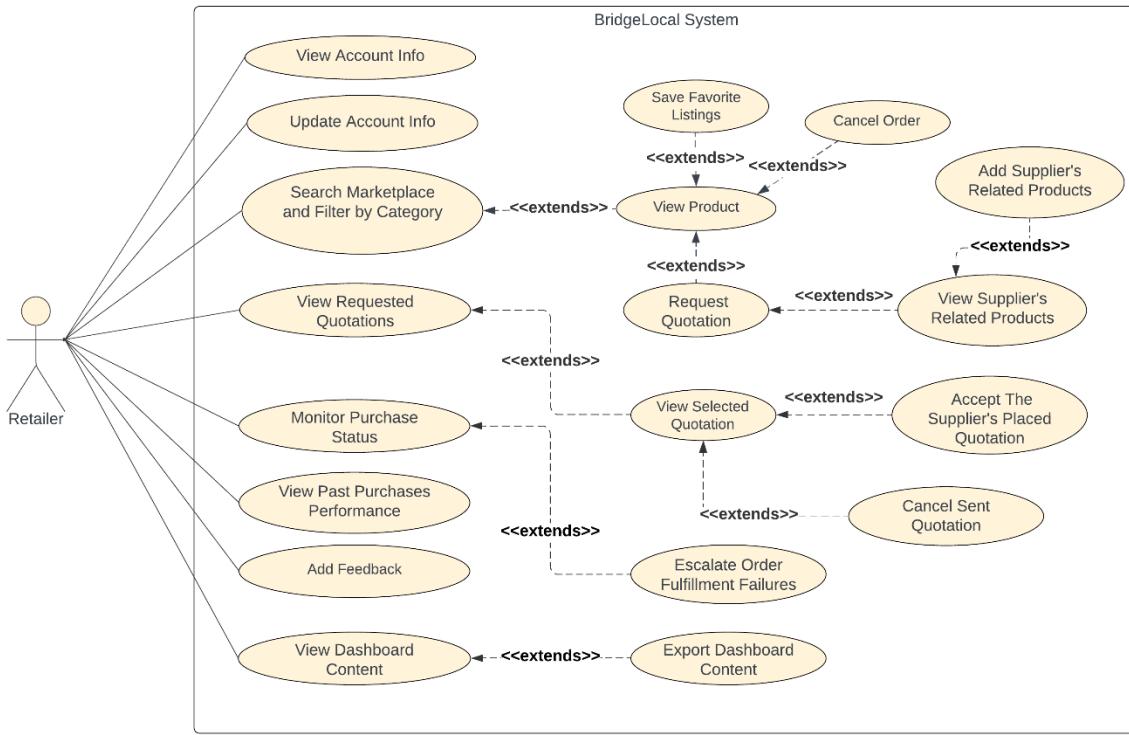


Figure 4.3 Use Case Diagram 3

Use case: Request Quotation

Actors: Retailer (initiator), Supplier

Purpose: The purpose of this use case is to facilitate the request for a quotation from a supplier by the retailer.

Overview: After the retailer requests a quotation from supplier, the system processes the request and propagates it to the intended supplier. After the quotation has been received, the system will notify the retailer, enabling them to review the provided information.

Type: Essential

Cross-Reference: RFR10

A typical course of action:

Table 4.3 Typical Course of Action – Request Quotation

Actor Action	System Response
1. <i>Retailer requests quotation from supplier.</i>	2. System processes the request and directs it to the intended supplier.
3. <i>Supplier receives the request and prepares a quotation.</i>	

4. System will notify the retailer about the completed quotation request.

5. Retailer reviews the provided quotation and takes appropriate action.

Alternative Solution: The system faces issues in processing the request due to incomplete / invalid information provided by the retailer. The system will then notify the retailer about the issue and redirects them to a page to edit the information.

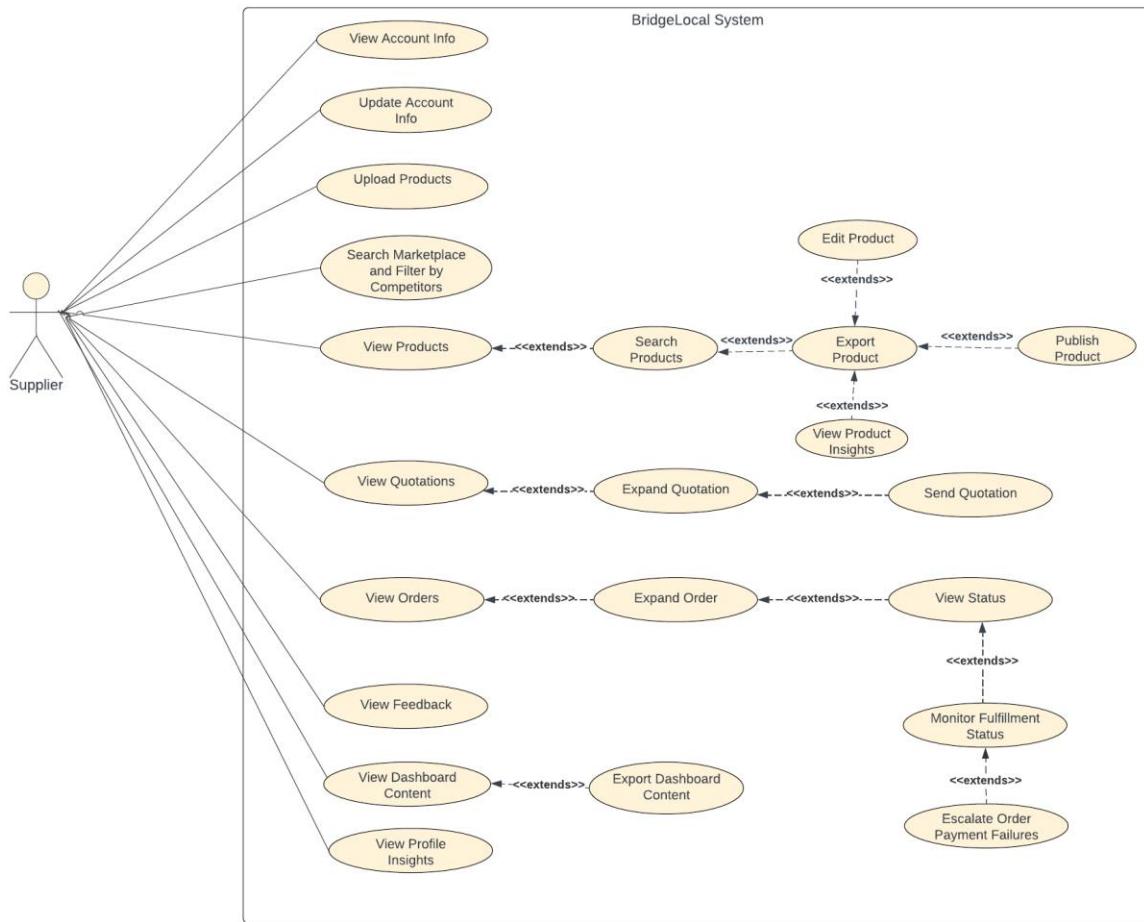


Figure 4.4 Use Case Diagram 4

Use case: Send Quotation

Actors: Supplier (initiator), Retailer

Purpose: The purpose of this use case is to facilitate the sending of quotations from a supplier to retailers.

Overview: After the supplier prepares and sends a quotation to intended retailer, the system makes sure processing has been proper and delivers the quotation to the intended recipient.

Type: Essential

Cross-Reference: SFR12

A typical course of action:

Table 4.4 Typical Course of Action – Send Quotation

Actor Action	System Response
<i>1. Supplier prepares and sends a quotation to the intended retailer(s).</i> <i>3. Receives the quotation from the supplier.</i>	<i>2. System processes the quotation and forwards it to the intended retailer(s).</i>

Alternative Solution: If the supplier faces issues while preparing or sending the quotation, the system will notify the supplier about the problem and prompts them to review and edit the quotation before resending it to the intended retailer(s).

4.1.2 Class Diagram

The class diagram for BridgeLocal shows the arrangement and connections between entities in the system, offering an outline of the platform's design. The User class is an abstract class that acts as a foundation for disjoint user categories including Retailer, Supplier and Administrator. It includes attributes for identification, contact information and account management like: UserID, NationalNumber, Email, Password and PhoneNumber. This diagram also defines methods for user actions, such as verifyEmail, signup, login and forgetPassword.

The Retailer and Supplier classes derive from the User class enhancing it by incorporating further properties and methods that match to their respective functions. for example, the Retailer class provide functionalities for handling orders and quotations like submitting complaints, viewing requested quotations and ordering products. The Supplier class has functionalities for managing products and quotations like viewing products, sending quotations and editing / uploading product details. Both classes enable features like submitting complaints, accessing dashboards and exporting dashboard content.

The Administrator class, which also inherits from User, possesses administrative capabilities such as user management (addUser, editUser, removeUser) and complaint handling (viewComplaints, applyPenalty).

The user classes are closely interconnected with additional classes such as Product, Order, Quotation, and Complaints to make the fundamental functions of the platform possible. The Product class contains properties for product details and associations with analytics, whereas the Order class handles order specific data. The Quotation class establishes a connection between retailers and suppliers by utilizing properties such as QuotationID, CompanyName, and OrderList. The Complaints and ComplaintsType classes manages the process of submitting complaints and categorizing them will make accurate tracking of issues easier.

Additional extra classes such as Analytics, Logs, Inventory, Penalty, and Review enhance the functionality and data management of the platform. Enumerations such as PenaltyEnum, UserStatus, and PurchaseStatus offer configurable values to ensure consistency.

This diagram offers a coherent and organized illustration of the system, outlining the essential properties, methods and relationships required to provide the platform's functionality and business logic. This holistic design guarantees an adaptable solution for linking local manufacturers with retailers; thus promoting local products and a collaborative market.

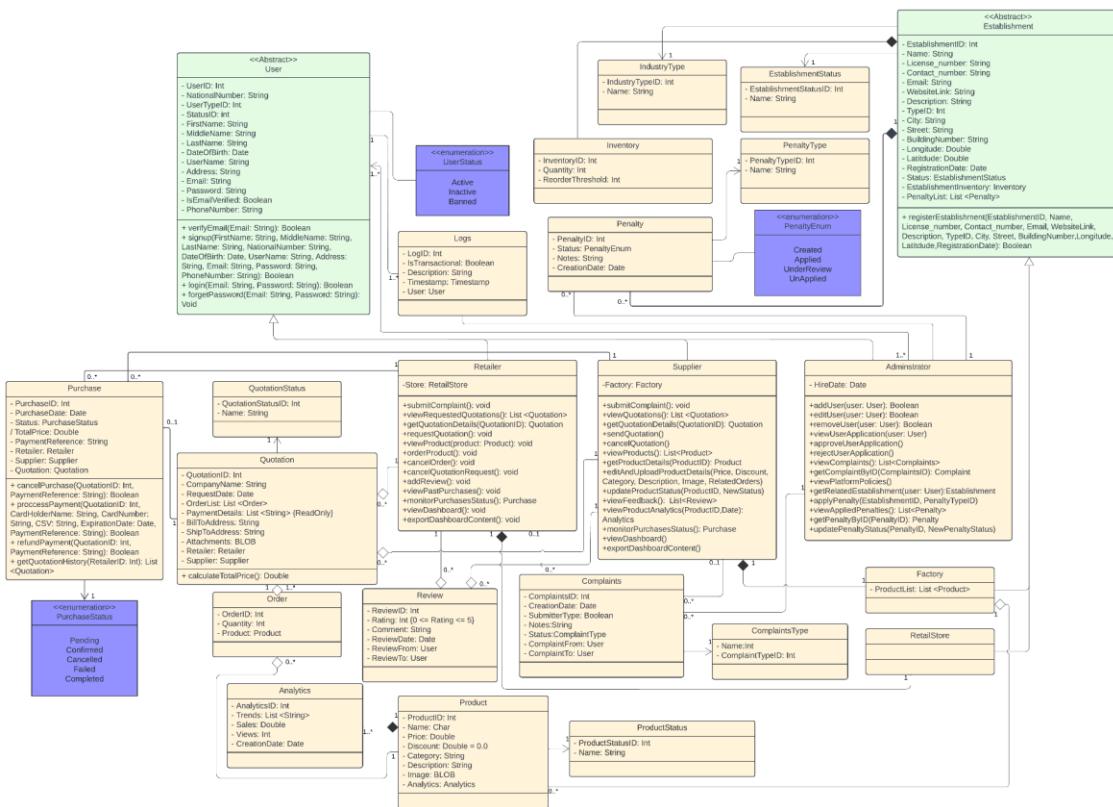


Figure 4.5 Class Diagram

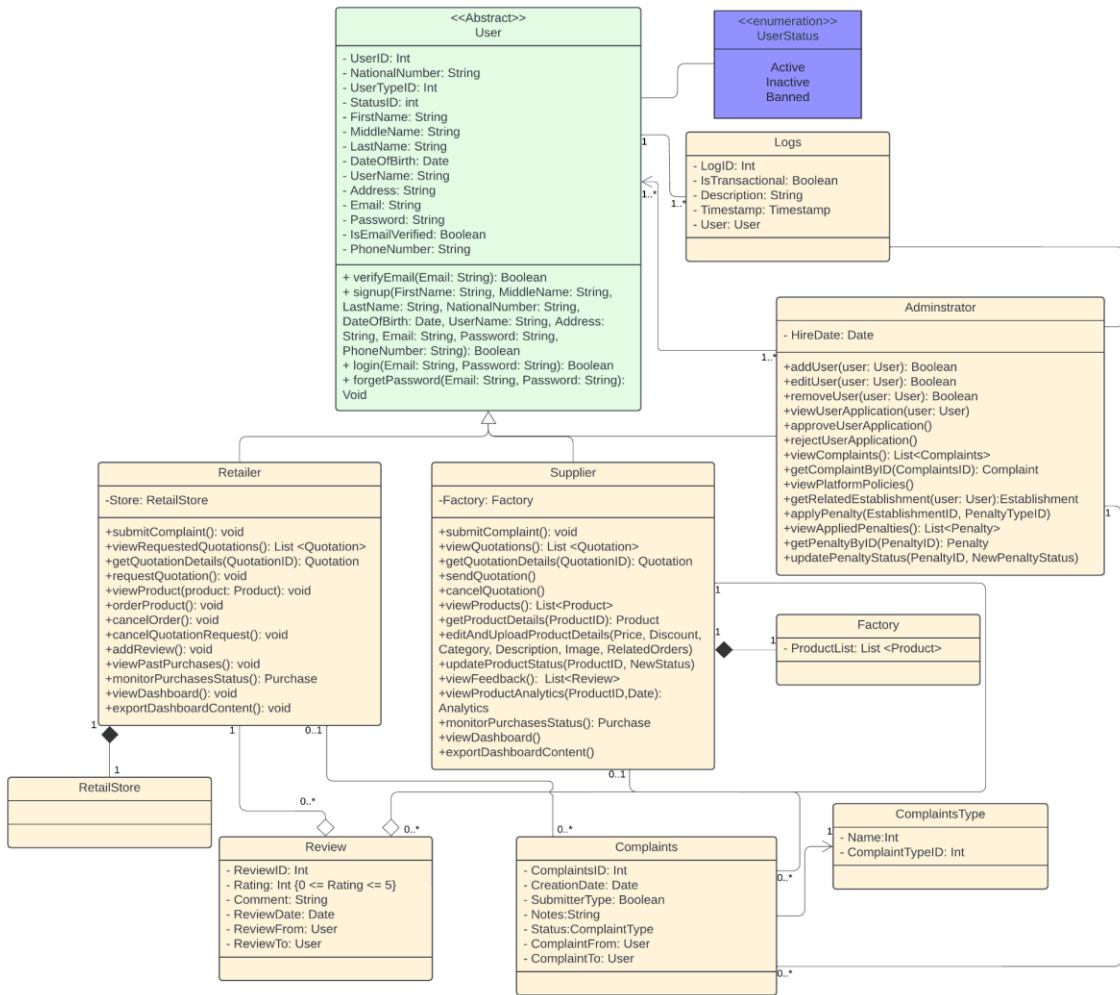


Figure 4.6 Class Diagram - Part1

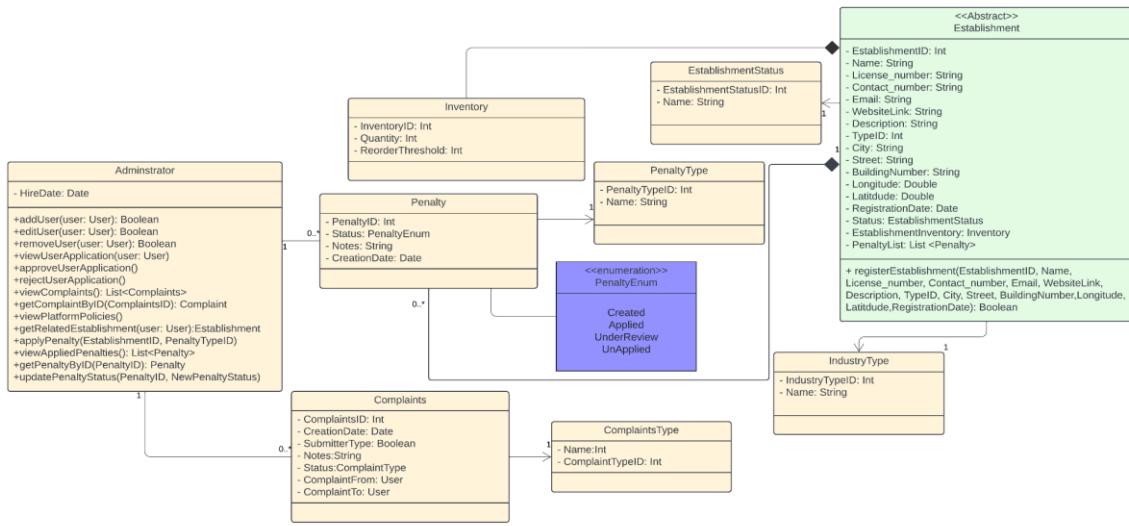


Figure 4.7 Class Diagram - Part2

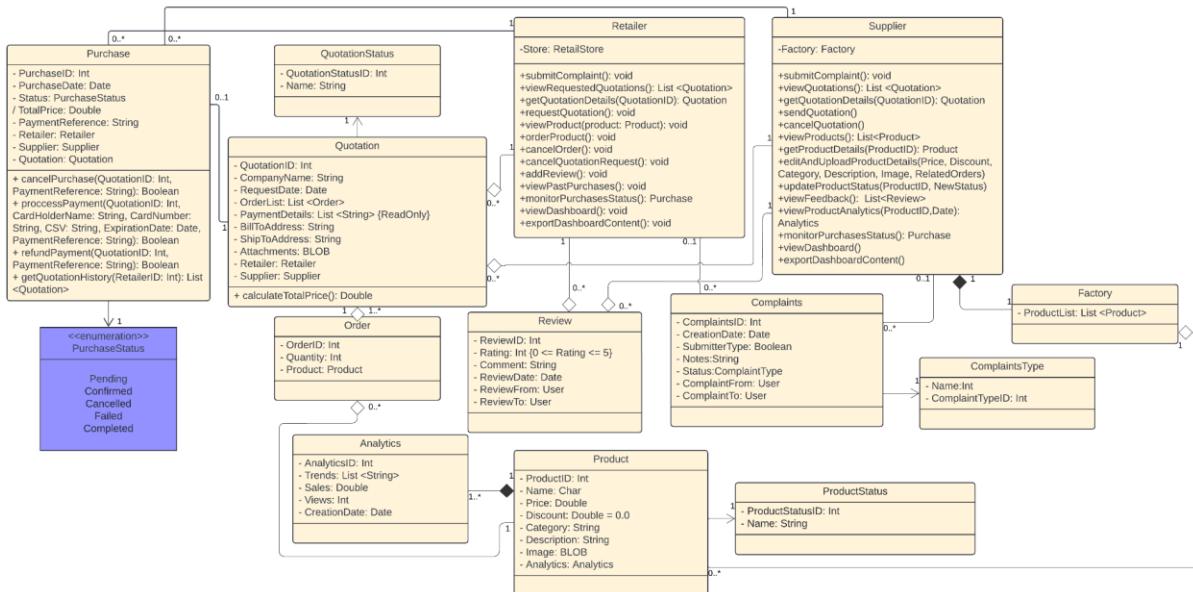


Figure 4.8 Class Diagram - Part3

4.1.3 Object Diagram

The figure below Figure 4.9 illustrates an instance of the class diagram. It provides specific information regarding an administrator by the name of "Ali Ahmad" who applied a type 2 penalty to an establishment by the name of "UTLIndustries" in response to a supplier complaint from the retailer.

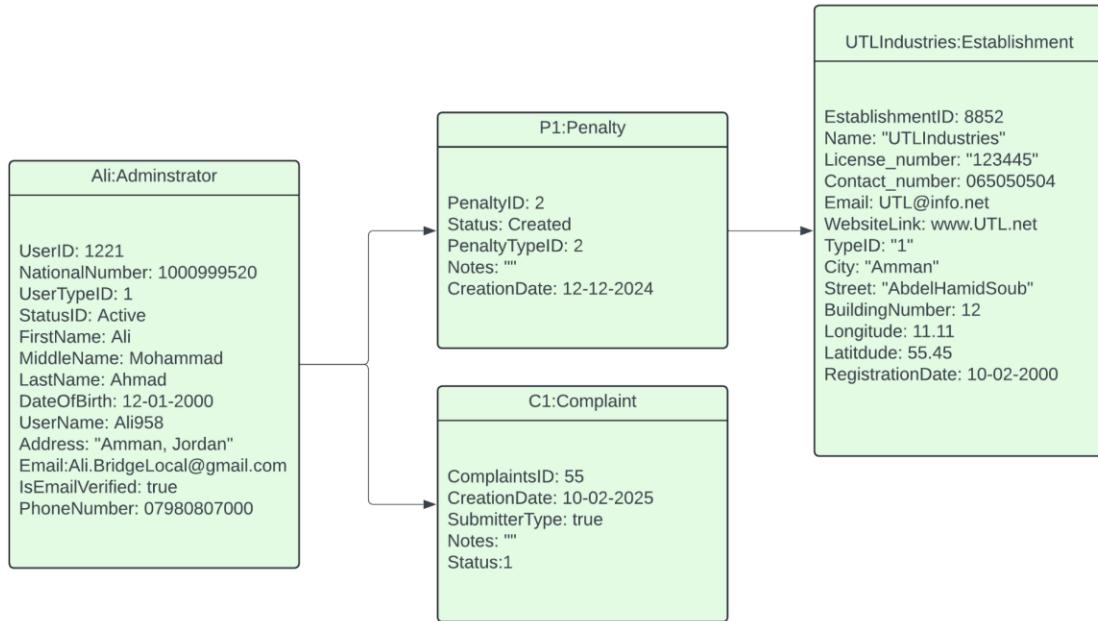


Figure 4.9 Object Diagram 1

The figure below Figure 4.10 illustrates an instance of the class diagram. It provides specific information regarding a retailer by the name of "Jawad Ismael" who gave a review to the supplier by the name of "Ahmad Jarrar" with a rating 2 and the comment "Bad Fulfillment Dates".

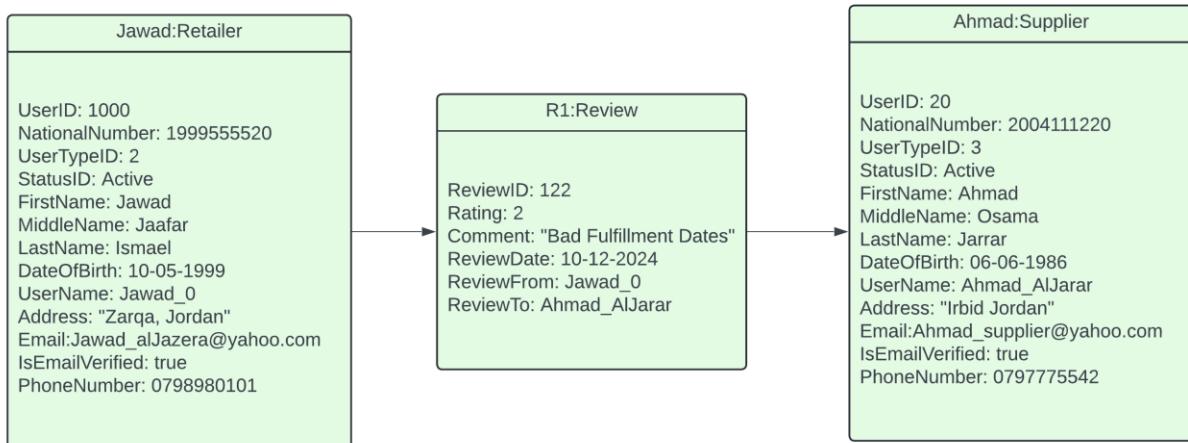


Figure 4.10 Object Diagram 2

4.1.4 Package Diagram

The first package diagram illustrated in Figure 4.11 shows the package “Users” and imported from it three other packages: “Doctor”, “Patient”, and “Potential Patient.”

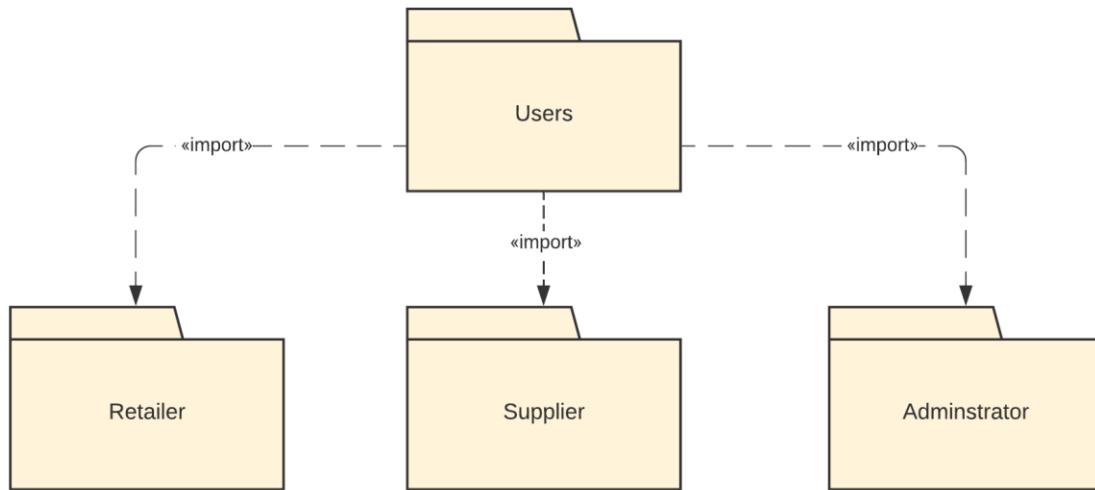


Figure 4.11 Package Diagram 1

The second package diagram illustrated in Figure 4.12 shows "User Management" merging with "Supplier," "Retailer," and "Administrator." It imports from "Platform," which imports from "Product Management." "Order Management" merges with "Order" and "Quotation," and accesses "Data collection/analytic." This detailed view highlights the interactions and dependencies among user management, order management, product management, and data analytics within the BridgeLocal system.

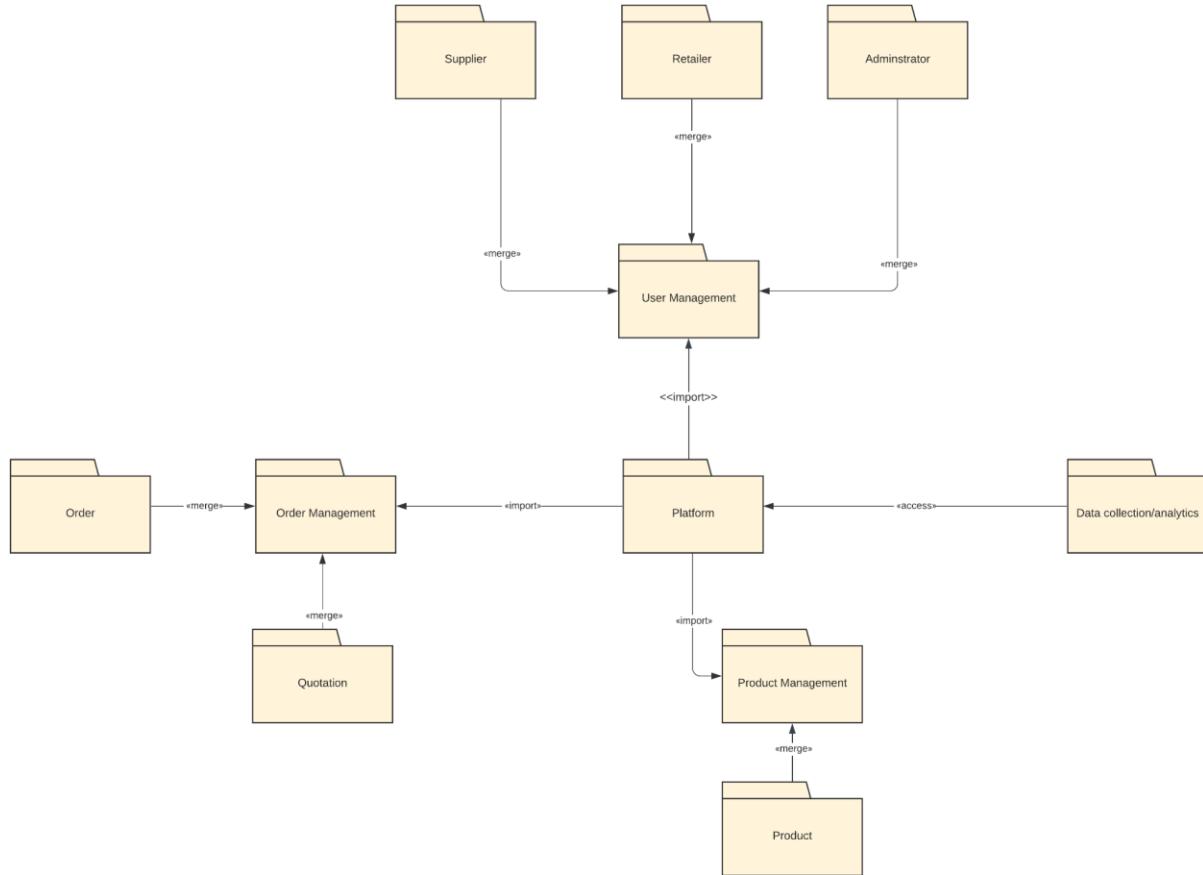


Figure 4.12 Package Diagram 2

4.1.5 Component Diagram

The figure below Figure 4.13 represents the component diagram of the system.

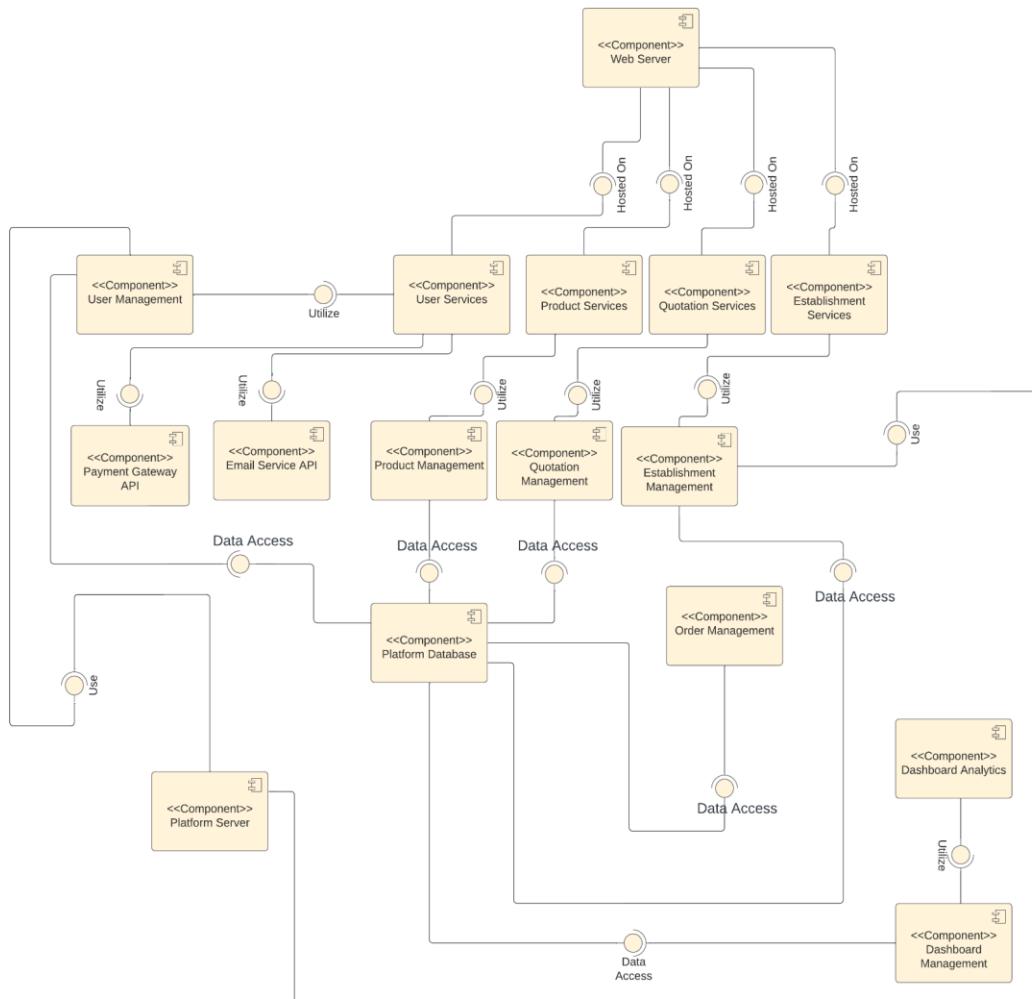


Figure 4.13 Component Diagram

4.1.6 Deployment Diagram

The figure below Figure 4.14 refers to the deployment diagram of the system, and it depicts how the hardware and software components interact with each other.

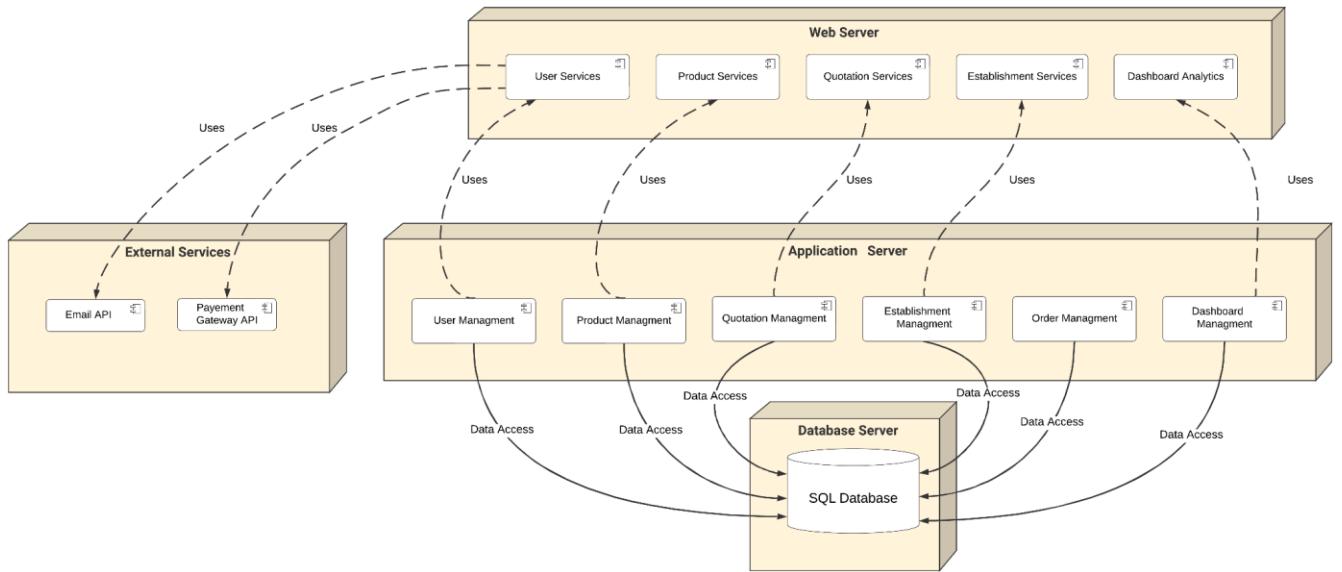


Figure 4.14 Deployment Diagram

4.1.7 Activity Diagram

The figure below Figure 4.15 shows the activity diagram for the “Create User” process, which starts when the user enters their general information. If there’s an error, it displays to the user an error indicating the error. If the information is valid, then the user should choose his type (retailer or supplier) and after that, the user enters their establishment’s details. If the data is valid, the system switches the user to their dashboard; if not, an error message pops up for the user.

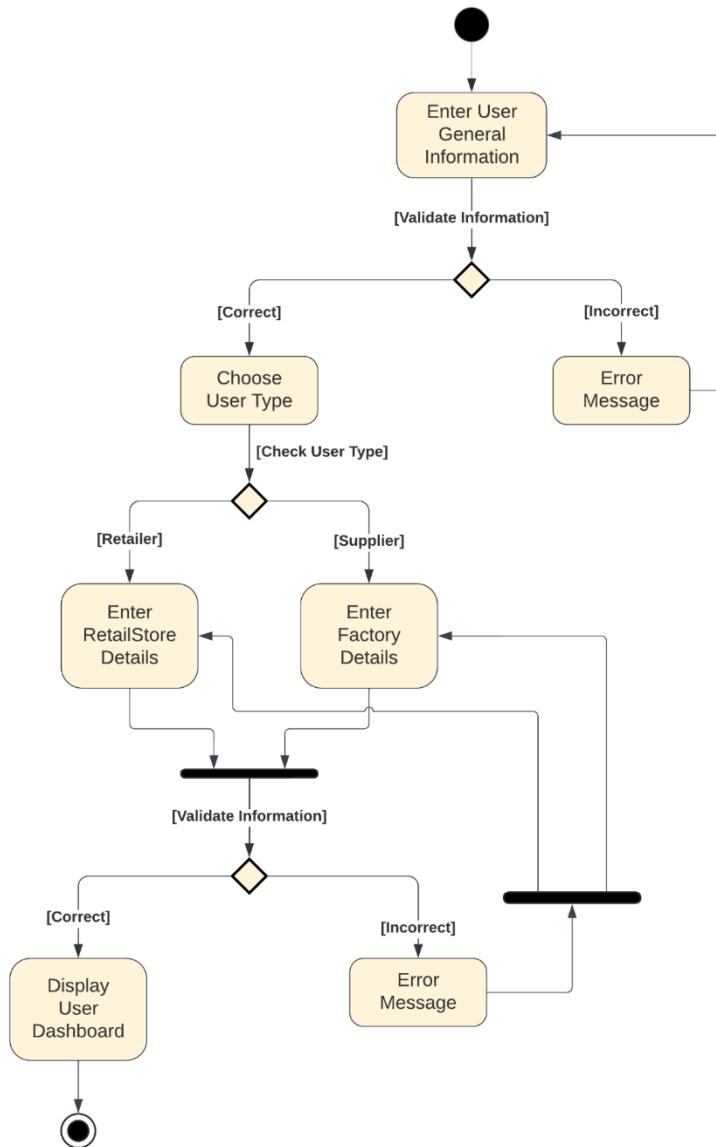


Figure 4.15 Activity Diagram 1

The figure below Figure 4.16 shows the activity diagram for the “Request Quotation” process, which starts when the retailer logs in their account and searches the marketplace for a specific product, after selecting the product, the retailer requests a quotation and sends it to the supplier, and then the supplier responds to the sent quotation and sends it back to the retailer to review it. After reviewing the quotation, they may accept and order it or reject the order.

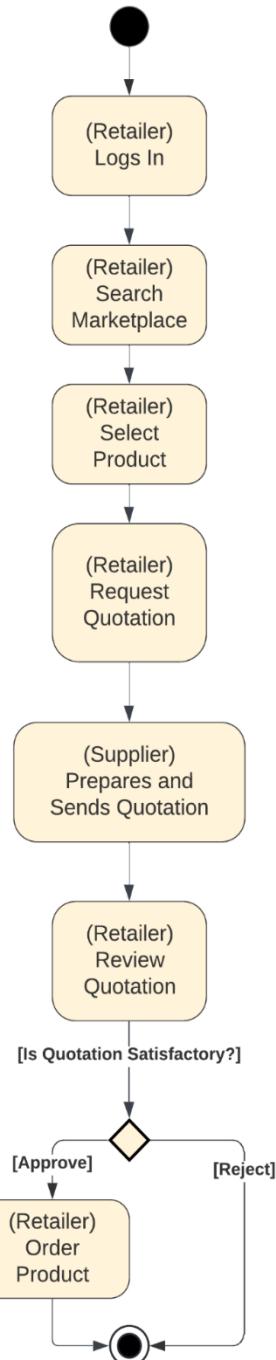


Figure 4.16 Activity Diagram 2

The figure below Figure 4.17 shows the activity diagram for “Applying Penalties” from the admin, which starts when the admin logs in to their account and selects to view the complaints, then views a specific complaint and checks the policies to see if the complaint violates the policies or not, if it violates, then the admin applies a penalty to the establishment complained about, if no policy is violated, the complaint gets canceled

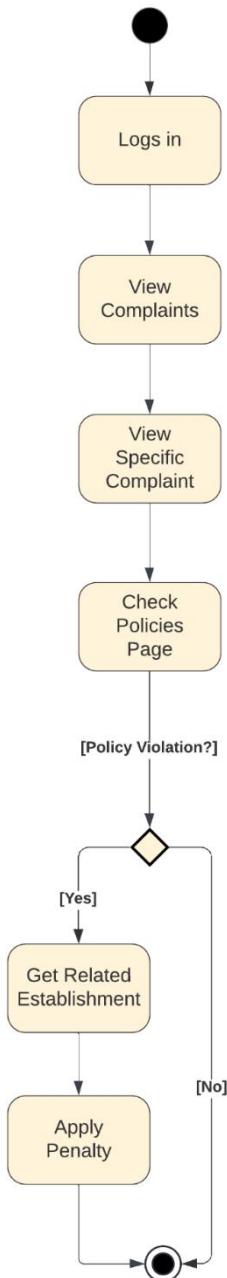


Figure 4.17 Activity Diagram 3

4.1.8 Sequence Diagram

The figure below Figure 4.18 shows the “Application Submission” Process, which starts when the user (retailer or supplier) submits their application to the system, then the admin reviews this specific application, and then the admin may accept the application or reject it and notify the user with the response.

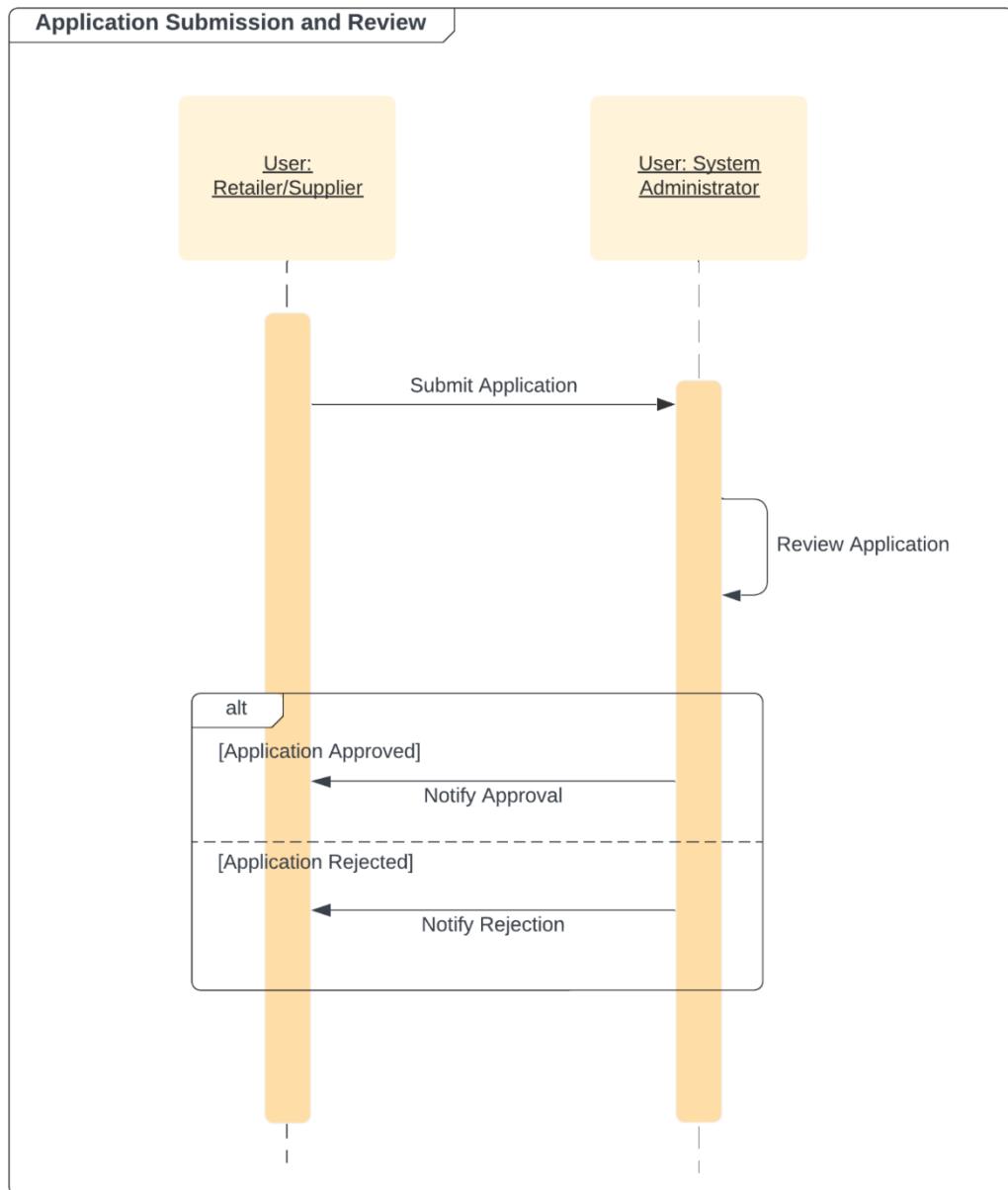


Figure 4.18 Sequence Diagram 1

The figure below Figure 4.19 shows the “Feedback Submission” Process, which starts when the retailer submits a feedback to the database about a specific supplier, the the database notifies the supplier that they received a feedback, the supplier retrieves the feedback from the database then the database shows it to the supplier.

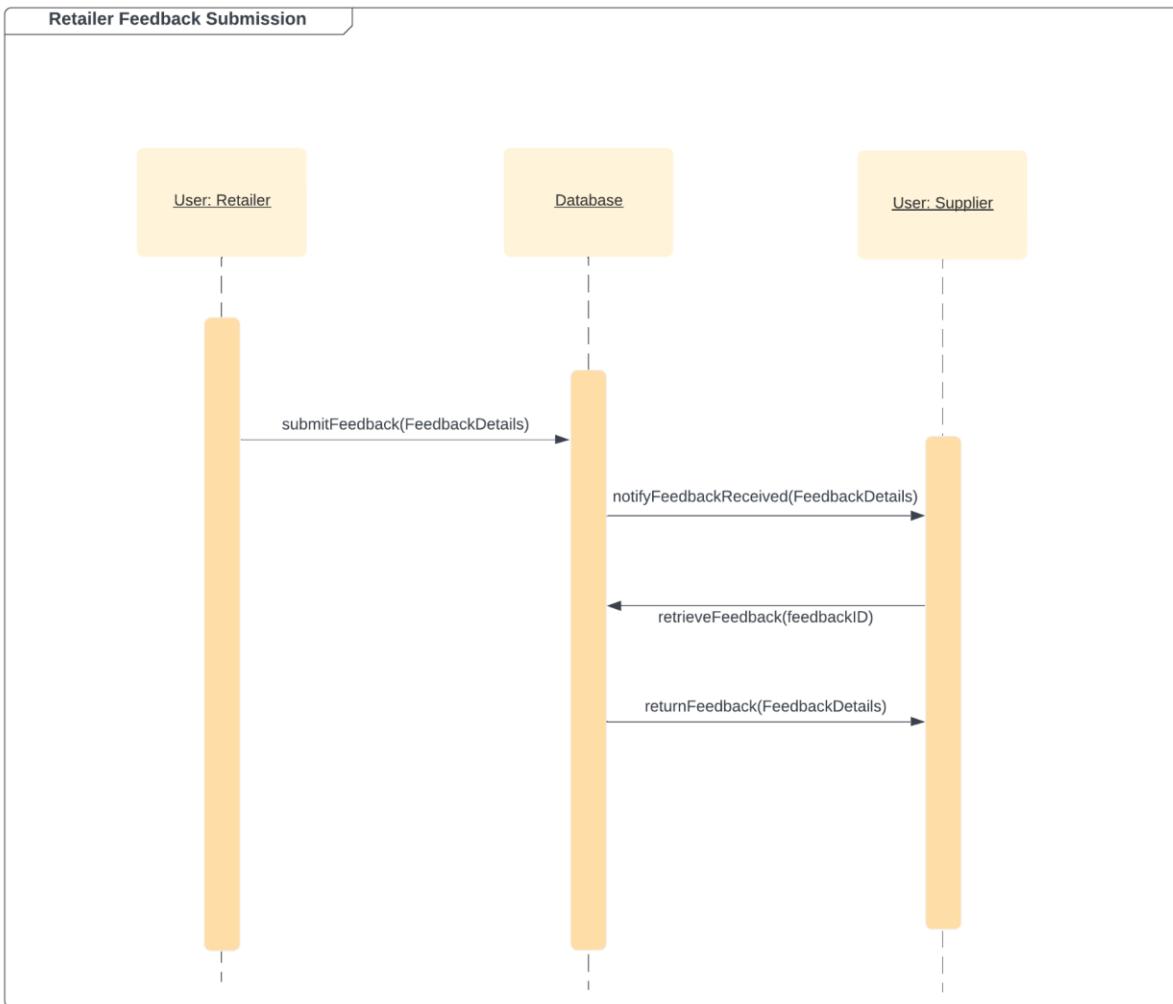


Figure 4.19 Sequence Diagram 2

4.1.9 State Transition Diagram

The figure below Figure 4.20 shows the state diagram for “Complaint status”, A complaint begins in the “Created” state and moves to “Under Review.” If the complaint violates policies, it changes to “Applied.” If it does not violate policies, it moves to “Unapplied.”

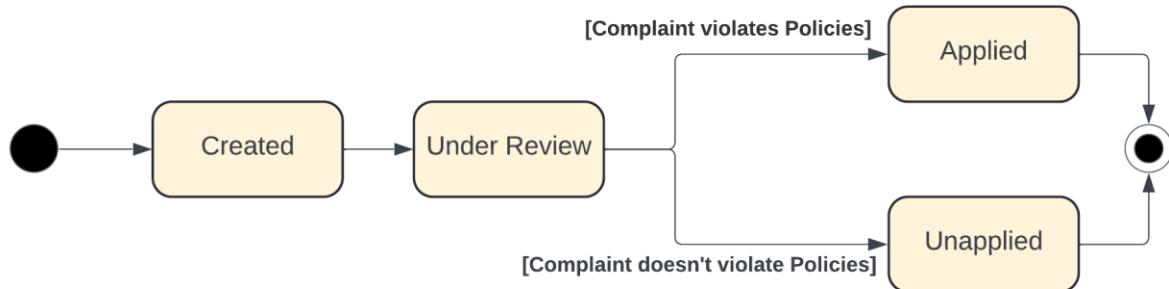


Figure 4.20 State Diagram 1

The figure below Figure 4.21 shows the state diagram for the “User status”, A user can be "Active", "Inactive" or "Banned". An account moves to "Inactive" if the user deactivates it, and can return to "Active", if reactivated. If a banning penalty is applied, the status changes to "Banned." An admin can lift the ban to return the account to "Active." If a user remains inactive for a long time after being banned, the account remains "Banned".

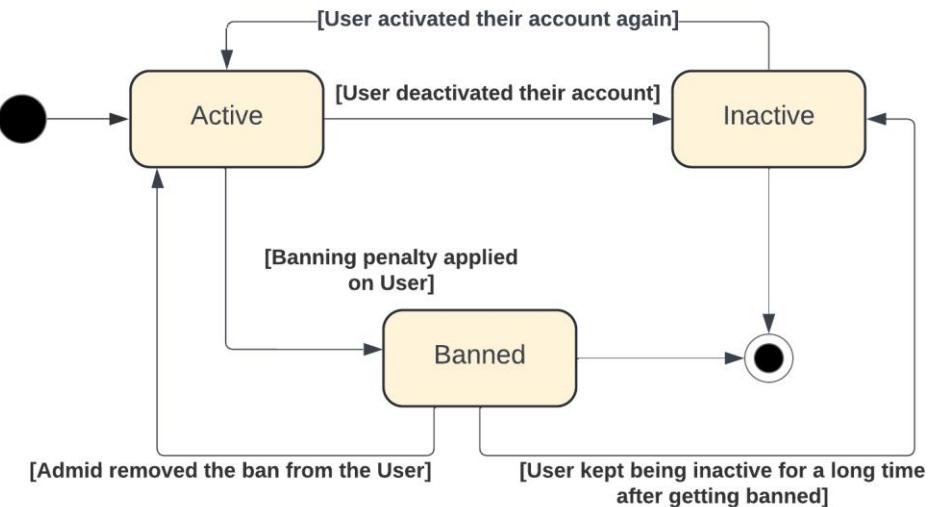


Figure 4.21 State Diagram2

4.2 Physical Model Design

4.2.1 Database Design

4.2.1.1 Database Entity Relationship Diagram

The figure below Figure 4.22 shows the ER diagram for BridgeLocal details a comprehensive data structure by defining various entities and their relationships within the system. The "User" entity is central and includes attributes like UserID, Username, Password, Email, Phone Number, DOB, Age, Full Name, StatusId, IsEmailVerified, and NationalNumber. Users can take on specific roles, such as Supplier, Retailer, or Administrator. This setup supports diverse functionalities by linking users to orders, quotations, products, reviews, analytics, establishments, inventory, penalties, and complaints.

The "Order" and "Quotation" entities are interconnected, with OrderID, RequestedDate, Quantity, TotalPrice, ShipToAddress, BillToAddress, and PaymentDetails attributes for orders, and QuotationID, RequestedDate, TotalPrice, and Status for quotations. The "Product" entity includes ProductID, Name, Description, Price, Image, Discount, and Status and is linked to inventory and categories. Additionally, the "Review" entity captures user feedback on products through attributes like ReviewID, Rating, Comment, and ReviewDate, demonstrating the system's capability to handle product reviews and analytics.

The "Establishment" entity encompasses EstablishmentID, Name, Description,TypeID, ContactNumber, WebsiteLink, Email, Address, OperatingHours, RegistrationDate, and LicenseNumber, and it owns the "Inventory" entity. Inventory management is detailed with attributes such as InventoryID, QuantityAvailable, and ReorderThreshold, which connect to the products. The system also addresses regulatory and operational compliance through entities like "Penalty" and "Complaint," which include PenaltyID, Notes, CreationDate, and Status for penalties, and ComplaintID, Notes, CreationDate, and Status for complaints.

Supporting entities like "EstablishmentStatus," "QuotationStatus," "ProductStatus," "PenaltyType," "ComplaintType," and "IndustryType" provide additional granularity in status tracking and categorization. Address attributes for establishments further include BuildingNumber, Street, City, Latitude, and Longitude. This ER diagram effectively maps out the intricate relationships and data flows within the BridgeLocal platform, illustrating how user management, order processing, product handling, review tracking, analytics, and establishment management are integrated to provide a robust system for local producers and retailers.

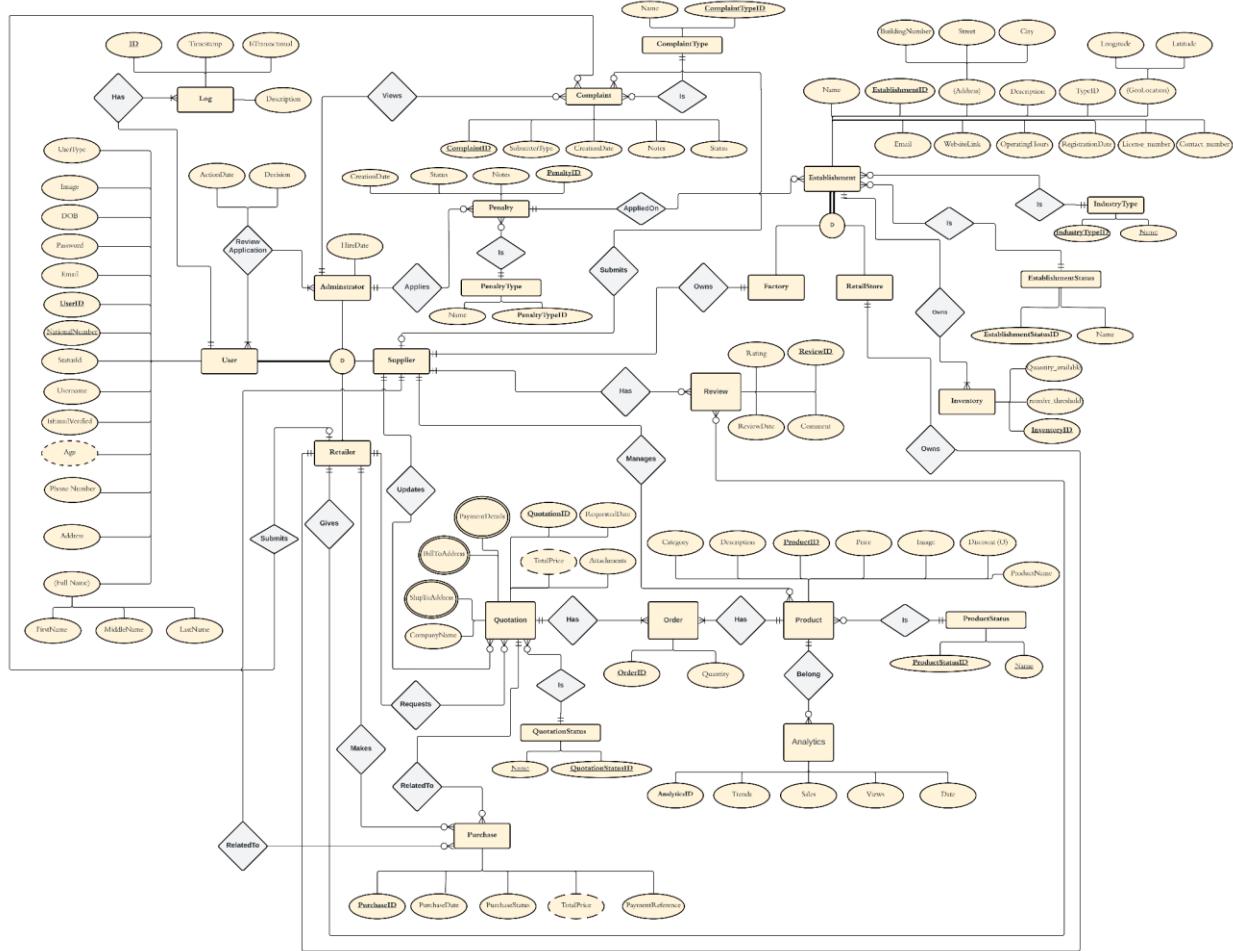


Figure 4.22 Entity Relationship Diagram

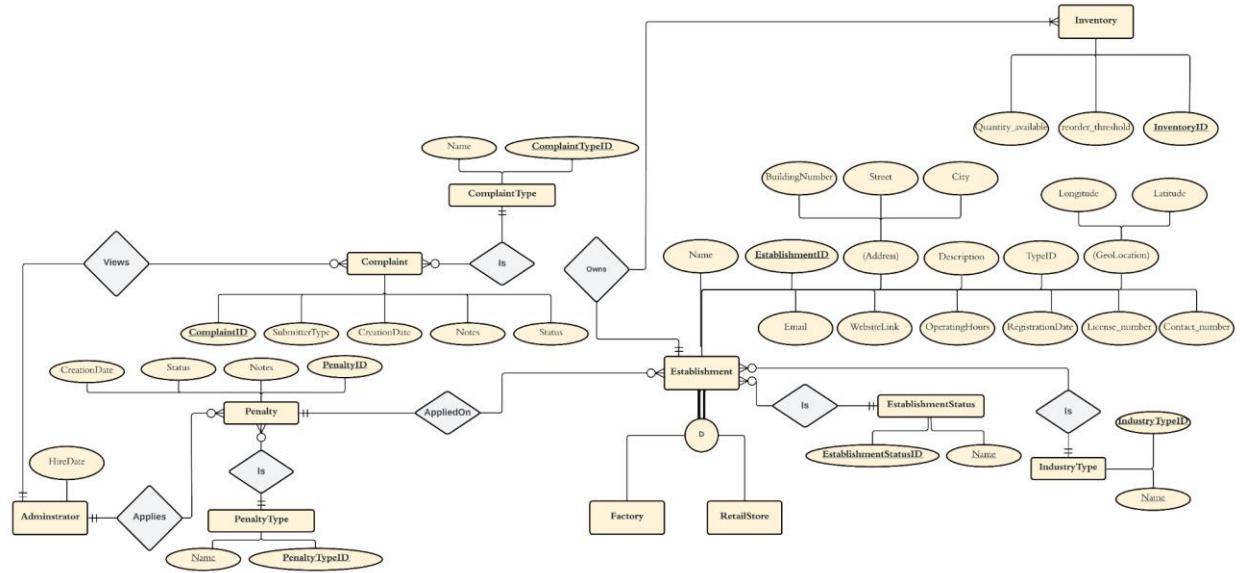


Figure 4.23 Entity Relationship Diagram - Part1

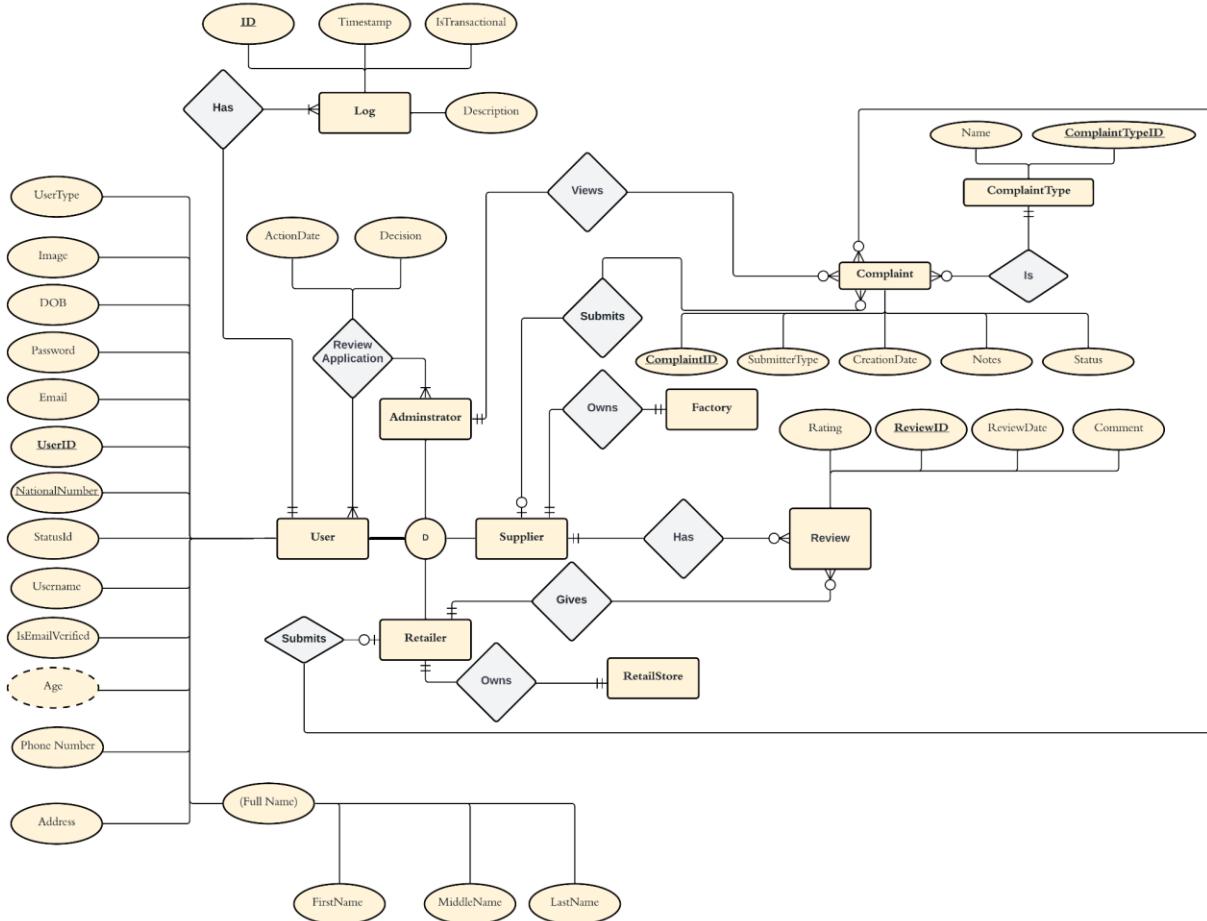


Figure 4.24 Entity Relationship Diagram - Part2

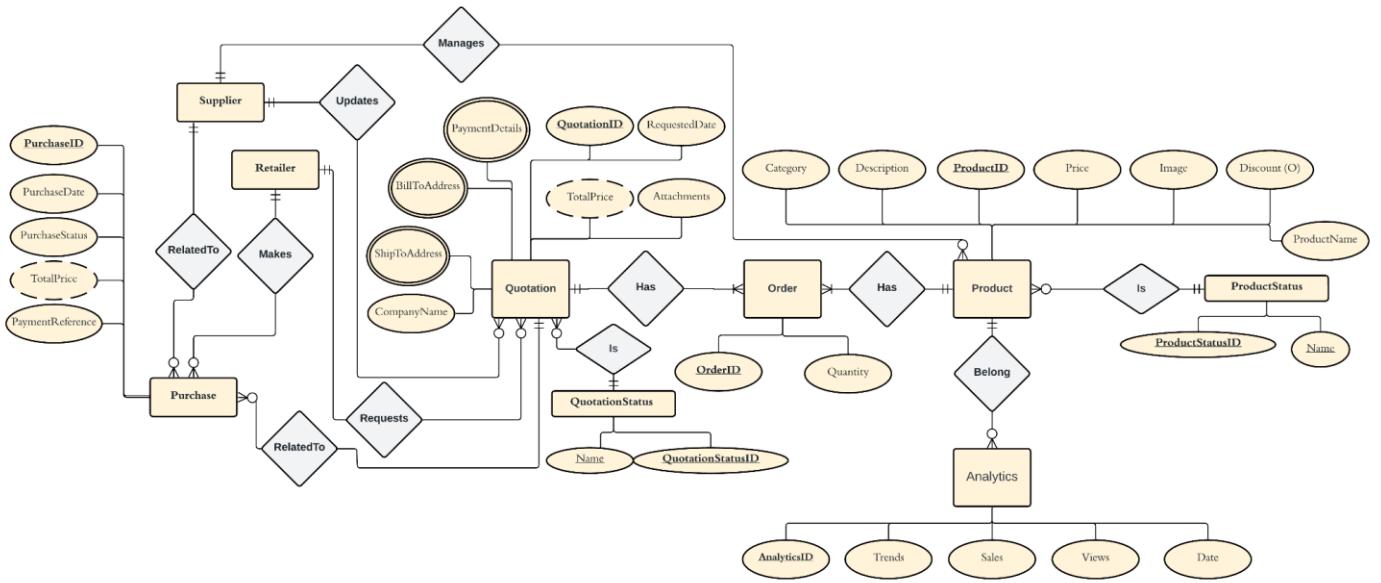


Figure 4.25 Entity Relationship Diagram - Part3

4.2.1.2 Database Schema

The figure below Figure 4.26 represents the database schema, there are 24 tables overall, and the diagram below illustrates the relationships between each table and also shows the attribute types to be employed.

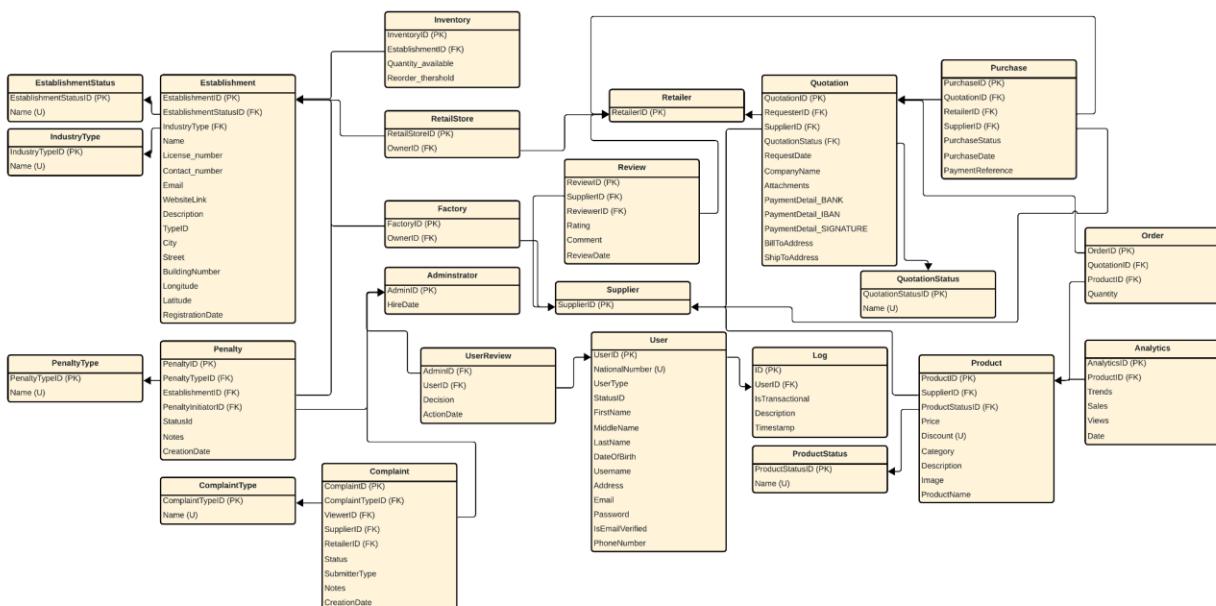


Figure 4.26 Relational Schema

4.2.2 User Interface Design

The following figures illustrate how the interface is expected to be. Our easy-to-use interface can be seen as part of our prototype where all the key elements are clear for the user to maximize the functionality of the system.

The figure 4.27 below shows the landing page of our website. A call to action button is included to take the user to the sign up page.



Figure 4.27 BridgeLocal - Landing Page

The figure 4.28 below shows the log in page of our website. A further call to action is added in case the user is not registered yet

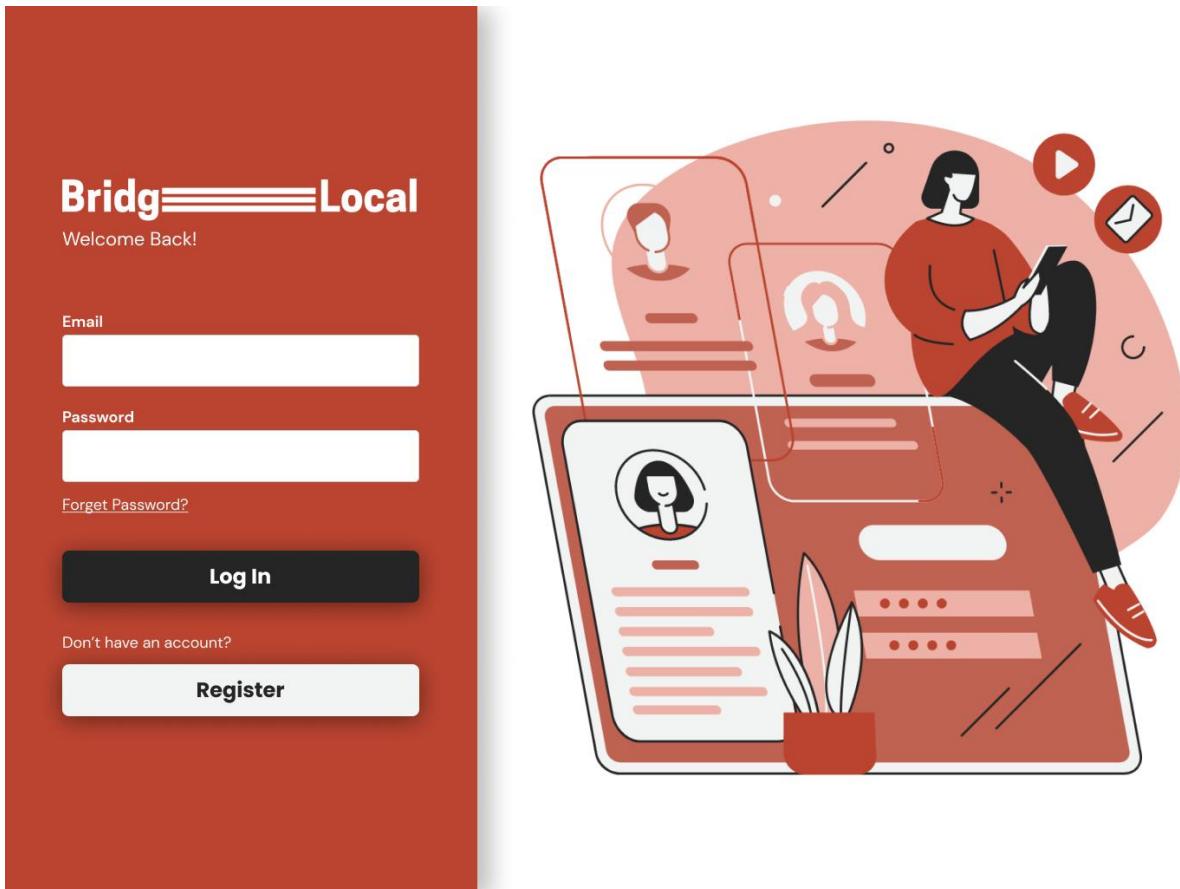


Figure 4.28 BridgeLocal – Log in Page

The figure 4.29 below shows the Retailer Dedicated Sign up page (1).

BridgLocal

Choose your Position:

Retailer Supplier

First Name Last Name

Company Email

Company Phone

Company Name

Password

I have read and agree to the [terms and conditions](#)

Continue

••••



Figure 4.29 BridgeLocal – Retailer Sign up Page (1)

The figure 4.30 below shows the Retailer Dedicated Sign up page (2).

Bridg Local

Set up your retailer account

Company Website

Company Address

City *

Street *

 Building No *

Company Description

Add brief description describing your company and what you resell *

Company Logo

Choose a file or drag & drop it here
JPEG, PNG, PDF, up to 18MB

Browse File

Continue

• • •



Figure 4.30 BridgeLocal – Retailer Sign up Page (2)

The figure 4.31 below shows the Retailer Dedicated Sign up page (3).

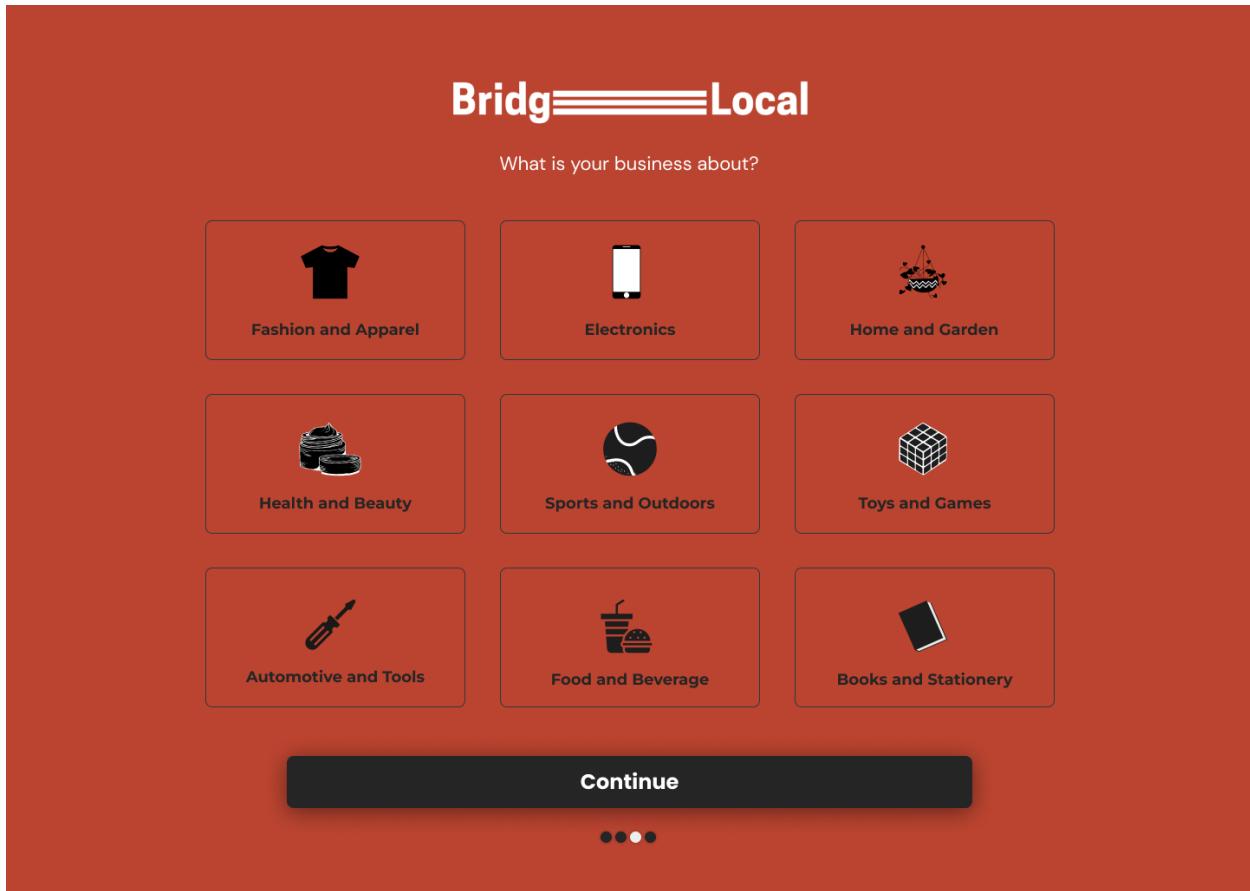


Figure 4.31 BridgeLocal – Retailer Sign up Page (3)

The figure 4.32 below shows the Supplier Dedicated Sign up page (1).

Bridg Local

Choose your Position:

Retailer **Supplier**

First Name Last Name

Company Email

Company Phone

Company Name

Password

I have read and agree to the [terms and conditions](#)

Continue

• • • •

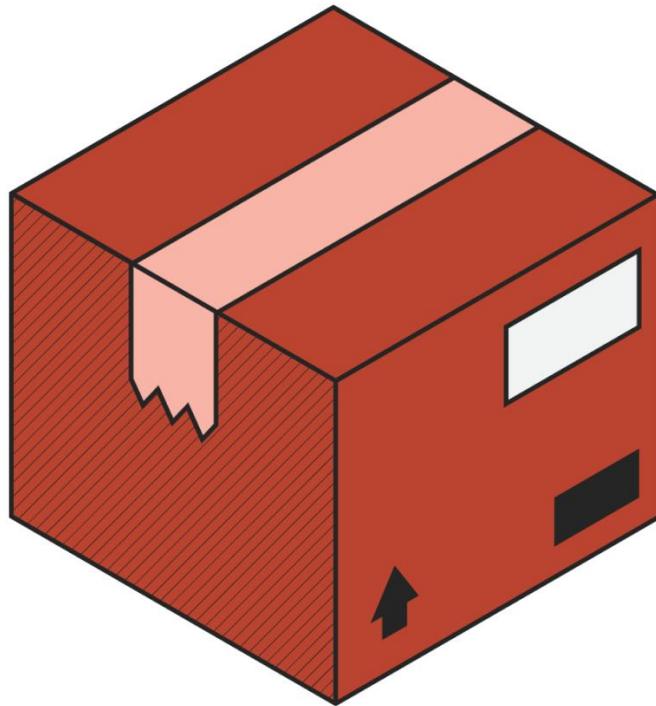


Figure 4.32 BridgeLocal – Supplier Sign up Page (1)

The figure 4.33 below shows the Supplier Dedicated Sign up page (2).

Bridg Local

Set up your supplier account

Company Website

Company Address

City *

Street *

 Building No *

Company Description

Add brief description describing your company and what you resell *

Company Logo

Choose a file or drag & drop it here
JPEG, PNG, PDF, up to 18MB

Browse File

Continue

• • •



Figure 4.33 BridgeLocal – Supplier Sign up Page (2)

The figure 4.34 below shows the Retailer Dedicated Sign up page (3).

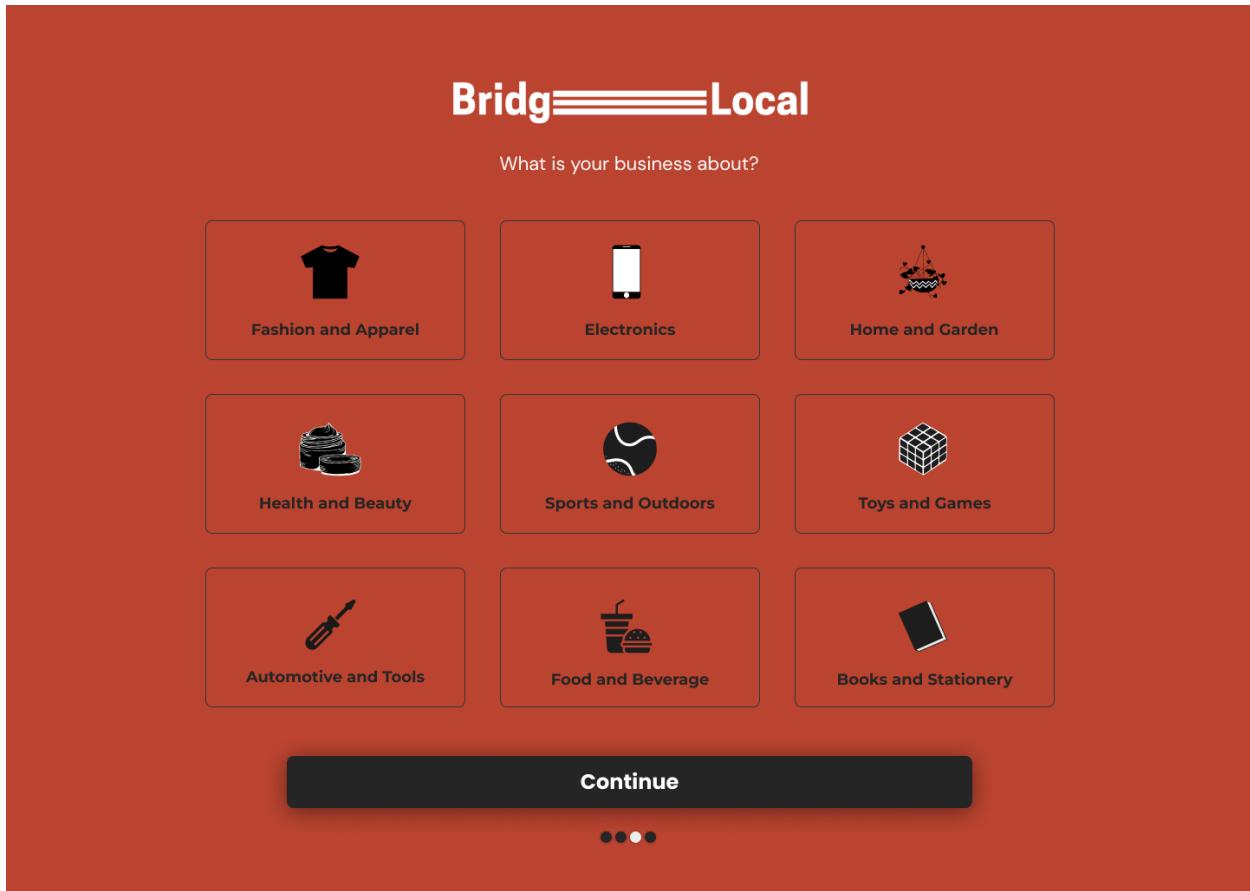


Figure 4.34 BridgeLocal – Supplier Sign up Page (3)

The figure 4.35 below shows the Administrator Dedicated Sign up page.

Bridg Local

Fill your info please!

First Name Last Name

Email

Phone

Password

I have read and agree to the [terms and conditions](#)

Sign Up

A cartoon illustration of a person with dark hair, wearing a red jacket over an orange shirt, holding a white document with black bars. A speech bubble above them contains a pie chart and a bar chart.

Figure 4.35 BridgeLocal – Administrator Sign up Page

The figures 4.36 and 4.37 below shows the User Management Administrator Pages.

The screenshot displays the 'Users' section of the BridgeLocal administrator interface. At the top, there's a red header bar with the 'BridgeLocal' logo and navigation links for 'Dashboard', 'Users', 'Applications', and 'Complaints'. On the right side of the header are two icons: a gear and a user profile. Below the header, the word 'Users' is prominently displayed in large, bold, black font. To the right of this, a red button labeled 'Add User' is visible. The main content area contains four user entries, each enclosed in a light gray rounded rectangle. Each entry includes a small icon representing the user type (e.g., a storefront for Retailer), the user ID ('#5111' through '#5108'), the user name ('Retailer 1' through 'Supplier 2'), and 'Edit' and 'Delete' buttons. The user names correspond to the icons: 'Retailer 1' has a storefront icon, 'Supplier 1' has a yellow bird icon, 'Retailer 2' has a blue airplane icon, and 'Supplier 2' has an orange flower icon.

User ID	User Name	Action
#5111	Retailer 1	Edit Delete
#5110	Supplier 1	Edit Delete
#5109	Retailer 2	Edit Delete
#5108	Supplier 2	Edit Delete

Figure 4.36 BridgeLocal – Administrator User Management Page (1)



Applications

#5111		Retailer 1	View	Under Review
#5110		Supplier 1	View	Approved
#5109		Retailer 2	View	Approved
#5108		Supplier 2	View	Rejected

Figure 4.37 BridgeLocal – Administrator User Management Page (2)

The figure 4.38 below shows the Complaints Management Administrator Page.

The screenshot displays the 'Complaints' section of the BridgeLocal application. At the top, there is a red header bar with the 'BridgeLocal' logo and navigation links for 'Dashboard', 'Users', 'Applications', and 'Complaints'. To the right of these links are icons for settings and user profile. Below the header, the word 'Complaints' is centered in a large, bold, black font. The main content area contains two complaint entries, each enclosed in a light gray rounded rectangle. The first entry is for 'Complaint Title #5111' submitted on 'April 12, 2024'. It has a 'View' link and a red 'Under Review' button. The second entry is for 'Complaint Title #5110' submitted on 'April 12, 2024'. It has a 'View' link and a gray 'Submitted' button.

Complaint ID	Complaint Title	Date Submitted	Status
#5111	Complaint Title	April 12, 2024	View Under Review
#5110	Complaint Title	April 12, 2024	View Submitted

Figure 4.38 BridgeLocal – Complaints Management Page

The figure 4.39 below shows the Dashboard Administrator Page.

The screenshot displays the BridgeLocal administrator dashboard. At the top, there is a red header bar with the 'BridgeLocal' logo on the left and navigation links for 'Dashboard', 'Users', 'Applications', and 'Complaints' on the right. To the far right of the header are two icons: a gear for settings and a user profile. Below the header, a large 'Welcome, Admin!' message is centered, followed by a sub-instruction 'Complete your profile information'. Three main management sections are presented in a grid:

- Manage Profile**: Features a user icon, the text 'Manage Profile', a sub-instruction 'Complete your profile information', and a red 'Manage' button.
- Manage Complaints**: Features a storefront icon, the text 'Manage Complaints', a sub-instruction 'Edit / Update information', and a red 'Manage' button.
- Manage Penalties**: Features a speech bubble icon with a question mark, the text 'Manage Penalties', a sub-instruction 'See and manage your quotations', and a red 'Manage' button.

Figure 4.39 BridgeLocal – Administrator Dashboard Page

The figure 4.40 below shows the Marketplace Retailer Page (1).

Bridg=Local Dashboard Marketplace Manage Quotations Complaints

Favorites 0

Search  Search Filter



Yogurt
Food company

 View  Favorites



Ketchup
Food company

 View  Favorites



Rice
Food company

 View  Favorites



Mustard
Food company

 View  Favorites



Kidney beans
Food company

 View  Favorites



Sugar
Food company

 View  Favorites



Sardines
Food company

 View  Favorites



Green Beans
Organic Product

 View  Favorites

Figure 4.40 BridgeLocal – Marketplace Retailer View (1)

The figure 4.41 below shows the Marketplace Retailer Page (2).

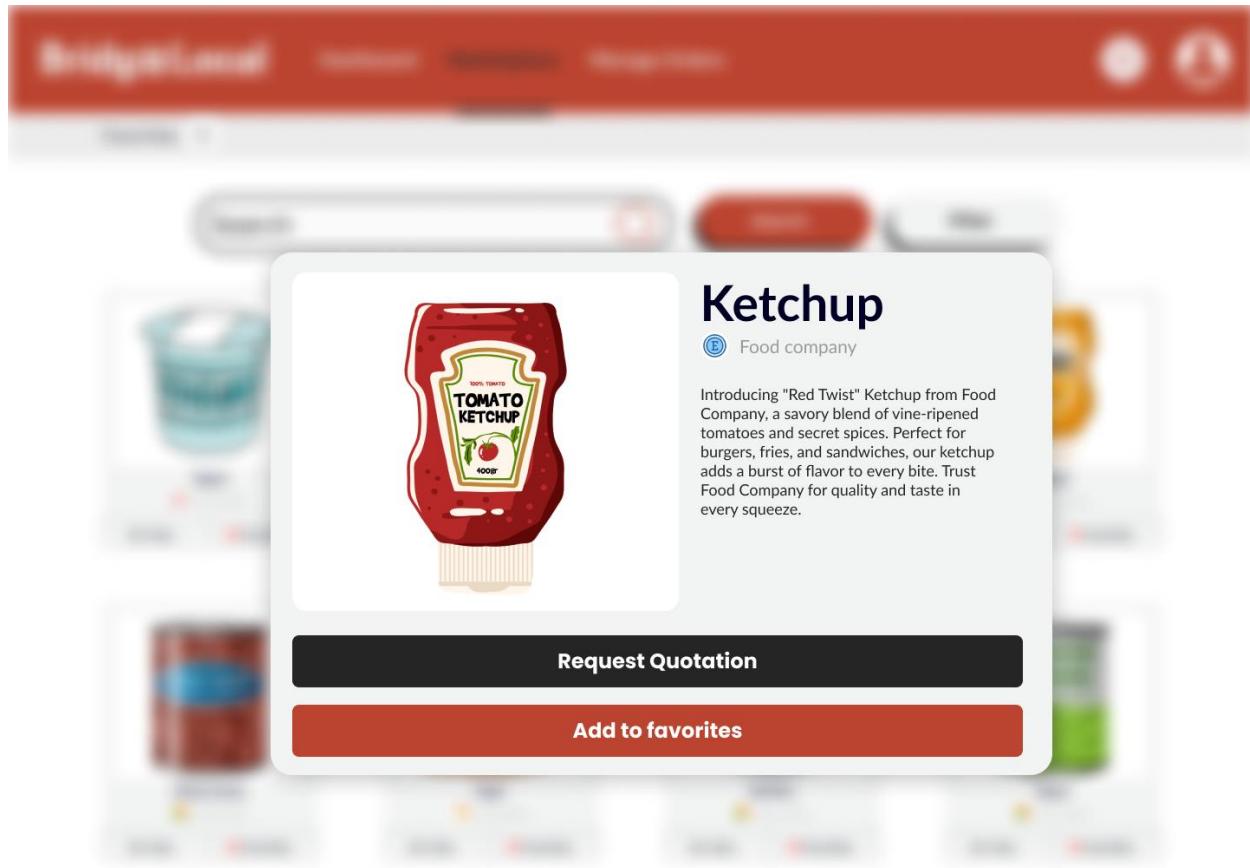


Figure 4.41 BridgeLocal – Marketplace Retailer View (2)

The figure 4.42 below shows the Retailer Related Page (1).

Welcome, Retailer!

Complete your profile information

Logo

Manage Profile

Complete your profile information

Manage

Manage Establishment

Edit / Update information

Manage

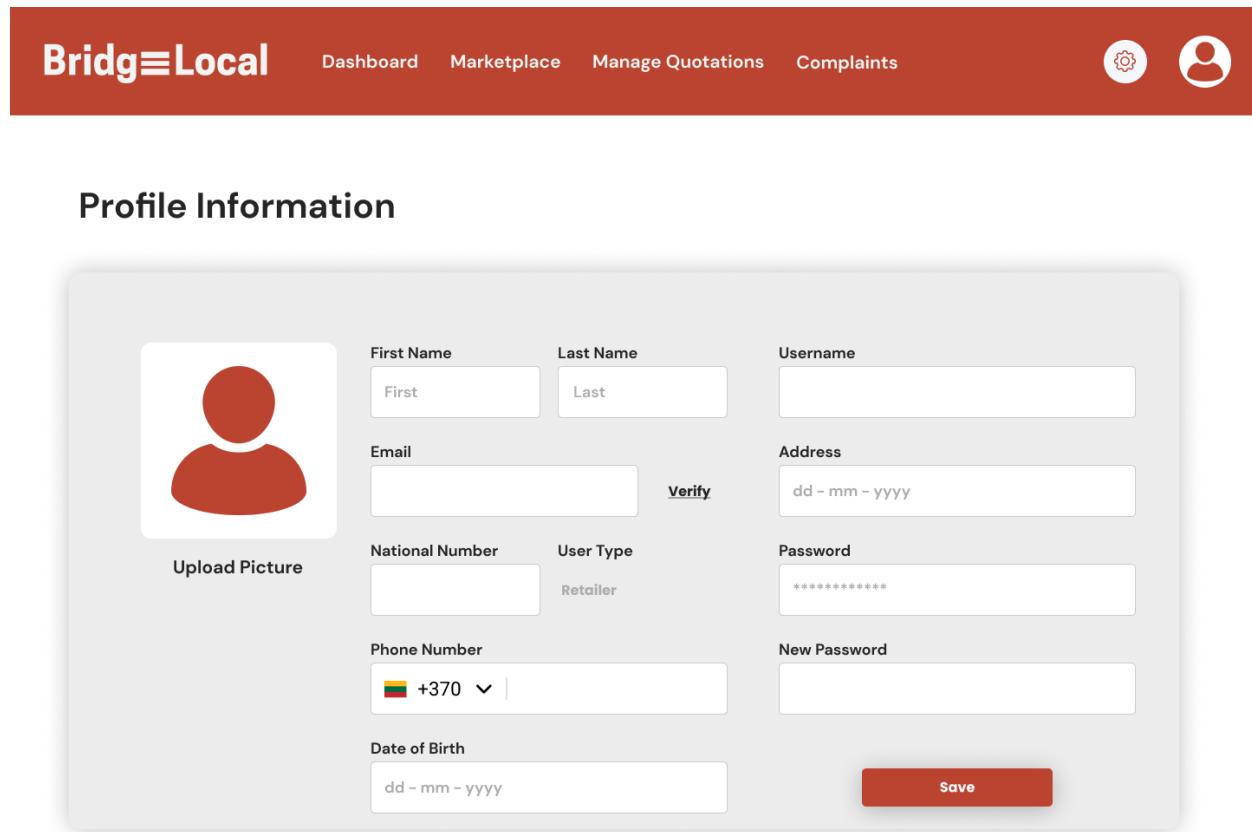
Manage Quotations

See and manage your quotations

Manage

Figure 4.42 BridgeLocal – Retailer Related Page (1)

The figure 4.43 below shows the Retailer Related Page (2).



The screenshot shows the 'Profile Information' page of the BridgeLocal application. At the top, there is a red header bar with the 'BridgeLocal' logo on the left and navigation links for 'Dashboard', 'Marketplace', 'Manage Quotations', and 'Complaints'. On the right side of the header are two icons: a gear for settings and a user profile.

The main content area has a light gray background and is titled 'Profile Information'. On the left, there is a placeholder for a profile picture with the text 'Upload Picture' below it. The form fields are arranged in a grid:

First Name	Last Name	Username
<input type="text" value="First"/>	<input type="text" value="Last"/>	<input type="text"/>
Email	Verify	Address
<input type="text"/>	Verify	<input type="text" value="dd - mm - yyyy"/>
National Number	User Type	Password
<input type="text"/>	Retailer	<input type="text" value="*****"/>
Phone Number	New Password	
<input type="text" value="+370"/> +370	<input type="text"/>	
Date of Birth	Save	
<input type="text" value="dd - mm - yyyy"/>	Save	

Figure 4.43 BridgeLocal – Retailer Related Page (2)

The figure 4.44 below shows the Retailer Related Page (3).

The screenshot displays the BridgeLocal platform's Complaints section. At the top, there is a navigation bar with the BridgeLocal logo and links for Dashboard, Marketplace, Manage Quotations, and Complaints. To the right of the navigation are user icons for settings and profile.

The main area is titled "Complaints" and features a red "Add New" button. Below this, two complaints are listed in a card format:

- #5111** Complaint Title April 12, 2024 [View](#) Under Review
- #5110** Complaint Title April 12, 2024 [View](#) Reviewed

Figure 4.44 BridgeLocal – Retailer Related Page (3)

The figure 4.45 below shows the Retailer Related Page (4).

The screenshot displays the BridgeLocal Retailer Related Page (4). At the top, there is a red header bar with the BridgeLocal logo on the left and navigation links for Dashboard, Marketplace, Manage Quotations, and Complaints. On the right side of the header are icons for settings and user profile.

The main content area shows a shopping cart with two items:

- Ketchup**: An image of a ketchup bottle, quantity 500, plus/minus buttons, price "Price to be determined", and a "Delete" button.
- Masturd**: An image of a mustard bottle, quantity 200, plus/minus buttons, price "Price to be determined", and a "Delete" button.

At the bottom left of the cart area is a "Proceed to checkout" button. Above the cart area, there is a "Continue shopping" button.

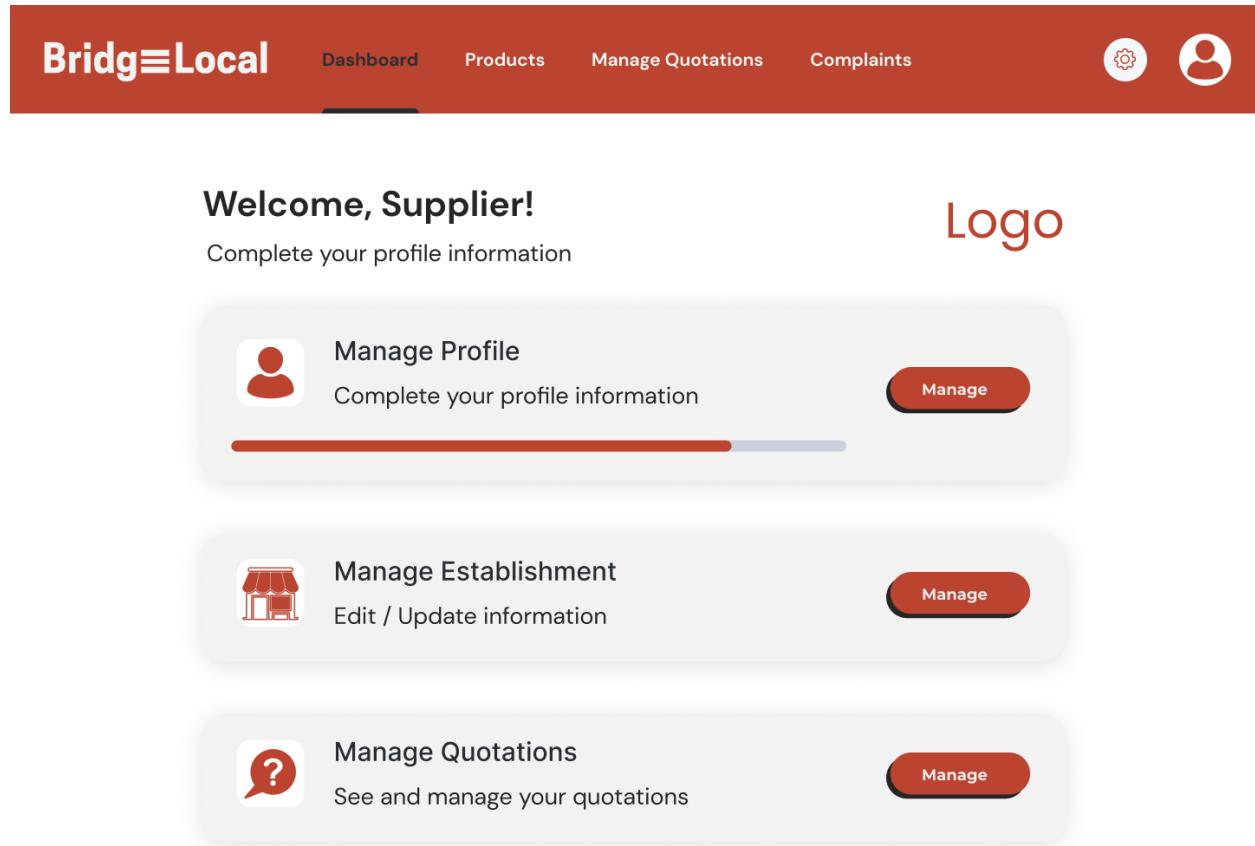
Figure 4.45 BridgeLocal – Retailer Related Page (4)

The figure 4.46 below shows the Retailer Related Page (5).

The screenshot displays the BridgeLocal Retailer Related Page (5). At the top, there is a red header bar with the BridgeLocal logo on the left and navigation links for Dashboard, Marketplace, Manage Quotations, and Complaints. On the right side of the header are two icons: a gear and a user profile. Below the header, the page title "Quotations" is centered. The main content area contains two quotation cards. The first card, for quotation #511192, is associated with a company named "Food Company". It features a blue circular icon with a white letter "E". To the left of the icon is the quotation number "#511192". To the right of the icon are two buttons: "View Quotation" and "Requested Quotation". The second card, for quotation #511191, also has a blue circular icon with a white letter "E" and is associated with "Food Company". It shows the quotation number "#511191" to the left of the icon. To the right of the icon are two buttons: "View Quotation" and "Accepted Quotation".

Figure 4.46 BridgeLocal – Retailer Related Page (5)

The figure 4.47 below shows the Supplier Related Page (1).



The screenshot displays the 'Supplier Related Page (1)' for BridgeLocal. At the top, there is a red header bar with the 'BridgeLocal' logo on the left and navigation links for 'Dashboard', 'Products', 'Manage Quotations', and 'Complaints'. On the right side of the header are two icons: a gear and a user profile.

The main content area has a light gray background. It features a large 'Welcome, Supplier!' message at the top left, followed by a placeholder text 'Complete your profile information' and a 'Manage Profile' button with a person icon.

Below this, there are three rounded rectangular cards, each containing a title, a small icon, a brief description, and a 'Manage' button:

- Manage Profile**: Accompanied by a person icon. Description: 'Complete your profile information'. Button: 'Manage'.
- Manage Establishment**: Accompanied by a storefront icon. Description: 'Edit / Update information'. Button: 'Manage'.
- Manage Quotations**: Accompanied by a speech bubble icon. Description: 'See and manage your quotations'. Button: 'Manage'.

A red 'Logo' watermark is visible across the entire page.

Figure 4.47 BridgeLocal – Supplier Related Page (1)

The figure 4.48 below shows the Supplier Related Page (2).

Bridg≡Local Dashboard Products Manage Quotations Complaints  

Products

Add Product

#5111		Ketchup	Edit	Delete
#5110		Mustard	Edit	Delete
#5109		Sugar	Edit	Delete
#5108		Yogurt	Edit	Delete

Figure 4.48 BridgeLocal – Supplier Related Page (2)

The figure 4.49 below shows the Supplier Related Page (3).

Bridg=Local Dashboard Products Manage Quotations Complaints  

Edit Product

Product Name

Product Description

Product Price
0 ▲ ▼

Product Category



Figure 4.49 BridgeLocal – Supplier Related Page (3)

The figure 4.50 below shows the Supplier Related Page (4).

The screenshot displays the BridgeLocal Supplier Related Page (4). At the top, there is a red header bar with the logo "BridgeLocal" on the left and navigation links "Dashboard", "Products", "Manage Quotations", and "Complaints" on the right. To the far right of the header are two icons: a gear and a user profile.

The main content area is titled "Quotations". It lists two entries:

- Retailer 1**: Quotation number #511192. It includes a small icon of a storefront, a "View Quotation" link, and a "Pending Response" button.
- Retailer 2**: Quotation number #511191. It includes a small icon of a delivery truck, a "View Quotation" link, and a "Respond" button.

Figure 4.50 BridgeLocal – Supplier Related Page (4)

The figure 4.51 below shows the Supplier Related Page (5).

BridgLocal Dashboard Products Manage Quotations Complaints  

Quotation #511192

	Ketchup	⊖ 500 ⊕	1.5JOD	Set Price
	Masturd	⊖ 200 ⊕	1.2JOD	Set Price

[Accept Quotation](#) [Reject Quotation](#)

Figure 4.51 BridgeLocal – Supplier Related Page (5)

The figure 4.52 below shows the Supplier Related Page (6).

The screenshot displays the 'Complaints' section of the BridgeLocal application. At the top, there is a navigation bar with links for Dashboard, Products, Manage Quotations, and Complaints. To the right of these links are two icons: a gear and a user profile. Below the navigation bar, the title 'Complaints' is centered, with a red 'Add New' button to its right. The main content area shows two complaints listed in a card format. Each card contains the complaint ID (#5111 or #5110), the title, the date (April 12, 2024), and two buttons: 'View' and 'Under Review' (for #5111) or 'Reviewed' (for #5110). The cards have a slight shadow effect.

#	Complaint Title	Date	Status
#5111	Complaint Title	April 12, 2024	View Under Review
#5110	Complaint Title	April 12, 2024	View Reviewed

Figure 4.52 BridgeLocal – Supplier Related Page (6)

Full Prototype can be found using this link:

<https://www.figma.com/design/rp0D6geguhIh2vxRiAOzk5/BridgeLocal-UI?node-id=0%3A1&t=EplDOmjK6LQhhzY-1>

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<https://www.faire.com/>

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Appendix

To assess the viability of our project we conducted surveys targeting both suppliers and the general audience. The feedback from these surveys provided important insights into the challenges faced by local producers and the market demand for locally produced goods. Suppliers highlighted the need for better market access and visibility while the general audience expressed strong interest in supporting local products. These results confirm the potential impact of BridgeLocal in bridging the gap between local producers and retailers and enhancing market accessibility and fostering local economic growth.

Local Supplier Results:

What are the biggest challenges you face in reaching retailers?

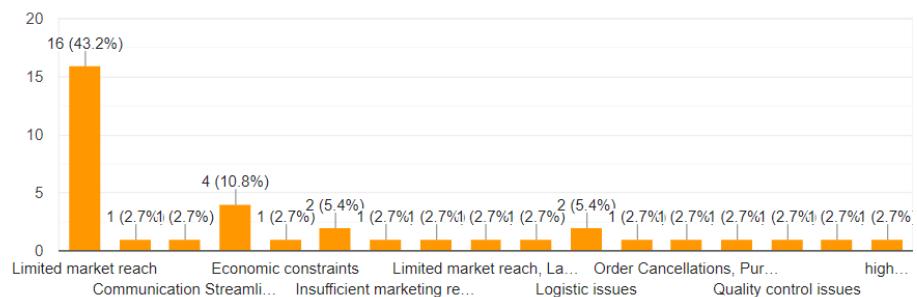


Figure A.1 Local Supplier Results

What are the key features you look for in a platform to promote and sell your products?



Figure A.2 Local Supplier Results

How important is direct communication with retailers to your business?

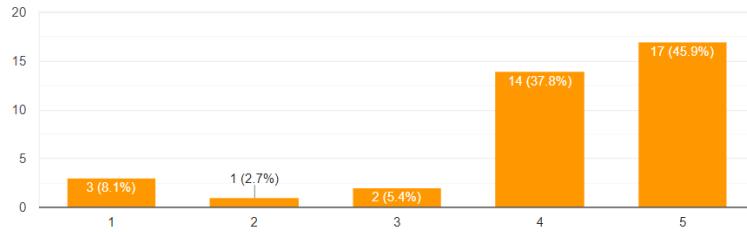


Figure A.3 Local Supplier Results

Do you face difficulties keeping track of your product's performance and getting feedback from retailers?

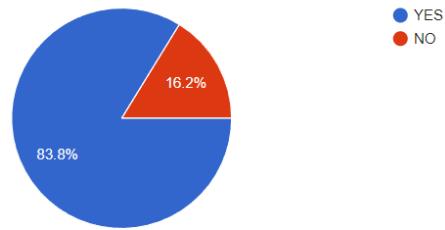


Figure A.4 Local Supplier Results

Do you frequently face problems that act as a barrier between your products and the local market?

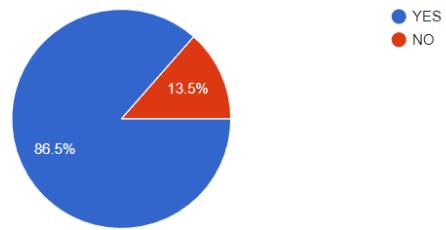


Figure A.5 Local Supplier Results

General Audience Results:

Do you believe that a digital platform connecting local manufacturers and retailers could positively impact the local economy?

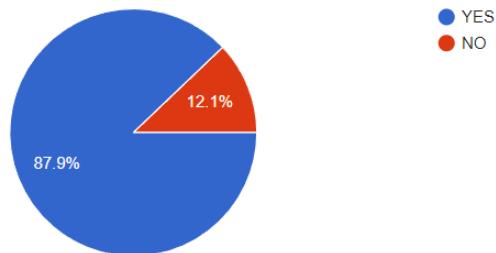


Figure A.6 General Audience Results

Do you find it challenging to discover high-quality local products through your current shopping methods?

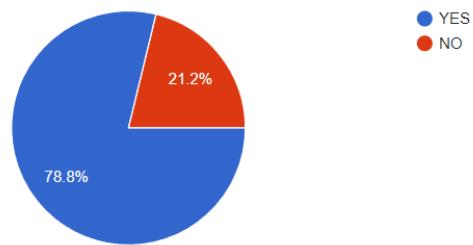


Figure A.7 General Audience Results