APP BASED SOLUTION FOR MICRO AND SMALL ENTERPRICES

A Mini Project Report Submitted
In partial fulfillment of the requirement for the award of the degree of

Bachelor of Technology
In
Artificial Intelligence and data science

by

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2020-2024

DECLARATION

I hereby declare that the project entitled **"APP BASED SOLUTION FOR MICRO AND SMALL ENTERPRICES"** submitted to **Malla Reddy College of Engineering and Technology,** affiliated t**o** Jawaharlal Nehru Technological University Hyderabad (JNTUH) for the award of the degree of **Bachelor of Technology** in **Artificial Intelligence and Data Science** is a result of original research work done by me and my team.

It is further declared that the project report or any part thereof has not been previously submitted to any University or Institute for the award of degree or diploma.

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CERTIFICATE

This is to certify that this is the bonafide record of the project titled **"APP BASED SOLUTION FOR MICRO AND LARGE ENTERPRICES"** submitted by **G.GANESH(21N31A7221), B.KISHORE (21N31A7205), G.SANTOSH(21N31A7224)** of B.Tech in the partial fulfillment of the requirements for the degree of **Bachelor of Technology** in **Artificial Intelligence and Data Science**, Dept. of CI during the year 2023-2024. The results embodied in this project report have not been submitted to any other university or institute for the award of any degree or diploma.

Dr. Thota Siva Ratna Sai
Asst. Professor
INTERNAL GUIDE

Dr. D. Sujatha
HEAD OF THE DEPARTMENT

EXTERNAL EXAMINER

ACKNOWLEDGEMENT

We feel honored and privileged to place our warm salutation to our college Malla Reddy College of Engineering and technology (UGC-Autonomous), our Director ***Dr. VSK Reddy*** who gave us the opportunity to have experience in engineering and profound technical knowledge.

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By

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ABSTRACT

This challenge focuses on enhancing the market presence and operations of micro and small enterprises (MSEs), which are vital components of local economies. MSEs often face limitations in resources and technology, hampering their growth potential. The solution involves the development of a user-friendly mobile app platform to empower MSEs. The app aims to facilitate direct interactions with customers, streamline logistics, ensure secure transactions, offer data insights, and provide resources for capacity building. It prioritizes scalability, regional adaptability, and data security, with the ultimate goal of revolutionizing MSE operations, fostering growth, resilience, and increased economic contributions to local communities.By addressing these critical aspects, this initiative seeks to unlock the potential of MSEs, enabling them to overcome barriers and significantly contribute to local economies, ultimately transforming the way they operate and interact with larger markets.

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1. INTRODUCTION

1.1 Purpose:

Empower micro and small enterprises by providing them with a robust and user-friendly app-based platform that facilitates market access. The platform serves as a centralized marketplace, connecting these businesses with potential customers, enabling them to showcase their products and services. Through features such as user-friendly interfaces, secure payment processing, and effective communication channels, the project aims to enhance the visibility, accessibility, and overall competitiveness of micro and small enterprises in the market.

1.2 Background of project:

The background of the "App based solution for micro and small enterprises" project originates from a recognition of the challenges faced by micro and small enterprises in accessing markets effectively. Small businesses often encounter obstacles in reaching a wider customer base, limiting their growth potential. The project's background is rooted in the vision of creating a transformative app-based solution that serves as a centralized marketplace, empowering micro and small enterprises to showcase their offerings, engage with customers, and conduct secure transactions. By leveraging mobile technology, the project aims to break down traditional barriers, providing a platform that not only enhances market access for businesses but also contributes to local economic development by fostering entrepreneurship and supporting the growth of small enterprises.

1.3 Scope of project:

The "App based solution for micro and small enterprises" project encompasses the development and implementation of a comprehensive app-based solution designed to facilitate market access for micro and small enterprises (MSEs). The platform will include user-friendly mobile and web applications, a secure API gateway, and robust backend services to enable MSEs to showcase their products and services. Key features will include vendor onboarding and verification, detailed product/service listings, secure payment processing, customer reviews, and effective communication channels. The scope extends to the integration of geolocation services, analytics tools, and community-building features. The project aims to not only provide a marketplace for MSEs but also foster a supportive ecosystem that promotes local economic growth and entrepreneurship. Continuous scalability, data security, and a focus on user experience will be integral elements within the project's scope.

1.4 Project Features:

The "EmergencyAssist" project incorporates a variety of features to address the diverse needs of users during vehicle-related emergencies. Key features include:

User-Friendly Mobile and Web Applications: Develop intuitive and responsive interfaces for both mobile and web platforms, ensuring a seamless user experience.
Vendor Onboarding and Verification: Enable easy registration for vendors, with options for profile verification to build trust and credibility among users.
Product/Service Listings: Allow vendors to create and manage detailed listings, including high-quality images, descriptions, pricing, and availability status.
Advanced Search and Filters: Implement robust search and filtering features to help users find products or services based on specific criteria such as location, category, price range, and ratings.
Geolocation Integration: Incorporate geolocation services and interactive maps to assist users in discovering local businesses and services.
Secure Payment Processing: Implement a secure payment gateway that supports multiple payment methods, ensuring the safety of financial transactions.
In-App Messaging: Include an in-app messaging system that facilitates direct communication between vendors and customers for inquiries, order updates, and personalized service.
Customer Support: Provide various channels for customer support, including chat, email, or a knowledge base to assist users and vendors with inquiries or issues.
Data Privacy and Security: Prioritize data security and user privacy, ensuring that user data is protected and complies with data protection regulations

2.SYSTEM REQUIREMENTS

2.1 Hardware Requirements:

Development Machines
Server Infrastructure
Mobile Devices for Testing
Backup and Redundancy
Load Balancers
Security Equipment
Database servers
Development workstations

2.2 Software requirements:

Operating System
Development Tools
Programming Languages
Database Management System
API Development Tools
Cloud Services
Security Tools
Analytics and Monitoring Tools

2.3 Existing System:

Amazon:

- **E-commerce Giant:** Amazon is one of the world's largest online marketplaces, offering a vast range of products from various sellers. Sellers create product listings, including detailed descriptions, images, and pricing. Buyers can browse through these listings, add items to their cart, and make purchases. While Amazon primarily operates on a traditional e-commerce model where users buy products directly, it does support third-party sellers who list their products on the platform. Amazon uses a sophisticated recommendation system based on user behavior and preferences to suggest products to customers.

Big Basket:

- **Online Grocery Delivery:** Big Basket is an online grocery delivery platform that focuses on providing users with a convenient way to order groceries and household essentials. Users can browse through a wide range of grocery items, add them to their cart, and schedule delivery. Big Basket primarily operates on a "buy and deliver" model, where customers purchase items, and the platform handles the delivery logistics. The platform integrates local and regional sellers to fulfill orders.

2.3.1 Drawbacks of existing system:

- **Amazon:**

Amazon operates on a traditional retail model where users buy products directly, and the platform may not inherently facilitate direct exchanges or barter-based transactions. The sheer size and diversity of Amazon's marketplace can lead to challenges in ensuring the authenticity and quality of products, with occasional instances of customers receiving items that differ from their expectations. Furthermore, the competitive pricing pressure on Amazon can be a disadvantage for small sellers trying to establish themselves, impacting profit margins.

- **BigBasket:**

This model may not inherently support the direct exchange or barter of products based on user-posted requirements, limiting its applicability to the proposed project's unique concept. Additionally, the platform's focus on grocery items may restrict its versatility compared to a project aiming to facilitate exchanges across a broader range of products.

2.4 Proposed System:

4. SYSTEM DESIGN

4.1 System Architecture

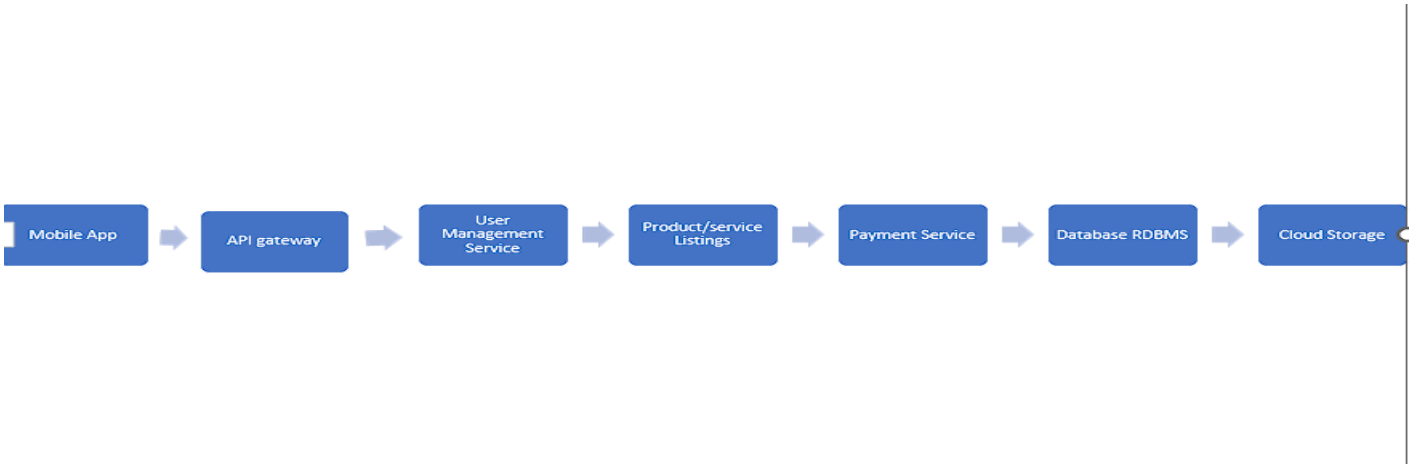
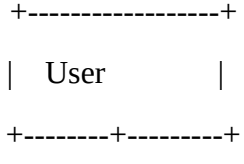


Fig 4.1

4.3 UML Diagrams

4.3.1 Use case diagram

Use Case during requirement elicitation and analysis to represent the functionality of the system. Use case describes a function by the system that yields a visible result for an actor. The identification of actors and use cases result in the definitions of the boundary of the system i.e., differentiating the tasks accomplished by the system and the tasks accomplished by its environment.



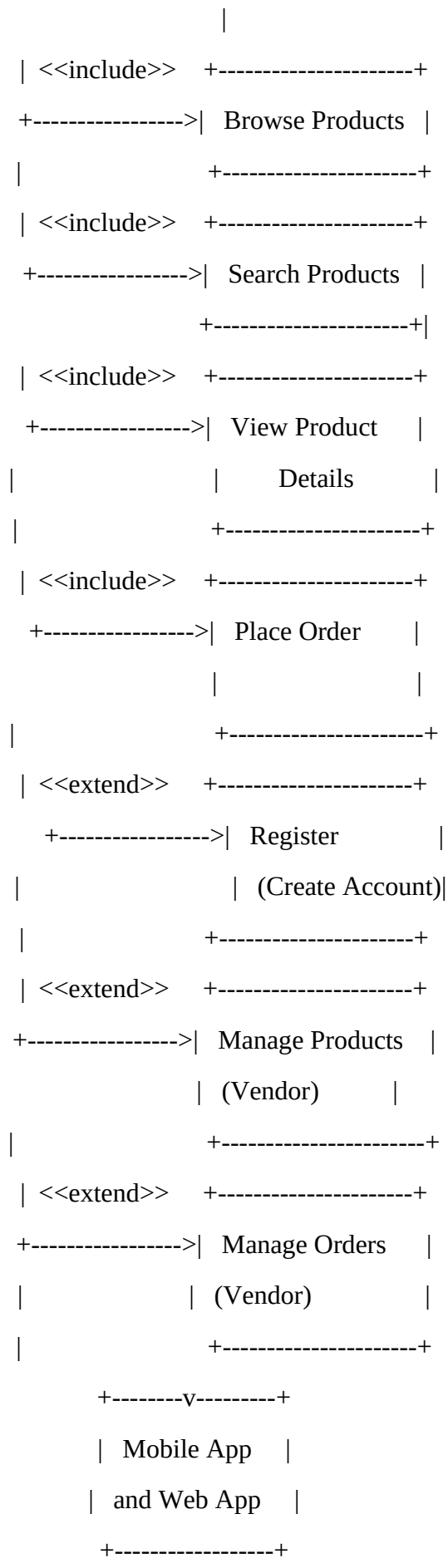
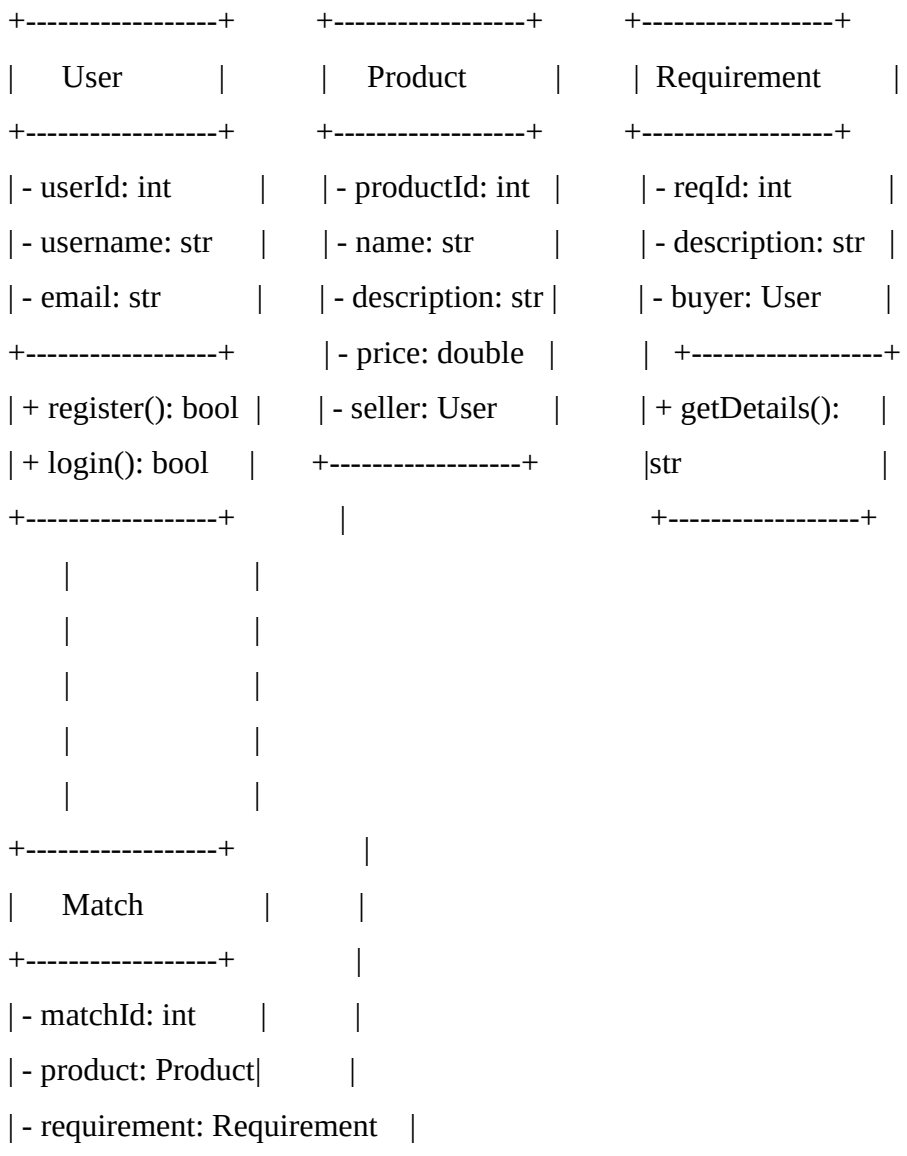

| <<include>> +----------+
+----------->| Browse Products |
| +----------+
| <<include>> +----------+
+----------->| Search Products |
+----------+|
| <<include>> +----------+
+----------->| View Product |
| | Details |
| +----------+
| <<include>> +----------+
+----------->| Place Order |
| |
| +----------+
| <<extend>> +----------+
+----------->| Register |
| | (Create Account)|
| +----------+
| <<extend>> +----------+
+----------->| Manage Products |
| (Vendor) |
| +----------+
| <<extend>> +----------+
+----------->| Manage Orders |
| | (Vendor) |
| +----------+
+--------v---------+
| Mobile App |
| and Web App |
+----------+

Fig 4.3 (a)

4.3.2 Class Diagram

Class diagrams model class structure and contents using design elements such as classes, packages and objects. Class diagram describe the different perspective when designing a system-conceptual, specification and implementation. Classes are composed of three things: name, attributes, and operations. Class diagram also display relationships such as containment, inheritance, association etc. The association relationship is most common relationship in a class diagram. The association shows the relationship between instances of classes.



| - exchangeStatus: str |

+------------------+

| + initiateExchange(): bool |

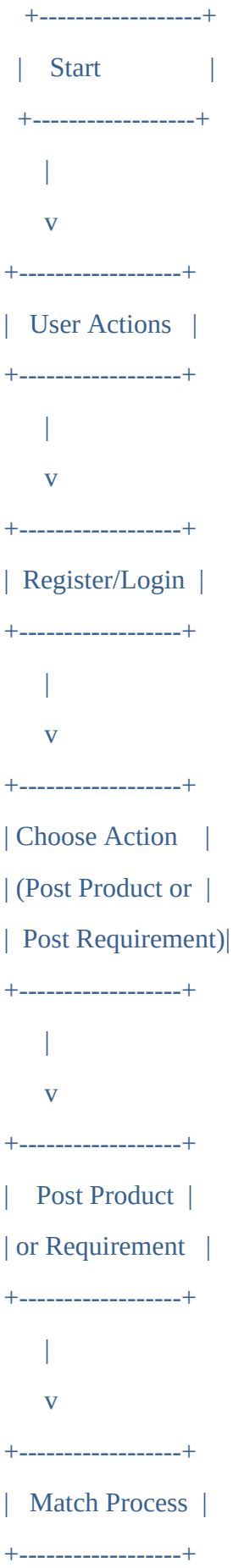
| + completeExchange(): bool |

+------------------+

Fig 4.3 (b)

4.3.4 Activity Diagram

The process flows in the system are captured in the activity diagram. Similar to a state diagram, an activity diagram also consists of activities, actions, transitions, initial and final states, and guard conditions.


Start
User Actions
Register/Login
Choose Action
(Post Product or
Post Requirement)
Post Product
or Requirement
Match Process

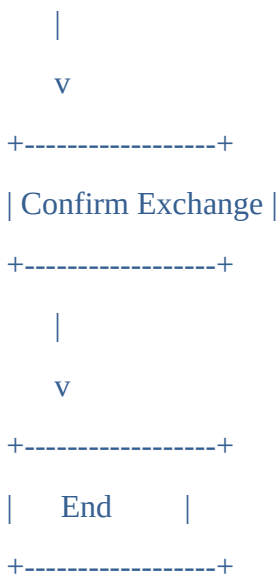


Fig 4.3 (d)

5.IMPLEMENTATION

5.1: Code:

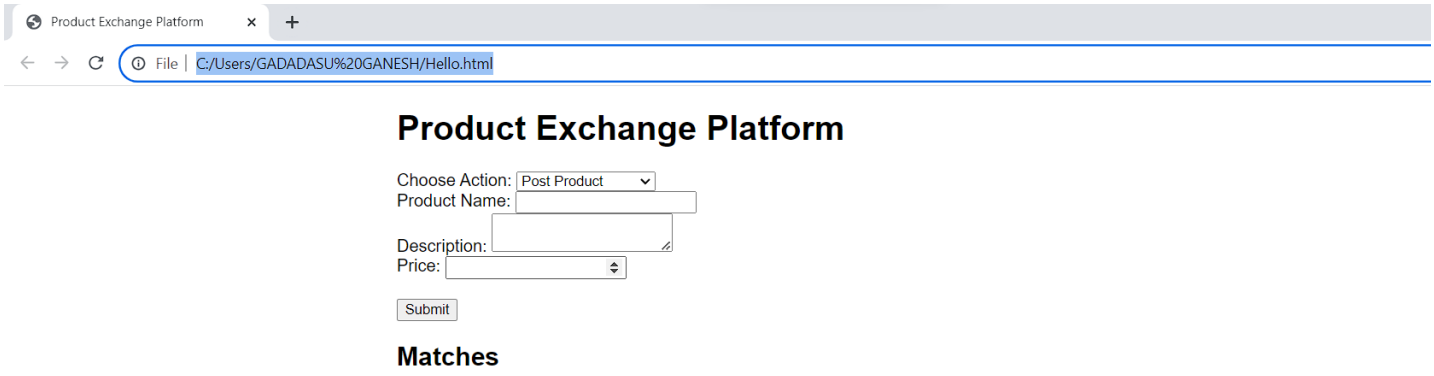
```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Product Exchange Platform</title>
   <style>
      body {
         font-family: Arial, sans-serif;
      }
```

```
        #container {
            max-width: 800px;
            margin: 0 auto;
        }

        form {
            margin-bottom: 20px;
        }

        .product, .requirement {
            border: 1px solid #ccc;
            padding: 10px;
            margin-bottom: 10px;
        }

        .match {
            background-color: #dff0d8;
        }
    </style>
</head>
<body>
    <div id="container">
        <h1>Product Exchange Platform</h1>

        <form id="postForm">
            <label for="postType">Choose Action:</label>
            <select id="postType" onchange="toggleForm()">
                <option value="product">Post Product</option>
                <option value="requirement">Post Requirement</option>
            </select>

            <div id="productForm">
                <label for="productName">Product Name:</label>
                <input type="text" id="productName" required>
                <br>
                <label for="productDescription">Description:</label>
                <textarea id="productDescription" required></textarea>
                <br>
                <label for="productPrice">Price:</label>
```

```
            <input type="number" id="productPrice" required>
        </div>

        <div id="requirementForm" style="display:none;">
            <label for="requirementDescription">Requirement Description:</label>
            <textarea id="requirementDescription" required></textarea>
        </div>

        <br>
        <button type="button" onclick="postItem()">Submit</button>
    </form>

    <div id="matches">
        <h2>Matches</h2>
    </div>
</div>

<script>
    function toggleForm() {
        var postType = document.getElementById("postType").value;
        document.getElementById("productForm").style.display = (postType === "product") ? "block" : "none";
        document.getElementById("requirementForm").style.display = (postType === "requirement") ? "block" : "none";
    }

    function postItem() {
        var postType = document.getElementById("postType").value;
        var container = document.getElementById("matches");

        if (postType === "product") {
            var productName = document.getElementById("productName").value;
            var productDescription = document.getElementById("productDescription").value;
            var productPrice = document.getElementById("productPrice").value;

            var productDiv = document.createElement("div");
            productDiv.className = "product";
            productDiv.innerHTML = `<strong>${productName}</strong><br>${productDescription}<br>Price: $${productPrice}`;
            container.appendChild(productDiv);
```

```
        } else if (postType === "requirement") {
            var requirementDescription =
document.getElementById("requirementDescription").value;

            var requirementDiv = document.createElement("div");
            requirementDiv.className = "requirement";
            requirementDiv.innerHTML =
`<strong>Requirement:</strong><br>${requirementDescription}`;
            container.appendChild(requirementDiv);
        }

        // Simulate matching logic
        var matchDiv = document.createElement("div");
        matchDiv.className = "match";
        matchDiv.innerHTML = "<strong>Match found!</strong><br>Initiate exchange or
complete later.";
        container.appendChild(matchDiv);
    }
  </script>
</body>
</html>
```

5.2: Output Screens:



5.3: Testing

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and code generation.