Software Requirements Specification

for

Bazaar – E-commerce Platform for Small Bussinesses

Version 1.0

Prepared by

Group Name: Devdyno

|  |  |  |
| --- | --- | --- |
| Mohammad Sohaib | 22I-0879 | i220879@nu.edu.pk |
| Zirwah Khalil | 22I-0748 | i220748@nu.edu.pk |
|  |  |  |

|  |  |
| --- | --- |
| Course: | Software Engineering |
| Section: | *K* |
| Date: | 23/3/2025 |

Contents

Contents ii

Revisions ii

1 Introduction 1

1.1 Document Purpose 1

1.2 Product Scope 1

1.3 Intended Audience and Document Overview 1

1.4 Definitions, Acronyms and Abbreviations 2

1.5 Document Conventions 2

1.6 References and Acknowledgments 2

2 Overall Description 3

2.1 Product Overview 3

2.2 Product Functionality 3

2.3 Design and Implementation Constraints 4

3 Specific Requirements 5

3.1 External Interface Requirements 5

3.2 Functional Requirements 5

3.3 Use Case Model 6

3.4 Sequence Diagrams 8

3.5 Class Diagram 10

4 Other Non-functional Requirements 11

4.1 Performance Requirements 11

4.2 Safety and Security Requirements 11

4.3 Software Quality Attributes 11

# Introduction

## This document presents the Software Requirements Specification (SRS) for Bazaar, an e-commerce platform designed specifically for small businesses. The purpose of this section is to introduce the reader to the platform’s concept, its purpose, scope, and the structure of the document that follows. This SRS serves as a comprehensive foundation for understanding the functional and non-functional requirements of the system and will be used throughout the development life cycle.

## This section outlines the product’s purpose, scope, target audience, key definitions, document conventions, and references that will guide the development of Bazaar. The following subsections provide a structured overview to help different readers navigate and understand this specification effectively.

## Document Purpose

## This Software Requirements Specification (SRS) describes the requirements for Bazaar – E-commerce Platform for Small Businesses (Release 1.0), a web and mobile application designed to empower small businesses by providing them with an accessible and user-friendly platform to showcase and sell their products or services. This document captures both functional and non-functional requirements for the system, detailing features, user interactions, and performance criteria to guide the design and implementation of the software.

## Product Scope

## Bazaar is an e-commerce platform tailored for small businesses, enabling them to create online stores, list products or services, and connect with customers. Unlike large-scale e-commerce platforms that cater to established enterprises, Bazaar focuses on simplicity, affordability, and ease of use, making it an ideal solution for small businesses looking to establish or expand their online presence.

## The platform allows businesses to categorize their offerings by product type, price, and availability, while customers can browse, search, and purchase products seamlessly. Key benefits of Bazaar include:

## User-friendly interfaces for both businesses and customers.

## Efficient product discovery through advanced search and filtering options.

## Secure payment mechanisms to ensure safe transactions.

## Robust communication tools to facilitate interaction between businesses and customers.

## The ultimate goal of Bazaar is to create a scalable, reliable, and inclusive platform that empowers small businesses to thrive in the digital economy.

## Intended Audience and Document Overview

This document is intended for the following readers:

* **Client/Instructors** – To review the system’s functionality and verify that requirements align with the initial vision.
* **Developers** – To use as a technical guide during system design and implementation.
* **Testers** – To verify the system meets its defined requirements and expectations.
* **Project Managers** – To track deliverables and progress according to defined specifications.

The rest of this SRS is organized into the following sections:

* **Section 2: Overall Description** – Provides system environment, design constraints, and user characteristics.
* **Section 3: Specific Requirements** – Detailed functional and non-functional requirements.
* **Section 4: Appendices and Supporting Information** – References, diagrams, and additional documentation.

## References and Acknowledgments

* **Bazaar – Deliverable 1**: Project Vision & User Stories Document
* **IEEE Std 830-1998** – IEEE Recommended Practice for Software Requirements Specifications
* **React Native** (<https://reactnative.dev>)
* **ExpressJS Documentation** (<https://expressjs.com>)
* **Expo Documentation** (https://docs.expo.dev)

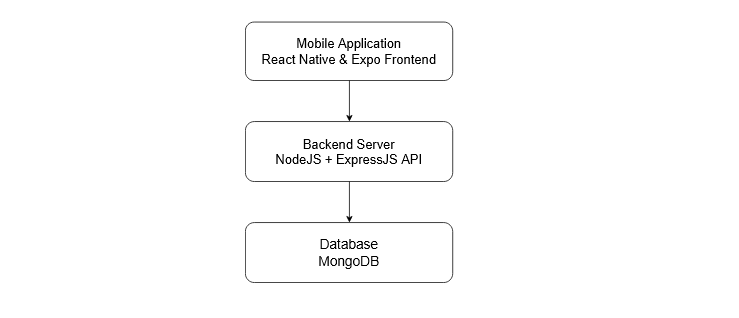
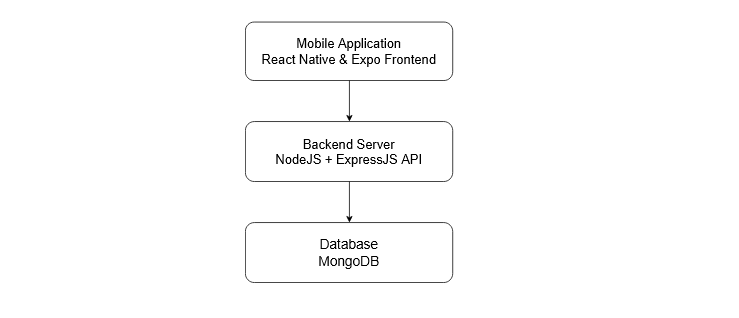
# Overall Description

## Product Overview

Bazaar is a self-contained, standalone e-commerce platform designed specifically for small businesses to create, manage, and grow their online presence. It is not a derivative of any existing software product but is developed as a new platform inspired by modern e-commerce ecosystems like Shopify or Etsy. The platform is designed from the ground up to facilitate seamless interactions between sellers and buyers, providing both parties with tools to list, discover, purchase, and manage products efficiently. Bazaar empowers small businesses by offering an intuitive and affordable solution to connect with customers and thrive in the digital marketplace.is a self-contained, standalone e-commerce platform designed specifically for small businesses to create, manage, and grow their online presence. It is not a derivative of any existing software product but is developed as a new platform inspired by modern e-commerce ecosystems like Shopify or Etsy. The platform is designed from the ground up to facilitate seamless interactions between sellers and buyers, providing both parties with tools to list, discover, purchase, and manage products efficiently. Bazaar empowers small businesses by offering an intuitive and affordable solution to connect with customers and thrive in the digital marketplace.The system will consist of three core components:

* A **React Native mobile front end**, developed using Expo.
* A **Node.js/ExpressJS backend**, handling business logic and API endpoints.
* A **MongoDB** to store user, service, and transaction data.

The product operates as a **client-server model**, where mobile clients (users) communicate with the backend API for all dynamic data retrieval, processing, and storage.



## Design and Implementation Constraints

The **Bazaar** platform offers the following major functionalities tailored for small businesses and their customers:

**User Authentication**

* **Sign-up and Login** (email/password or social media integration).
* **Session management** and secure access to protect user accounts.

**User Profiles**

* **Create/edit profiles** for sellers and buyers, including profile pictures and business details.
* **Edit profile information** to keep data updated (e.g., contact details, addresses).

**Product Listings**

* **Sellers can add, update, and delete products** with images, descriptions, pricing, and availability.
* **Categorize products** for easy discovery by buyers.

**Product Search and Browsing**

* **Search/filter products** by category, price range, ratings, or keywords.
* **Explore products** with detailed descriptions, reviews, and seller information.

**Order Management**

* **Buyers can place and track orders**, including order history and status updates.
* **Sellers can view and manage order logs**, update order status, and handle fulfillment.

**Messaging System**

* **Real-time communication** between buyers and sellers for inquiries, order updates, and support.

**Notifications**

* **Alerts for new messages, orders, or updates** to keep users informed about important activities.

## Design and Implementation Constraints

The following constraints impact the design and implementation of Bazaar:

* **Frontend Technology:** The application must be built using **React Native with Expo** for cross-platform compatibility.
* **Backend Technology:** The server-side logic must use **ExpressJS (Node.js)**.
* **Database:** A **relational database system (MongoDB or NoSQL)** will be used
* **Security:** User authentication must use **JWT (JSON Web Tokens)** for session security.
* **Hardware Constraints:** Optimized for mobile devices with limited memory and processing power.
* **Deployment:** The backend and database must be deployable on a cloud platform (e.g., Render, Heroku, or Railway)..

# Specific Requirements

## External Interface Requirements

### User Interfaces

Users will interact through a mobile app interface developed in React Native. The interface will include intuitive menus, touch-friendly buttons, modal dialogs for messaging, and form fields for input. The app is designed to follow mobile-first UX principles.

### Hardware Interfaces

* Smartphone (Android/IOS)
* Touchscreen display for Interactions

### Software Interfaces

* REST API (ExpressJS)
* Database (MongoDB)

## Functional Requirements

**F1:** The system shall allow users (sellers and buyers) to register and authenticate using email and password.

**F2:** The system shall allow sellers to create, update, and manage product listings, including details such as images, descriptions, pricing, and availability.

**F3:** The system shall allow buyers to search, filter, and browse products by category, price range, ratings, or keywords.

**F4:** The system shall allow buyers to place, track, and manage product orders, including viewing order history and status updates.

**F5:** The system shall provide a messaging interface for real-time communication between buyers and sellers to discuss product details, orders, and support.

## User Stories

### User Story #1 - User Registration and Login – U1

As a user, I want to login or register so I can access the platform

|  |  |
| --- | --- |
| **Role** | User (Seller/Buyer) |
| **Goal** | Register and log in to the platform |
| **Reason** | To access personalized features and manage their profile or services |
| **Preconditions** | User is not yet registered |
| **Postconditions** | Account created or user logged in and redirected to dashboard / home page |

### User Story #2 – Profile management – U2

As a user, I want to manage my profile so I can keep my information up to date.

|  |  |
| --- | --- |
| **Role** | User (Seller/Buyer) |
| **Goal** | Create and manage product listing |
| **Reason** | To showcase products and attract potential clients |
| **Preconditions** | User is logged in |
| **Postconditions** | Products become visible in system for clients |

### User Story #3 – View Orders– U3

As a user, I want to view my orders so I can track my purchases.

|  |  |
| --- | --- |
| **Role** | User (Seller/Buyer) |
| **Goal** | Allow users to update and manage their profile information to keep it accurate. |
| **Reason** | Ensures smooth interactions, builds trust, and enhances user satisfaction. |
| **Preconditions** | User is registered, logged in, and has an existing profile. |
| **Postconditions** | Profile is updated, changes are reflected system-wide, and user receives confirmation or error feedback. |

### User Story #4 – Explore Products – U4

As a user, I want to explore products so I can find what I need.

|  |  |
| --- | --- |
| **Role** | User (Seller/Buyer) |
| **Goal** | Enable users to browse and search for products to find what they need. |
| **Reason** | Enhances user engagement, supports informed purchasing decisions, and increases product visibility for sellers. |
| **Preconditions** | User is logged in (optional for browsing), products are listed, and search/filter features are available. |
| **Postconditions** | User views product listings, accesses details, and can add items to cart or wishlist, with feedback if no results are found. |

### User Story #5 – Add Products – U5

As a seller, I want to add products so I can sell them on the platform.

|  |  |
| --- | --- |
| **Role** | Seller |
| **Goal** | Allow sellers to list products on the platform for sale. |
| **Reason** | Enables sellers to showcase their offerings and generate revenue through the platform. |
| **Preconditions** | Seller is registered, logged in, and has completed any required verification. |
| **Postconditions** | Product is successfully listed, visible to buyers, and seller receives confirmation. |

### User Story #6 – View Order Logs – U6

As a seller, I want to view order logs so I can mange my sales.

|  |  |
| --- | --- |
| **Role** | Seller |
| **Goal** | Provide sellers with access to order logs to track and manage their sales. |
| **Reason** | Helps sellers monitor transactions, fulfill orders, and analyze sales performance. |
| **Preconditions** | Seller is registered, logged in, and has received at least one order. |
| **Postconditions** | Seller can view detailed order logs, including status, customer details, and payment information. |

### User Story #7 – Selling Platform – U7

As a seller, I want to manage my products and orders so I can run my business effectively.

|  |  |
| --- | --- |
| **Role** | Seller |
| **Goal** | Enable sellers to manage products and orders efficiently to operate their business. |
| **Reason** | Streamlines business operations, improves order fulfillment, and enhances seller productivity. |
| **Preconditions** | Seller is registered, logged in, and has listed products or received orders. |
| **Postconditions** | Seller can update product details, track orders, and manage sales effectively. |

### User Story #8 – Edit Profile – U8

As a user, I want to edit my information to keep my data updated.

|  |  |
| --- | --- |
| **Role** | User (Seller/Buyer) |
| **Goal** | Allow users to edit their profile information to ensure data accuracy. |
| **Reason** | Ensures up-to-date information for seamless transactions and personalized experiences. |
| **Preconditions** | User is registered and logged into the platform. |
| **Postconditions** | Profile information is updated, changes are reflected system-wide, and user receives confirmation. |

# Other Non-functional Requirements

## Product Requirements

**Performance Requirements:**

* **P1**. Product search results must be returned within **2 seconds** after a buyer performs a search.
* **P2**. The platform must be able to handle up to **5,000 simultaneous users** without degradation in performance.
* **P3**. Order status updates must be reflected across buyer and seller dashboards within **5 seconds**.

**Software Quality Attributes**:

* **Reliability**: The system will ensure 99.9% uptime.
* **Maintainability**: Code will follow modular design principles and use version control.
* **Usability**: Mobile-first UX/UI design with intuitive navigation.

## Organizational Requirements

**Safety and Security Requirements:**

* **S1.** All user authentication must be secured using encrypted JSON Web Tokens (JWT).
* **S2.** User data (such as passwords) must be securely stored using industry-standard hashing algorithms (e.g., bcrypt).

## External Requirements

**Performance Requirements**:

* **P4**. Notifications must be delivered to users within 3 seconds of triggering events (could involve external notification services like Firebase, which are external dependencies).

**Software Quality Attributes may also include factors like**:

* **Flexibility**: The system needs to adapt to third-party tools like messaging systems.