Addis Ababa Institute of Technology

School of Information Technology and Engineering (SiTE)

Software Requirements Specification (SRS)

GebeyaYE Multivendor E-commerce site

Section 2 Group 3

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Document Approval

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Declaration

We, the undersigned, as a result of this, declare that "GebeyaYE," submitted to Ms. Nunyat, is the result of work conducted by us under her guidance. This project work is submitted as part of the Software Engineering course. the contents in this document are our work written in our own words and this work has not been published elsewhere. We have correctly referenced the primary sources where words or ideas from other people have been used. We acknowledge that the work submitted here complies fully with Addis Ababa University's policies regarding intellectual property rights, plagiarism, and moral and ethical behavior standards. We are aware that the Institute will take disciplinary action if any of the previously mentioned standards are broken.

Acronyms and abbreviations

Definitions

Administrator (15): a person responsible for carrying out the administration of a business or organization.

API (14): a way for two or more computer programs to communicate with each other.

Buyer (15): a person who plans on making a purchase.

Caching (24): the process of storing copies of files in a cache, or temporary storage location, so that they can be accessed more quickly.

CSS (10): a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML.

Digital marketplace (12): a platform that facilitates electronic trade between buyers and sellers.

E-commerce (11): is a method of buying and selling goods and services online.

Encryption (12): the process of protecting information or data by using mathematical models to scramble it in such a way that only the parties who have the key to unscramble it can access it.

Modularity (25): the use of individually distinct functional units.

NodeJS Express (14): is a nodejs web application framework that provides broad features for building web and mobile applications

A product catalog (14): a document enlisting essential product information such as product dimensions, pricing, material, and more.

React (14): a free and open-source front-end library for building user interfaces based on components.

Stakeholder (15): either an individual, group, or organization that's impacted by the outcome of a project or a business venture.

Throughput (23): the amount of a product or service that a company can produce and deliver to a client within a specified period.

Uptime (24): a measure of system reliability, expressed as the percentage of time a machine.

Vendor (15): a company offering something for sale.

1. Introduction

This Software Requirement Specification (SRS) document provides a comprehensive overview of the requirements for the development of a multi-vendor e-commerce website project. It delves into the General Description, Specific Requirements encompassing both functional and non-functional aspects, and a thorough exploration of Use Cases. Additionally, the document will address Design Constraints, Logical Database Requirements, and various other essential requisites. Furthermore, it will outline the Change Management Process, and lastly, it will conclude with a list of references consulted during the preparation of this document.

1.1 Purpose

This SRS document aims to give the verbal description and requirement of a project where several independent sellers or vendors with their diversified products can promote and sell their goods or services to a large consumer base on a multivendor e-commerce website, which serves as a platform for bringing them together.

It will explain the purpose and features of the system, the interfaces of the system, what the requirements are, what the system can and can't do, the constraints under which it must operate, and how the system will react to external stimuli.

It also describes non-functional requirements, the interaction of the system with external applications, and other factors, for the complete declaration of the systems development. This is a documentation for a prototype for a multi-vendor e-commerce site and it is intended for the following groups.

1. Entrepreneurs and Business Owners who are interested in launching their e-commerce marketplace or expanding their existing business to include a multivendor model.2.
2. Professionals in technology who work on the development, upkeep, and improvement of e-commerce platforms include web developers, web designers, and IT teams.
3. Marketing and sales experts who want to use the multivendor e-commerce model to enhance sales should include marketers, sales managers, and business development teams.
4. Small and Medium-Sized Business Owners: Owners of small or medium-sized businesses who are considering joining a multivendor e-commerce platform.

1.2 Scope

This SRS discusses the process and the functional requirements for developing a multivendor e-commerce site.
The name of this site will be **GebeyaYE**, and it will have the basic functionalities of
- Unlike the existing system, the GebeyaYE site solves trust issues with the vendors as it requires the vendors for their business licenses to register on our system.
- Connecting multiple vendors, and store owners with the wide network of the site
- Processing the payment after accepting the order from the client
- Handling a delivery system for the client
- Give a rating for the client to help ease the shopping process
The site has the potential to expand into a mobile app, based on market acceptance. Since the purpose of this multivendor e-commerce site is to ease shopping and transform the traditional marketplace into

a whole new version, it brings huge opportunities for manufacturers, wholesalers, brands, and retailers to grow sales as well as profits. The system is based on a NRDB with its buying and selling management and payment processing functions. We are going to have a DB server supporting hundreds of thousands of vendors and customers. Above all, the scope includes providing comfortable, visually appealing layouts, easy navigation, and seamless UI/UX across different devices and screen sizes. along with the best features available. However the system or the e-commerce site will not handle Inventory site management, we will not have physical stores, and we will not be handling any products for ourselves. Besides that it will not have an offline functionality, that is all of our product depends on the connectivity that is provided by the Internet.

1.3 Overview

The Software Requirements Specification (SRS) document for the **GebeyaYE** Multi-Vendor Site serves as a comprehensive guide for readers aiming to gain an understanding of the software product's functionality. With a primary objective to clarify the inner workings of the product, the SRS outlines specific requirements and use cases.

A complete table of contents is included in this SRS to facilitate readers' navigation of the content. This element of the organization makes it possible to quickly access several areas, including system limitations, user interfaces, and functional and non-functional requirements.

The SRS document has a section devoted to Definitions, Acronyms, and Abbreviations to further improve the reading experience. This section aims to remove any doubt and promote a shared vocabulary among all parties involved.

2. General Description

2.1   Product Perspective

Our product focuses primarily on creating a platform that store owners can use to showcase and promote their products as well as to allow customers to find their desired items and explore new products creating a virtual front between store owners and online shoppers.

According to a study made in 2022 about 21 ecommerce platforms exist in Ethiopia. These platforms provide a wide range of products. Platforms like Jiji are among the top 3 online Marketplaces in Ethiopia. Jiji is a popular online marketplace that allows users to buy and sell products and services. It is a platform where you can find a wide range of items such as electronics, fashion, cars, real estate, and more.

Sellers who want to sell their products list them on Jiji Ethiopia and wait until interested buyers contact them.

To buy products using Jiji after customers search and find the item they want they contact the seller of that item to arrange for delivery or pick up.

Our product differs from Jiji and other related e-commerce platforms first we authenticate vendors and only certified sellers can list their products after being approved by the administrator. Secondly, unlike most platforms, we offer online payment and delivery systems rather than connecting the sellers and buyers.

Finally, our product is going to have an attractive front end, a great user experience design, and responsive customer support. That engages customers and guides them through the process.

2.2 Product Functions

Our product offers comprehensive functionalities some of which include

Customers can search and browse to find the products they want, add the products to their cart, and place an order after payment, selecting the delivery date and location. Customers can also send support requests and share their experiences on social media.

Products with descriptions and prices can be posted by registered vendors. Also, if they run out of stock, they can change the quantities or remove the product.

Admins can respond to customer requests and post advertisements sent by premium account vendors.

2.3 User Characteristics

Our users can be categorized into three:

1. Customers: these are, the primary users of our platform, are individuals looking to purchase products online.

2. Vendors: these are stores and businesses that offer products for sale on our platform.

3. Administrator: have control and responsibility for managing the platform.

To use our products customers and vendors will not need high educational knowledge and technical expertise, since our platform will be easy and user-friendly. Knowledge of basic skills to open their device's web browser is enough to visit our website. Administrators, on the other hand, must have some technical skills in order to manage various aspects of the platform; understanding of e-commerce websites is beneficial.

2.4   General Constraints

2.4.1 Regulatory policies

It may take time until we build customer and vendor trust to use our platform.

Lack of legal frameworks that integrate the digital marketplace, tax system, and payment technologies.

2.4.2 Hardware Limitations

The users must have web surfing devices like smartphones and computers and an internet connection to access our platform therefore in places where these necessities are not met customers can't use our product.

The delivery system may not reach rural areas.

2.4.3 Safety and Security Considerations

Designing and implementing the site with robust security measures, such as encryption, and protection against threats.

Integrating the platform with various payment gateways to facilitate secure transactions.

2.4.4 Time constraint

We will complete and submit our project by January 12, 2023, since the submission date is at the end of the course.

As the project advances into the design and implementation phase, potential time limitations may arise due to the complexity of envisioned features, scope creep, unforeseen technical challenges, resource constraints, and thorough testing requirements. Additionally, coordinating with multiple vendors and stakeholders, addressing iterative design feedback, and ensuring the scalability of the platform for a large user base can contribute to extended timelines. To mitigate these challenges, careful project planning, realistic milestone setting, and proactive issue resolution strategies are crucial to maintain project momentum and meet deadlines effectively.

2.5   Assumptions and Dependencies

We assume that the following assumptions hold for this multivendor e-commerce site:

❖   The average user can operate devices like computers and smart mobile phones. And that there is a reliable internet network connection to access our website.

❖   a sufficient number of vendors will participate and list their products on the platform.

❖   There is a reliable and uninterrupted internet connection which is necessary for vendors to manage their product listings.

❖   The platform maintains a good reputation and builds trust with customers.

❖   The platform assumes that it will remain stable and perform efficiently under expected user loads.

2.6   Apportioning of requirements

Some features like Product reviews and ratings may be delayed until further versions due to time constraints.

3. Specific Requirement

3.1 External Interface Requirements

3.1.1 User Interface
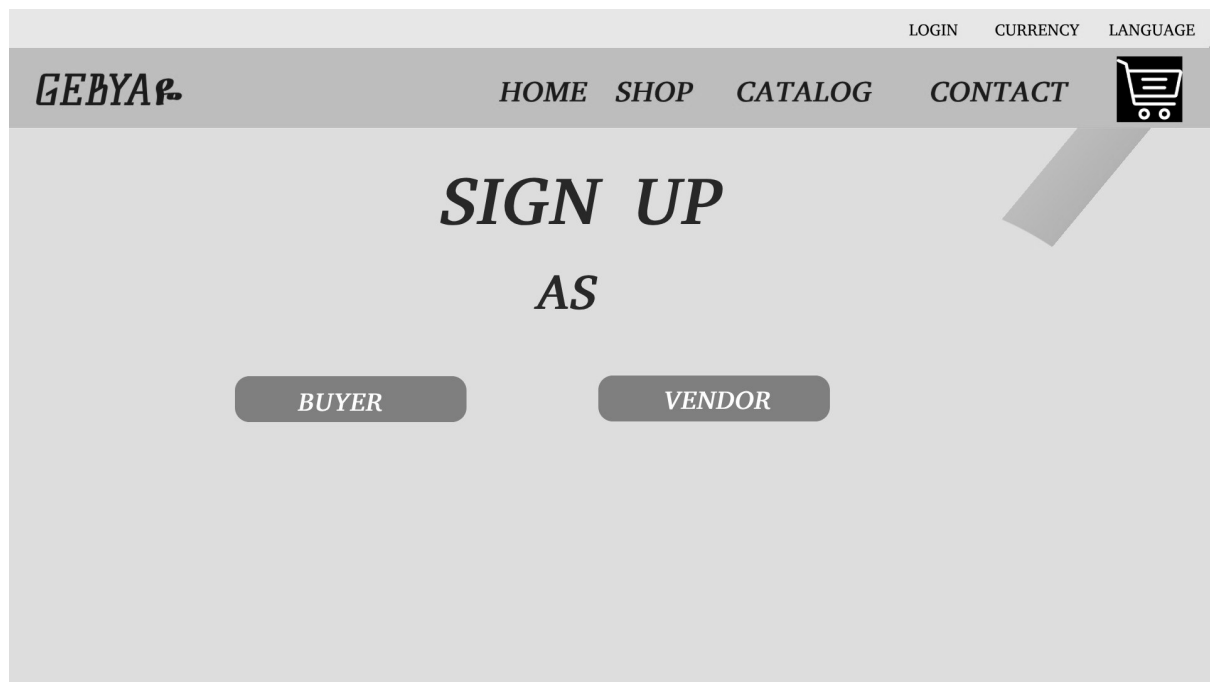
In "**GebeyaYE**", our website features three distinct interfaces beyond the landing page, aligning with the diverse needs of our three primary stakeholders. These interfaces are integral components preceding any transaction or trading activity. Leveraging a single-page application approach and implementing caching mechanisms enhances the overall efficiency and performance of our website.

The logical characteristics of each interface with the user have the following behavior

1. Useblity: our website is similar to most social media which doesn't require more potential. It is user-friendly which means we choose colors carefully, make navigation more intuitive, and provide in-depth information for our client. In addition to that, our website is more similar to the common E-commerce website layout, the only difference is the seller-side interface.

2. Accessibility: most of us are residents at 6 Kilo Campus which is the most diverse campus in Ethiopia, so it gives us an intuition to include different kinds of people with disabilities when we design our website. It is accessible for screen readers and we use semantic tags for better organization for search engine

3. Responsiveness: we use the best framework for our CSS part which helps us for better responsiveness so the website will be responsive for different kinds of screen sizes without any difficulty. In addition to that, it provides timely feedback for our customers.

4. Consistency: we use constant brand color and structure for our customers but different layouts for the seller side and buyer side. Though the customer doesn't get the problem of using our website.

5. User Guidance: we include a user guide on our website for the three (seller, buyer, administrator) stakeholders. This helps them if they have any difficulty while using our website.
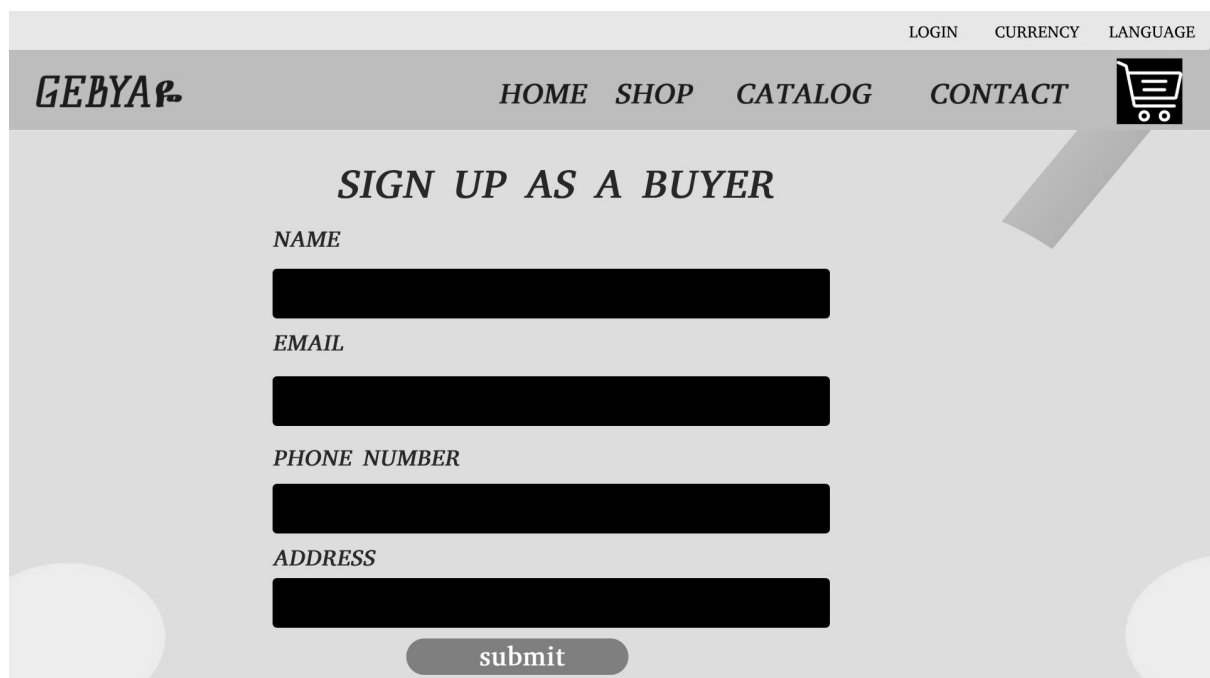
Note: The interfaces on this SRS are just to temporarily show how it will look, these are not the real designs of the site!

3.1.2 Hardware interface

Currently, our website has no hardware interface requirements

3.1.3 Software Interfaces

Software interfaces are a very important thing for our site, since we use an incremental model we modularize each part of the component for our site in addition we add external API for our site for transactions.

Among those interfaces, the following are we implement:

Interface Type: User Interface (UI)

Interface Description:

For buyers: This user interface allows customers to search for products, view product details, and add products to their shopping carts.

For Seller: The user interface allows customers to post their product and its description and they can see their order list if there is an order which doesn't been delivered yet

Interface Components for Buyers:

- Search bar
- Product listings
- Product details page
- Shopping cart summary

Interface Components for Seller:

- Product listings
- Product details page
- Order Summary

- Posting page

Data Exchange Format: HTML, JSON
Communication Protocol: HTTP/HTTPS
Authentication and Authorization: No user authentication is required for product browsing. Authorization is needed for adding items to the shopping cart, which is managed by the user(buyer) login. The seller must authenticate before it is posted, which is managed by the user(seller) login
Error Handling:

- In case a product is not found, display an error message and suggest similar products.
- In the event of a server error, provide a generic error message and log the error for investigation.

Payment Gateway Communication Interface

Interface Type: Communication Interface
Interface Description: This interface facilitates secure communication with a third-party payment gateway for processing online payments.
Interface Components:

- E-commerce server
- Telebirr direct access

Data Exchange Format: JSON
Communication Protocol: HTTPS
Authentication and Authorization: The user gives us his preferred phone number which has a Telebirr then we give the authentication for the Telebirr system. If we get a success message from Twe conclude the transaction.
Error Handling:

- Properly handle HTTP status codes returned by the payment gateway API
- Log any communication errors or exceptions for debugging and auditing.

Social Media Integration:

- Social Platforms: Interfaces allowing users to share content from the website on social media platforms or sign in using social media accounts.

3.1.4 Communication interface

Since our service is web-based, the communication uses standard protocol.
communication interface involves HTTP requests between React and Node.js/Express for client-server interactions, while MongoDB is used to store and retrieve data in the backend. React components communicate through props, state changes, and events to update the user interface dynamically.

3.2 Functional requirements

This project constitutes three principal entities or stakeholders:

- Buyers
- Sellers
- Administrators

The system will have to coordinate and manage these stakeholders. To do this the system will have to offer different services to different individuals. The following sections will show what services the system will need to offer to each of these entities

- Buyers: The system will need to offer buyers a variety of services, such as the ability to browse and purchase products, track their orders, and manage their accounts. The system should also provide customer support services, such as answering questions and resolving issues.
- Vendors(sellers): The system will need to offer vendors services that help them manage their businesses, such as the ability to list and manage products, and track sales.
- Administrators: The system will need to offer administrators services that help them perform their jobs effectively, such as the ability to manage customer orders, process payments, and track inventory.

3.2.1 Functional requirement #1

ID	FR 01
Name	*Browse and filter*
Summary	The system should let users search for items they want.
Description	Users can browse for whatever items they came to the website looking for. The system should generate different items from different stores by finding them based on keywords. This service is provided for any user, even those who have not signed up.
Dependency	None

3.2.2 Functional requirement #2

ID	FR 02
Name	*User Registration*

Summary	The system will allow customers to create an account.
Description	Users will enter basic information about themselves, such as their name, email address, username, and password.
Dependency	None

3.2.3 Functional Requirement #3

ID	FR 03
Name	*User login*
Summary	The system will allow customers to log in.
Description	Users should be able to log in every time they visit the site by entering the username and password they created when registering. The username and password entered by the user to login to the system are matched with information stored in the database when they first registered.
Dependency	FR 14

3.2.4 Functional Requirement #4

ID	FR 04
Name	*Add to cart*
Summary	The system will allow registered buyers to add to carts.
Description	After registering, buyers should be able to add and remove desired products to a cart and modify the quantities.
Dependency	FR 03

3.2.5 Functional Requirement #5

ID	FR 05
Name	*Product Catalog*
Summary	The system will have a catalog for different products.
Description	The system should display a comprehensive catalog of products with details such as title, description, price, availability, and images of different products appointed by the stores and vendors from which they come.
Dependency	None

3.2.6 Functional Requirement #6

ID	FR 06
Name	*Choose the delivery date and location*
Summary	The system allows users to choose the delivery date of an item.
Description	The system should allow the users to specify the date they want the product delivered and the location where they want it delivered. Then it should first validate the customer's selection to ensure that the chosen delivery date is available and that the chosen delivery location is within the system's delivery area. Then it should allow the users to specify the date they want the product delivered and the location they want it delivered to.
Dependency	FR 03

3.2.7 Functional Requirement #7

ID	FR 07
Name	*Can ask for support*
Summary	The system will allow users to ask for help.
Description	The system must provide a way for users to request help from an admin or the store itself, whose phones will be made accessible, and also email support and enable customers to contact vendors directly for product-related queries or issues.

Dependency	None

3.2.8 Functional Requirement #8

ID	FR 08
Name	*Social sharing*
Summary	The system will allow users to share purchased items on social media
Description	The system should allow the users to share their shopping experience and different purchases on different social media sites
Dependency	FR 03

3.2.9 Functional Requirement #9

ID	FR 09
Name	*Vendor Registration*
Summary	The system lets vendors send a request to admins to register
Description	Vendors (sellers) will enter their basic information and their business license and admins will need to approve or reject.
Dependency	FR 15

3.2.10 Functional Requirement #10

ID	FR 10
Name	*Vendor login*
Summary	The system will allow vendors to log in.

Description	Vendors should be able to log in every time they wish to visit the site by entering the username and password they created.
Dependency	FR 14

3.2.11 Functional Requirement #11

ID	FR 11
Name	*Vendors can choose the package*
Summary	The system allows vendors to decide the type of sellers they are going to be
Description	Vendors should be able to choose whether they want to be regular vendors-who can immediately register after being accepted as premium vendors, who will have to pay extra.
Dependency	FR 09

3.2.12 Functional Requirement #12

ID	FR 12
Name	*Vendors can describe products*
Summary	The system will allow vendors to add descriptions to the products.
Description	Vendors will be able to add descriptions of their products and services. The descriptions must be less than 1000 characters. The system will store the descriptions and display them on the product and service pages.
Dependency	FR 10

3.2.13 Functional Requirement # 13

ID	FR 13

Name	*Vendor can edit quantities*
Summary	The system will allow vendors to edit the number of products in stock.
Description	Since products will still be sold directly from the store and the website, quantities will be constantly varying and so will often need to be updated by vendors.
Dependency	FR 10

3.2.14 Functional Requirement #14

ID	FR 14
Name	*User and vendor Authentication*
Summary	The system will authenticate users based on their stored credentials.
Description	The Passwords and usernames entered by users and vendors will be matched to the stored passwords and usernames created when first registering. Only the valid ones will be able to access their accounts
Dependency	None

3.2.15 Functional Requirement #15

ID	FR 15
Name	*Administrators can reply to requests*
Summary	The system will allow administrators to respond to vendors' requests
Description	The system should track the status of requests and provide administrators with a way to view and manage the status of all requests. After reviewing the store's business, administrators should be able to reject or approve the registration of the store to the website.
Dependency	None

3.2.16 Functional Requirement #16

ID	FR 16
Name	*Administrators can manage vendors*
Summary	The system will allow administrators to play a role in vendors' actions
Description	The system must provide a way for administrators to edit vendor information.
Dependency	None

3.2.17 Functional Requirement #17

ID	FR 17
Name	*Process Payments*
Summary	The system will allow administrators to facilitate payments from vendors and users
Description	The system must provide a way for users to pay and administrators to receive the revenue generated from any sale of any product from a vendor and to deduct a percentage of that revenue as commission.
Dependency	FR 03, FR 10

3.2.18 Functional Requirement #18

ID	FR 18
Name	*Administrators can deploy advertisements*
Summary	The system will allow administrators to add advertisements for certain buyers.

Description	The system must provide a way for administrators to add advertisements, for premium users and those users looking solely for advertisements. Administrators must be able to deploy advertisements in the format of banners.
Dependency	None

3.3 Use Cases

Vendor

Admin Side

Buyer
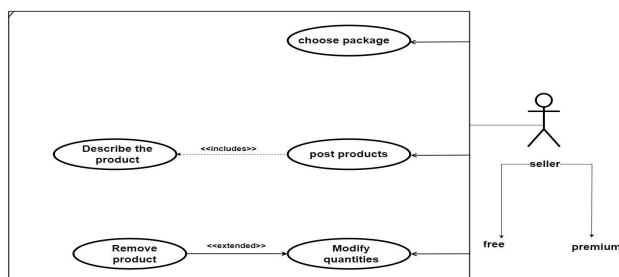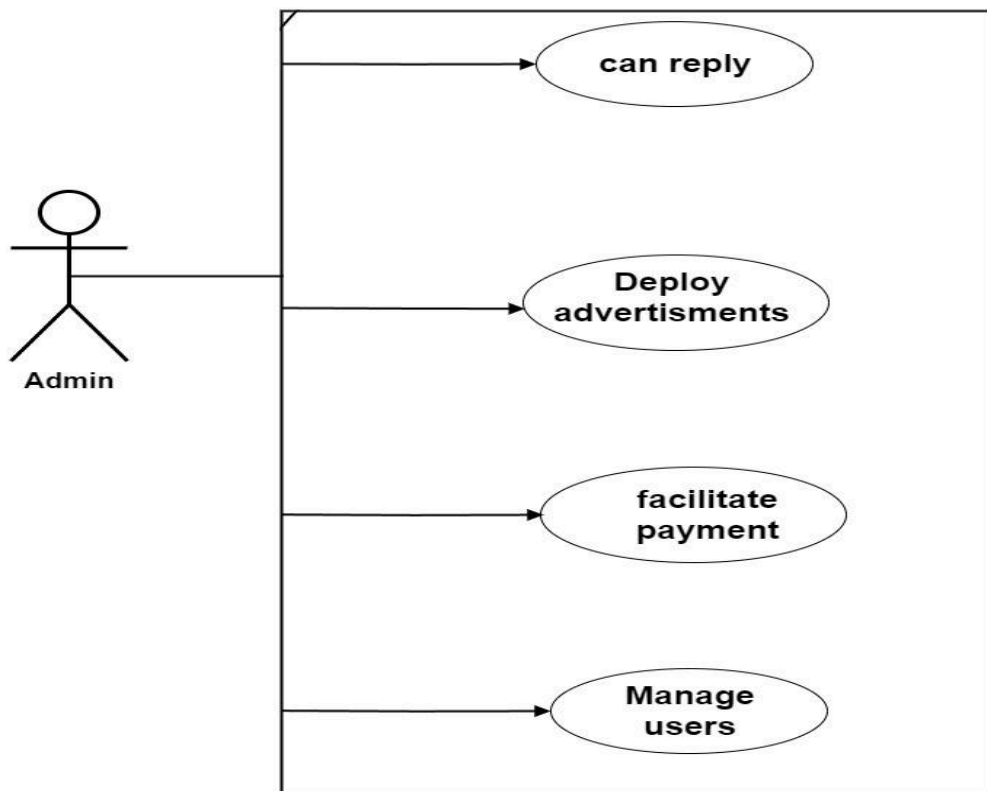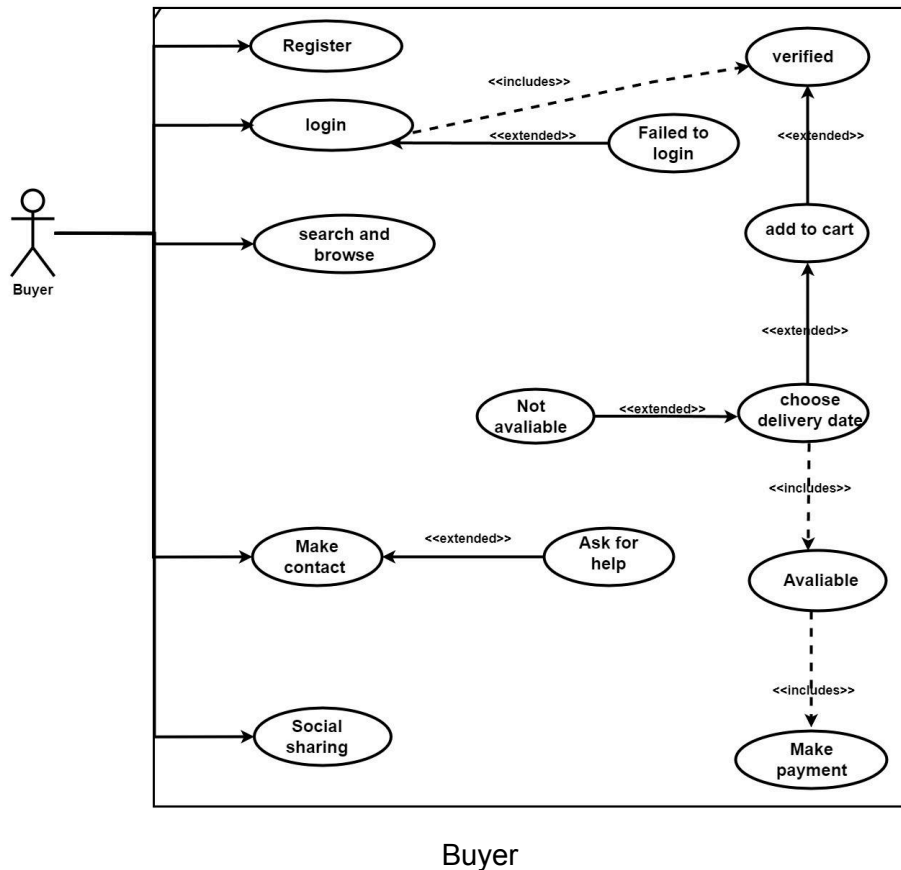
3.4.1. Performance

1. **Response Time:**
   - **Page Load Time:** Aim for a maximum page load time of 5 seconds for 90% of user interactions, following the best practices outlined in case studies by e-commerce giants like Amazon and Shopify, where faster load times significantly impact user engagement and sales.
   - **Search Queries:** Ensure search queries return results within 3 seconds, a benchmark set by leading e-commerce platforms such as eBay and Walmart for optimizing user experience and conversion rates.
2. **Throughput:**
   - **Concurrent User Handling:** Ensure the system can handle a substantial concurrent user load, in line with performance standards observed in case studies or technical reports from major e-commerce platforms like Alibaba or Magento, where handling high traffic during peak seasons is crucial for business success.
3. **Scalability:**
   - **Horizontal Scalability:** Design the system to horizontally scale and accommodate a significant increase in user load over the next 2 years, drawing insights from success stories or scalability strategies of growing e-commerce businesses such as Etsy or BigCommerce.

4. **Caching and Optimization:**
   ○ **Browser Caching:** Implement browser caching for static content based on recommendations and success stories from e-commerce-focused Content Delivery Networks (CDNs) like Akamai or Fastly, emphasizing faster delivery of product images, CSS, and JavaScript.
   ○ **Media Optimization:** Optimize images and media in line with case studies or optimization techniques employed by successful e-commerce platforms, following guidelines from Shopify or WooCommerce for improved load times and better user experience.

3.4.2. Availability and Reliability

1. **Uptime:**
   ○ **Minimum Uptime:** The system should maintain a minimum uptime of 99% over any 30-day period, excluding scheduled maintenance windows. This aligns with industry standards for high availability, ensuring reliable access to services for users while allowing for necessary maintenance periods.

2. **Redundancy and Failover:**
   ○ **Critical Components:** Implement automated failover mechanisms for critical components like the database and payment gateway to ensure continuous operation. Employ redundant hardware, load balancers, and mirrored servers to swiftly redirect traffic in case of hardware or software failure, minimizing downtime and ensuring uninterrupted service.

3. **Backup and Disaster Recovery:**
   ○ **Automated Backups:** Conduct regular automated backups of the database to prevent data loss. Store backups securely in multiple locations to safeguard against potential data corruption or system failures.
   ○ **Disaster Recovery Plan:** Establish a comprehensive disaster recovery plan to restore service within 4 hours in case of catastrophic failure. This plan should outline procedures, responsibilities, and tools required to swiftly recover data and system functionality. Test this plan regularly to ensure its effectiveness.

3.4.3. Security

1. **Data Encryption:**
   ○ **Secure Data Transmission:** Ensure sensitive data, like user credentials and payment information, is transmitted exclusively over TLS 1.2 or higher protocols. Implement robust encryption standards to protect data in transit, using tools like SSL/TLS certificates.

2. **Authentication and Authorization:**
   ○ **Multi-factor Authentication (MFA):** Enforce MFA specifically for administrator accounts to add an extra layer of security beyond passwords. Utilize reliable MFA methods like SMS codes, authenticator apps, or hardware tokens.

- ○ **Role-Based Access Control (RBAC):** Implement RBAC to manage user permissions systematically. Assign roles defining access levels to different sections and functionalities within the system based on user responsibilities.
3. **Data Privacy and Compliance:**
   - ○ **User Data Handling:** Establish protocols and policies that align with the PDPP, outlining how user data is collected, processed, stored, and protected within the e-commerce system, adhering to the principles of lawfulness, fairness, and transparency.
4. **Security Audits and Penetration Testing:**
   - ○ **Regular Security Assessments**: Conduct thorough security audits and penetration tests, at least annually, to identify system vulnerabilities. Utilize reputable security firms or tools to assess the system's resilience and promptly address any identified weaknesses.

3.4.4. Usability and User Experience:

1. Intuitive UI/ UX

The user interface should follow industry best practices for e-commerce, providing a clear and intuitive shopping experience for both buyers and sellers.

2. Accessibility:

The site should adhere to WCAG 2.0 guidelines, aiming for at least AA compliance, to ensure accessibility for users with disabilities.

3. **Cross-browser Compatibility**:

The site should be compatible with the latest versions of popular web browsers (e.g., Chrome, Firefox, Safari, Edge) on both desktop and mobile platform.

3.4.5. Scalability

1. **Database Scalability:**
   - ○ **Product Handling Capacity Design:** The system should be designed to efficiently manage a minimum of 500 products and associated data using MongoDB. Implement efficient schema design, indexing, and sharding strategies native to MongoDB to optimize data retrieval and accommodate future growth in the product database.
2. **Horizontal and Vertical Scaling:**
   - ○ **Scalable System Architecture Design:** Design the system architecture to leverage MongoDB's capabilities for both horizontal (sharding for distributing data across multiple servers) and vertical (upgrading individual server resources) scaling. Initially, focus on vertical scaling by utilizing MongoDB's vertical scaling features to enhance server performance.
   - ○ **Modular Structure Planning for Future Growth:** Plan for a modular architecture that aligns with MongoDB's scalability features. Leverage MongoDB's sharding capabilities to enable seamless addition of shards for horizontal scaling as the user base and data volume increase.

3.4.6. Maintainability and Extensibility:
1. **Modularity**:

- Design the system with a modular architecture to facilitate easy maintenance and future extensions, allowing for the addition of new features and functionalities with minimal disruption.

3.4.7. Portability:

1. **Operating System Compatibility**:
- The system should be compatible with major operating systems, including Windows (versions 10 and above), macOS (latest versions), and popular Linux distributions (e.g., Ubuntu, CentOS).
- The web application should be platform-independent, and accessible through standard web browsers.
2. **Browser Compatibility**:
- The website should render and function consistently across a wide range of modern web browsers, including but not limited to Chrome, Firefox, Safari, Edge, and Opera.
3. **Mobile Responsiveness**:
- The site should be optimized for mobile devices (e.g., smartphones, and tablets) to ensure a seamless user experience on various screen sizes and resolutions.

3.5 Inverse Requirements

What our website does not do

Our website doesn't allow the vendor to receive money directly from the buyer. Instead, the payment is processed through the website, and the funds are received by the website admin after deducting the commission. Then, after that, the website admin will pay the vendor

Our website doesn't allow the buyers to know the identity of the seller; only know their ID.

3.6 Design Constraints

As the website was developed within a tight timeframe, we are operating under time constraints.

3.7 Logical Database Requirements

-Our website will utilize a non-relational database, MongoDB.

-The document structure in MongoDB would be as follows:

No	Document name	Keys	Description
1	Vendor	User name Full name Email Password Phone number License verification Shop address ID Credit card number	-Used to store information about vendors.
2	Shop address	Shop address ID Region City Sub-city Kebele Woreda Street Shop number	- Used for storing information about the shop where the vendor sells their products.

3	Buyer	User name	-Used to store information about buyers.
		Full name	
		Email	
		Password	
		Credit card number	
		Buyer address	
4	Product	Product ID	-Used to store information about products.
		User name(of vendor)	
		Product Title	
		Description	
		Shipping details	
		Size	
		Quantity	
		price	
5	Order	Order ID	- Used to store information about orders.
		Buyer full name	
		Product ID	
6	Delivery	Delivery ID	-Used to store delivery information.

3.8 Other Requirements

3.8.1 Training-related Requirements

If there is any specific training that should be necessary for a user to begin using this application.

User Training: Provide training materials and resources to educate the site's users on how to navigate the platform, search for products, place orders, track shipments, and utilize any unique features or functionalities. This training can be in the form of user manuals, video tutorials, or interactive online courses.

Vendor Onboarding: Develop a vendor onboarding program to guide new vendors through the process of setting up their stores, managing inventory, uploading product information, pricing products, and fulfilling orders. This program should include training materials, documentation, and possibly personalized support to ensure vendors understand and can utilize the platform effectively.

Administrator Training: Train the site's administrators on how to manage and configure the e-commerce platform. This includes tasks such as managing user accounts, setting up payment gateways, managing shipping options, configuring tax rules, handling customer disputes, and monitoring vendor activities. Administrators should be familiar with the platform's backend interface and have a thorough understanding of its features and functionalities.

Support Training: Train a support team or customer service representatives to assist users and vendors. This training should cover common issues or questions that may arise, troubleshooting techniques, and effective communication skills to ensure prompt and satisfactory resolution of customer/vendor inquiries or concerns.

Security and Privacy Training: Educate all relevant stakeholders on security best practices, data protection, and privacy policies. This includes training on password management, secure data handling, compliance with relevant regulations (such as GDPR or CCPA), and strategies to prevent fraud or unauthorized access to sensitive information.

Updates and New Feature Training: Provide ongoing training whenever new features or updates are introduced to the e-commerce platform. This ensures that administrators, vendors, and users are aware of and can take advantage of any enhancements or changes that may impact their experience or workflows.

3.8.2 Packaging Requirements

The system will be packaged within a dedicated folder, accompanied by a comprehensive README file that provides a detailed description of its functionalities and usage

instructions. This packaging approach ensures that users have all the necessary information readily available to understand and effectively utilize the system

3.8.3 Legal Requirements

As a legal requirement, our system must securely retain and protect all files, texts, images, and user information submitted by individuals. We prioritize the privacy and security of user data by implementing industry-standard encryption, robust storage protocols, and regular security updates to mitigate potential risks.

To maintain compliance and ensure legitimacy, we adhere to strict guidelines regarding the handling of sensitive banking information. Our system does not store any user banking details, such as credit card passwords, within our database. This strict policy helps safeguard users' financial information and reduces the risk of unauthorized access or data breaches.

In adherence to legal and regulatory standards, we have implemented secure payment gateways for handling transactions. These trusted third-party services ensure the secure processing of payments while keeping users' banking credentials confidential throughout the transaction process.

By fulfilling these legal requirements, we prioritize the protection of user data, earning their trust in our platform's security measures. We continuously monitor and update our security practices to align with evolving legal and industry standards, ensuring ongoing compliance and providing users with a safe and legitimate environment for their interactions and transactions.

It's important to note that while we meet legal requirements, users should also take measures to protect their personal information and practice safe online behavior.

4. Change Management Process

Given that this project is a digital product that gives service to users in real-time, it is expected that many change requests will come and the product is expected to evolve with the industry standards to keep its competitive edge.
The team has planned to devise a specific guideline to be followed whenever there is a market need for change in the product. However, the team makes sure that these guidelines won't create a condition within which changing and adding features becomes harder.
In other words, the guidelines we follow reside on the perfect spot between making changing as easy as possible, and not changing too much at once.

Change request Procedure

Our Admins and our PR representatives will have a continuous outlook for the general public opinion towards our product specifically and towards our product and generally towards the industry.

These opinions will be objectified and made into feasible reports by our professionals to make them easy to incorporate into our change.

Change Evaluation and prioritization

The requirements that were gained from the above method will not all make it to the final product, rather many will fail on the thorough evaluation step. This system ensures that our product will have a lasting legacy and will be consistent in providing the best product for the market.

Change approval process

The changes that pass the above steps will be approved if the majority of the team members agree to approve and incorporate the said change with a 50 + 1 vote.

Documentation Update

Every time there is a change that passes the above criteria and makes it to be incorporated in the product there is a need to update and edit this SRS document so that every change is documented nicely and descriptively.

Communication Plan

Whenever there is a change in the process our team will release a communication for the general public and our customers explaining the changes, how the changes will affect our customers, why we implemented the changes, and give a detailed explanation of how the user benefits from the changes.

Appendix

Appendix #1- Industry Impact Statement

This appendix elucidates how the development of the multi-vendor e-commerce website will contribute to and positively impact the technology industry.

The introduction of a cutting-edge multi-vendor e-commerce platform represents a technological leap, offering a dynamic and feature-rich solution that aligns with contemporary industry standards. The incorporation of modern technologies, such as artificial intelligence for personalized recommendations and machine learning for data analytics, positions the platform at the forefront of technological innovation.

Empowering independent sellers and vendors through a robust online marketplace fosters economic growth within the technology sector. By providing a platform for small and large enterprises alike, the technology industry gains a more diverse and resilient ecosystem.

References

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