|  |
| --- |
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# Introduction

## Purpose

This document provides a detailed description of the software requirements for the Online Coffee Store. Its purpose is to define the functionalities and constraints of the system to ensure it meets user needs and expectations

## Scope

The Online Coffee Store will allow users to browse, order, and purchase various coffee products online. It will support user accounts, a shopping cart, payment processing, and order tracking, enhancing the shopping experience.

## Definitions, Acronyms, and Abbreviations

SRS: Software Requirements Specification

UI: User Interface

API: Application Programming Interface

GDPR: General Data Protection Regulation

PCI-DSS: Payment Card Industry Data Security Standard

CRUD: Create, Read, Update, Delete

DBMS: Database Management System

HTTPS: Hyper Text Transfer Protocol Secure

MTBF: Mean Time Between Failures

MTTR: Mean Time to Repair

## 1.4 References

- Online Coffee Store Project Charter

- User Feedback Reports

- Competitor Analysis

- W3school

- Stack Overflow

- Chat GPT

- Gemin*i*

**Planning**

**Online coffee planning involves strategizing how to effectively sell coffee through e-commerce platforms. This process encompasses several key components, from selecting the right products to marketing and customer engagement. Here’s a breakdown of the essential elements involved in planning an online coffee business:**

**1. Choosing Your Business Model**

**You need to decide whether you will dropship coffee or roast it yourself. Dropshipping allows you to sell coffee without handling inventory, which can reduce overhead costs. On the other hand, roasting your own coffee gives you more control over the product quality and branding but requires more time and resources**

**2. Finding Suppliers**

**If you choose to roast your own coffee, sourcing high-quality beans is crucial. Look for suppliers who provide excellent customer service and product quality. Building a good relationship with your supplier can enhance your business's reputation and product offerings**

**3. Identifying Your Niche**

**Finding a specific niche within the coffee market can help differentiate your brand. Consider targeting specific demographics, preferences, or values that are currently underserved. This could involve focusing on organic coffee, specialty blends, or unique flavor profiles**

**4. Setting Up Your Online Store**

**Select an e-commerce platform that suits your needs. Popular options include Shopify, Squarespace, and WooCommerce, each offering different features and pricing structures. Your choice will impact how you manage inventory, process payments, and engage with customers**

**5. Marketing Your Coffee Brand**

**Effective marketing strategies are essential for attracting customers. This includes:**

**Content Marketing: Create informative content about coffee brewing methods, trends, and recipes to engage potential customers**

**Social Media Presence: Build a strong social media profile to connect with your audience and promote your products**

**Email Campaigns: Use email marketing to keep customers informed about new products and promotions**

**6. Customer Engagement and Retention**

**Engaging with customers through personalized emails, social media interactions, and loyalty programs can enhance customer retention. Encourage user-generated content by promoting hashtags related to your brand, which can help build community and trust**

**7. Analyzing Performance**

**Utilize analytics tools to track sales, customer behavior, and marketing effectiveness. This data can help you refine your strategies and improve your offerings over time**

**By carefully planning each aspect of your online coffee business, you can create a successful e-commerce venture that meets the needs of coffee lovers everywhere.**

**Analysis Phase**

* Project title: online coffee shop analysis .

Project overview : This project aims to conduct a deep analysis of the online coffee market, by identifying consumers and their preferences.

Presentation :

1. Research Methodology:

\* Data Collection: Data were collected through an online questionnaire directed at coffee consumers, in addition to analyzing sales data from five leading online coffee stores.

\* Analysis Tools: SPSS was used to analyze quantitative data, and content analysis of qualitative data extracted from questionnaires.

\* Sample: The sample included 500 participants from different age groups and nationalities, who were randomly selected.

\* Analysis Methods: Descriptive statistical analysis (such as mean, standard deviation) was used to analyze quantitative data, and thematic content analysis of qualitative data.

2. Key Findings:

\* Customer Preferences: The results showed that the majority of participants prefer single-origin specialty coffee, and that flavor is the most important factor in their choice of coffee.

\* Purchasing Behavior: Customers prefer to buy online due to convenience and the availability of various options, and they also look for offers and discounts.

\* Competitor Analysis: Comparison between online stores shows that Store X has an attractive website design and excellent customer service, while Store Y suffers from slow website loading.

\* Market trends: There is an increasing demand for plant-based and decaf coffee, and there is a growing interest in sustainable coffee companies.

1. Recommendations:

\* Product development: Focus on developing new and innovative coffee products, such as nitrogen coffee or coffee blended with other beverages.

\* Marketing: Invest in social media marketing, and offer special offers to new customers.

\* User experience: Website design should be improved to be more user-friendly, and multiple payment options should be provided.

\* Operations: Supply chain should be improved to reduce delivery time, and provide 24/7 customer service.

1. Conclusion:

This analysis showed that the online coffee market is growing, and customers are looking for a unique and personalized experience. By implementing the recommendations mentioned, online stores can boost their sales and increase customer loyalty.

Feasibility Study for an Online Coffee Store Project

1. Executive Summary:

This project aims to establish an online store specialized in selling different types of coffee, with a focus on providing a unique shopping experience for customers. The study indicates a promising market for online coffee, especially with the increasing demand for distinctive products and flexibility in shopping. The project is expected to achieve sustainable profits by targeting a wide segment of customers interested in high-quality coffee.

1. Project Description:

\* Project Idea: Establishing an online store that offers a variety of specialty coffee beans, coffee machines, and related accessories.

\* Products and Services:

\* Specialty coffee beans from different regions of the world.

\* Home and commercial coffee makers.

\* Coffee cups and flasks.

\* Coffee preparation accessories (grinders, filters, etc.).

\* Monthly subscription service for coffee beans.

\* Target Market:

\* Coffee lovers looking for high quality and variety of options.

\* Companies and offices that need to provide coffee for their employees.

\* Individuals who prefer online shopping.

1. Market Study:

\* Market Size: Estimate the size of the online coffee market in your target area.

\* Competitors: Analyze the most prominent competitors in the market, their strengths and weaknesses.

\* Opportunities: Identify gaps in the market that the project can exploit (such as focusing on a specific type of coffee or excellent customer service).

\* Challenges: Identify potential challenges, such as intense competition and high shipping costs.

1. Marketing Plan:

\* Marketing Strategy: Focus on online marketing (social media, search engines, email marketing).

\* Marketing Channels: Create an attractive website, leverage e-commerce platforms, collaborate with coffee influencers.

\* Marketing Budget: Determine the budget allocated for marketing activities.

1. Operational Plan:

\* Supply Chain: Identify suppliers of coffee beans and other products.

\* Storage and Shipping: Determine storage location and shipping methods.

\* Customer Service: Determine customer service mechanism (responding to inquiries, managing complaints, etc.).

1. Financial Analysis:

\* Costs: Estimate initial costs (website creation, inventory purchase) and operational costs (rent, salaries, marketing).

\* Revenue: Estimate expected revenue based on expected sales volume.

\* Break-even point: Calculate the break-even point that must be achieved to make a profit.

\* Cash flow: Analyze expected cash flows during the first years of the project.

\* Return on investment: Estimate expected return on investment.

1. Financial evaluation:

\* Sensitivity analysis: Analyze the impact of changes in key factors (such as product prices, operating costs) on profitability.

\* Risk assessment: Identify potential risks (such as changing competition, changes in consumer preferences) and develop plans to mitigate them.

1. Conclusion and recommendations:

\* Summarize the most important findings of the study.

\* Evaluate the project’s financial and operational feasibility.

\* Provide clear recommendations on moving forward with the project.

----------------------------------------------------------------------------------------------------------------------------

### **1. **Basic Requirements for the Project :****

#### **A. Website**

* ****Description****: An e-commerce platform showcasing a variety of coffee types and equipment. It should be user-friendly and quick to navigate.
* ****Components****:
  + An attractive and responsive design that meets the needs of different devices.
  + A Content Management System (CMS) for easy updates of products and content.
  + Search and filtering capabilities for products.

#### **B. Payment System**

* ****Description****: A secure and integrated system for processing online payments.
* ****Components****:
  + Support for multiple payment methods such as credit cards, PayPal, and digital wallets.
  + Security measures to protect customers' financial data.
  + Support for cash transfers (if necessary).

#### **C. Customer Support**

* ****Description****: A comprehensive system to assist and support visitors and customers.
* ****Components****:
  + Customer service via live chat or phone available 24/7.
  + A Frequently Asked Questions (FAQ) section to address common customer inquiries.
  + Email support for more complex issues.

#### **D. Product Inventory**

* ****Description****: Management of the quantity and availability of the required coffee and equipment.
* ****Components****:
  + Comprehensive lists specifying types of coffee and equipment along with their prices.
  + An inventory tracking system to manage stock levels and update usage.
  + Regular assessments of product quality and supplier reviews.

### **2. **Technical Requirements****

#### **A. Website Hosting**

* ****Description****: A reliable hosting service used to operate the website.
* ****Components****:
  + Fast hosting with a high uptime guarantee (99.9%).
  + Protection against cyber-attacks and regular backups.

#### **B. Analytical Tools**

* ****Description****: Tools to analyze user data to gauge website performance and understand customer behavior.
* ****Components****:
  + Google Analytics or similar analytics tools to monitor traffic and sales.
  + Tracking marketing campaigns to measure their success.

### **3. **Product Promotion Requirements****

#### **A. Marketing Plan**

* ****Description****: A comprehensive strategy to attract customers and increase brand awareness.
* ****Components****:
  + Paid advertising on social media platforms.
  + Blog content focusing on the benefits of coffee and how to prepare it.

#### **B. Influencer Collaborations**

* ****Description****: Partnerships with social media influencers to promote the brand.
* ****Components****:
  + Selection of suitable influencers whose audience aligns with your target market.
  + A collaboration plan that includes content and incentives.

### **4. **Legal and Administrative Requirements****

#### **A. Business Licenses**

* ****Description****: Legal licenses required to operate an online store selling food products.

#### **B. Privacy Policy**

* ****Description****: A document outlining how customer personal data is collected and used.

#### **C. Terms of Use**

* ****Description****: The terms that define the rights and obligations of users when using the website.

### **5. **Technical Setup for Logistics Support****

#### **A. Order Management System**

* ****Description****: A system to monitor and manage orders from initiation to delivery.

#### **B. Shipping Partnerships**

* ****Description****: Establishing deals with shipping and logistics companies to ensure safe and timely deliveries.
* ****Components****:
  + Multiple shipping options to meet customer needs.
  + Continuous updates on the shipping status and delivery process.

------------------------------------------------------------------------------------**1. **Market Analysis Table****

| ****Element**** | ****Description**** |
| --- | --- |
| ****market Size**** | Estimated at approximately 2 billion EGP annually |
| ****Expected Growth**** | 10% annually over the next five years |
| ****Target Audience**** | Young adults aged 18 to 35, coffee enthusiasts |
| ****Behavior Trends**** | Prefer online shopping, high interest in quality and brands |
| ****Current Trends**** | Increasing interest in specialty coffee and pour-over coffee |

### **2. **Competitor Analysis Table****

| ****Competitor Name**** | ****Type of Coffee**** | ****Strengths**** | ****weaknesses**** |
| --- | --- | --- | --- |
| ****X Cafe**** | Arabic coffee, Espresso | Strong reputation, diverse product range | High prices |
| ****Z Coffee**** | Specialty coffee | High quality, fast delivery service | Limited presence in areas |
| ****Online Store Y**** | Instant coffee and quick brew options | Competitive prices, wide selection | |  | | --- | | Lower product quality | |

### **3. **Feasibility Study Table****

| ****Aspect**** | ****Description**** |
| --- | --- |
| ****Technical Feasibility**** | Availability of technology and resources for the online platform |
| ****Economic Feasibility**** | Projected revenues vs. initial investments and ongoing costs |
| ****Legal Feasibility**** | Compliance with local regulations for food and e-commerce businesses |
| ****Operational Feasibility**** | Ability to manage operations, supply chain, and logistics effectively |
| ****market Feasibility**** | Assessment of market demand and customer acceptance of the product |

### **4. **Marketing Strategies Table****

| ****Strategy**** | ****Description**** |
| --- | --- |
| ****Social media Advertising**** | Utilize Facebook and Instagram to target potential customers |
| ****Content marketing**** | Create a blog about the benefits of coffee and different brewing methods |
| ****Promotional Offers**** | Provide discounts and free shipping on the first order |
| ****Influencer Collaborations**** | Partner with coffee influencers on social media |

### **5. **Project Requirements Table****

| ****Requirement**** | ****Description**** |
| --- | --- |
| ****website**** | Develop a comprehensive e-commerce site with a user-friendly interface |
| ****Payment System**** | A secure payment gateway that accepts credit cards and digital wallets |
| ****Customer Support**** | 24/7 customer service support via chat or phone |
| ****Product Inventory**** | Import coffee and equipment from reliable suppliers |

### **6. **Risk Assessment Table****

| ****Risk**** | ****Description**** | ****mitigation Plans**** |
| --- | --- | --- |
| ****Intense Competition**** | Many options available for customers | Offer unique products and excellent customer service |
| ****Price Volatility**** | Rising costs of raw materials | Establish relationships with suppliers for better pricing |
| ****Supply Chain Issues**** | Delays in shipping or shortages in products | Have multiple supplier alternatives available |

## Overview

## ***This SRS is organized into several sections: system description, specific requirements, and additional requirements.***

* 1. The system is designed to operate in a web-based environment and supports multiple user roles (customer, admin, guest). It also integrates with a payment gateway.

# 2. General Description

## 2.1 Product Perspective

The Online Coffee Store is a web-based application accessible through standard web browsers. It will interface with third-party payment gateways and an inventory management system. The product will be designed for scalability to accommodate future growth.

## 2.2 Product Functions

- User registration and authentication

- Product browsing, searching, and filtering

- Shopping cart functionality

- Secure order processing and payment

- Order tracking and history

- User reviews and ratings

- Admin dashboard for product and inventory management

## 2.3 User Characteristics

- Customers: Individuals seeking to purchase coffee products online ,

And Can register, log in, browse, search, add to cart, checkout, track

- Admins: Staff members responsible for managing products, orders, and customer inquiries.

## 2.4 General Constraints

- The system must support secure HTTPS connections

- Requirements to integrate with external systems such as payment gateways, shipping services, and inventory management systems.

- Require implementation of encryption, secure authentication, and compliance with security standards

1. **Legal and Regulatory Compliance**

- Adherence to e-commerce regulations, including consumer protection laws and data privacy regulations (e.g., GDPR).

- Compliance with food safety standards for the sale of consumable products.

2. **Payment Processing**

- Integration with secure payment gateways that comply with PCI-DSS standards.

- Support for multiple payment methods (credit/debit cards, digital wallets) while ensuring transaction security.

3. **Inventory Management**

- Accurate real-time tracking of inventory levels to prevent overselling or stockouts.

- Integration with inventory management systems for efficient stock control.

4**. Performance and Scalability**

- The system must handle a specified number of concurrent users (e.g., 1000) without performance degradation.

- Quick load times for product pages (ideally under 2 seconds).

5. **User Interface and Usability**

- The UI must be intuitive and user-friendly, adhering to best practices for web design.

- Must be responsive across various devices (desktop, tablet, mobile).

6. **Security Requirements**

- Implementation of SSL certificates for secure data transmission.

- User data, including personal and payment information, must be encrypted and stored securely.

7. **Shipping and Logistics**

- Integration with shipping providers for accurate shipping rates and tracking.

- Compliance with shipping regulations for food products, including international shipping restrictions.

8. **User Account Management**

- Secure authentication mechanisms for user accounts (e.g., password policies, multi-factor authentication).

- Features for password recovery and account settings management.

9. **Content Management**

- Dynamic management of product descriptions, images, and pricing.

- Support for user-generated content, such as reviews and ratings, with moderation capabilities.

10. **Backup and Recovery**

- Regular backups of the database and user data to prevent data loss.

- A disaster recovery plan should be in place to restore operations quickly in case of a system failure.

11. **Accessibility**

- Compliance with accessibility standards (e.g., WCAG) to ensure usability for individuals with disabilities.

12. **Localization**

- Support for multiple languages and currencies, particularly if targeting international customers.

These constraints help ensure the online coffee store operates efficiently, complies with relevant regulations, and provides a positive user experience for customers.

## 2.5 Assumptions and Dependencies

(**Assumptions**)

1. **User Access**

- Users will have reliable internet access to browse and purchase products from the online store.

- Customers are familiar with basic online shopping processes and can navigate the website effectively.

2. **Payment Processing**

- Users will have valid payment methods (credit/debit cards, digital wallets) and are willing to make online transactions.

- Payment gateway services will be operational and secure for processing transactions.

3. **Product Availability**

- The inventory management system will be updated in real-time to reflect accurate product availability.

- Suppliers will consistently deliver coffee products and accessories to maintain stock levels.

4. **Regulatory Compliance**

- The business will remain compliant with local and international regulations governing e-commerce and food sales.

5. **User Support**

- Users will utilize available support channels (e.g., FAQs, live chat) if they encounter issues during their shopping experience.

**(Dependencies)**

1. **Third-Party Services**

- Dependency on third-party payment gateways for secure transaction processing (e.g., PayPal, Stripe).

- Reliance on shipping carriers for timely delivery of products to customers.

2. **Technology Stack**

- The online store's functionality depends on the selected technology stack (e.g., web hosting, database management systems, e-commerce platforms).

- Dependencies on content management systems (CMS) for managing product information and user content.

3. **Inventory Management System**

- The online store relies on an integrated inventory management system to track stock levels and automate reordering.

4. **Customer Relationship Management (CRM)**

- Dependency on CRM tools to manage customer interactions, marketing campaigns, and loyalty programs.

5. **Data Security**

- The operation of the online store depends on secure data storage and protection measures to ensure user privacy and compliance with regulations.

6. **User Engagement**

- The effectiveness of marketing efforts (e.g., email campaigns, social media) relies on user engagement and response to promotions.

# 3. Specific Requirements

This will be the largest and most important section of the SRS. The customer requirements will be embodied within Section 2, but this section will give the D-requirements that are used to guide the project’s software design, implementation, and testing.

Each requirement in this section should be:

* Correct
* Traceable (both forward and backward to prior/future artifacts)
* Unambiguous
* Verifiable (i.e., testable)
* Prioritized (with respect to importance and/or stability)
* Complete
* Consistent
* Uniquely identifiable (usually via numbering like 3.4.5.6)

Attention should be paid to the carefuly organize the requirements presented in this section so that they may easily accessed and understood. Furthermore, this SRS is not the software design document, therefore one should avoid the tendency to over-constrain (and therefore design) the software project within this SRS.

## 3.1 External Interface Requirements

### 3.1.1 User Interfaces

**Web Application UI**:

* **Design**: The user interface will be responsive and user-friendly, adhering to modern design principles. It should provide a seamless experience across desktop and mobile devices.
* **Pages**:
  + **Home Page**: Displays featured products, promotions, and categories.
  + **Product Pages**: Each product will have detailed information, including images, descriptions, price, reviews, and an "Add to Cart" button.
  + **Shopping Cart**: A summary of selected items, quantities, total price, and options to update or remove items.
  + **Checkout Page**: User input fields for shipping and billing information, payment details, and order confirmation.
  + **User Account Management**: Allows users to view and edit their profiles, manage addresses, and view order history.
* **Accessibility**: The UI will comply with WCAG guidelines to ensure accessibility for users with disabilities.

### 3.1.2 Hardware Interfaces

**erver Requirements**:

* The application will be hosted on cloud servers with a minimum of:
  + CPU: 4 cores
  + RAM: 16 GB
  + Storage: SSD with at least 100 GB of available space

**User Devices**:

The application should be accessible on a range of devices, including:

* + Desktops (Windows, macOS, Linux)
  + Tablets (iOS, Android)
  + Smartphones (iOS, Android)

### 3.1.3 Software Interfaces

**Web Technologies**:

* **Front-end**: The application will utilize HTML, CSS, and JavaScript frameworks (e.g., React, Vue.js) for dynamic and interactive UI.
* **Back-end**: The server-side will be built using technologies such as Node.js, Python

**Database Management System**: The application will interface with an RDBMS such as MySQL or PostgreSQL for data storage and retrieval.

**Content Management System (CMS)**: If utilized, a CMS (e.g., WordPress or custom-built) may be integrated for managing blog posts and marketing content.

### 3.1.4 Communications Interfaces

**Payment Gateway Integration**:

* The application will integrate with payment gateways (e.g., PayPal, Stripe) to securely process online transactions.

**Email Service**:

* Integration with an email service (e.g., SendGrid, Mailgun) for sending order confirmations, newsletters, and promotional emails.

**API Interfaces**:

* **RESTful APIs**: The application will expose APIs for external services, such as inventory management systems or analytics tools, allowing for data exchange and integration.

**Real-time Communication**:

* If applicable, integration with chat services (e.g., Twilio, Intercom) for live customer support and communication.

## 3.2 Functional Requirements

**1.1 User Registration and Login**

* Users must be able to create an account with an email address and password.
* The system must support account verification via email.
* Users should be able to log in and log out securely.

**1.2 Product Management**

* Admins must be able to add, edit, and remove products, including images and descriptions.
* The system should categorize products by type (e.g., beans, equipment) and allow for search and filtering options.

**1.3 Shopping Cart**

* Users must be able to add products to a shopping cart and view a summary of selected items.
* The cart must persist items between sessions for logged-in users.
* Users should be able to update quantities or remove items from the cart.

**1.4 Checkout Process**

* The system must facilitate a secure checkout process, allowing users to review their orders and select shipping options.
* Users should be able to enter shipping information and payment details securely.

**1.5 Order Management**

* Users must receive order confirmations via email after placing an order.
* The system should allow users to track their orders and view order history.
* Admins should be able to manage orders, including processing and updating status.

## 5 Non-Functional Requirements

**1 .User requirements:**

**1.1 Performance**

* The website should load quickly, and actions like searching, adding to cart, and checkout should be responsive.
* System Perspective: The system should have low response times for all operations, especially during peak usage

**1.2 Reliability**

* The website should be available 24/7 with minimal downtime.
* System Perspective: The system should have high availability, with redundancy and failover mechanisms in place.

**1.3 Availability**

* The website should be accessible from various devices (desktop, mobile, tablet) and browsers.
* System Perspective: The system should be compatible with multiple platforms and devices.

**1.4 Security**

* The website should protect user data and transactions with strong security measures.
* The system should implement robust security measures, including encryption, secure authentication, and regular security audits.

**1.5 Maintainability**

* User Perspective: The website should be easy to use and navigate.
* System Perspective: The system should be easy to maintain, update, and modify.

**1.6 Portability**

* User Perspective: The website should be accessible from different locations and devices.
* System Perspective: The system should be deployable on different hardware and software platforms.

**2-System Requirements:**

**2.1- Performance:**

* The system should respond to user requests within a specified time frame.
* Throughput: The system should be able to handle a certain number of transactions per second.
* Scalability: The system should be able to handle increased load as the business grows. Reliability

**2.2- Reliability:**

* The system should have a long MTBF.
* The system should have a short MTTR.
* Disaster Recovery Plan: The system should have a plan to recover from failures.

**2.3- Availability:**

* The system should be available for a specified percentage of the time.
* Redundancy: The system should have redundant components to minimize downtime.

**2.4- Security**

* Access Control: The system should have strong access controls to protect sensitive data.
* Encryption: The system should encrypt sensitive data.
* Penetration Testing: The system should be regularly tested for vulnerabilities.
* Maintainability

**2.5- Maintainability:**

* The system should be modular and easy to modify.
* Documentation: The system should be well-documented.
* Testability: The system should be easy to test.

**2.6- Portability:**

* The system should be able to run on different platforms.
* Configuration Management: The system should be easy to configure. configure.

## 3.6 Inverse Requirements

* The system should not have error messages that are unclear or unhelpful.
* The system should not load slowly or have frequent crashes.
* The system should not display incorrect product information or pricing
* The system should not collect or store personal data without explicit consent.
* The system should not violate copyright or trademark laws.
* The system should not have confusing or inconsistent navigation.

## **3.7 Design Constraints**

**. Technical Constraints**

* **Platform Compatibility**: The website must be compatible with multiple browsers (Chrome, Firefox, Safari, etc.) and operating systems (Windows, macOS, Linux).
* **Responsive Design**: The site must be designed to function seamlessly on various devices, including desktops, tablets, and smartphones.
* **Performance Optimization**: The system should be optimized for fast loading times (ideally under 2 seconds) to enhance user experience and reduce bounce rates.

**2. Security Constraints**

* **Data Encryption**: All sensitive user data, including payment information, must be encrypted both in transit (using SSL) and at rest.
* **Compliance with Standards**: The platform must adhere to relevant security standards, such as PCI-DSS for payment processing and GDPR for data privacy.
* **User Authentication**: The system should implement strong authentication methods (e.g., password complexity requirements, two-factor authentication) to protect user accounts.

**3. Regulatory Constraints**

* **E-commerce Regulations**: The platform must comply with local and international e-commerce regulations, including consumer protection laws and return policies.
* **Food Safety Compliance**: The online store must adhere to regulations concerning the sale of food products, including labeling and safety standards.

**4. Business Constraints**

* **Budget Limitations**: Development, marketing, and operational costs must be managed within a specified budget, influencing technology choices and feature implementations.
* **Time Constraints**: The project must meet specific deadlines for launch, which may limit the scope of features or require phased rollouts.

**5. Usability Constraints**

* **User Interface Design**: The design must prioritize user experience, ensuring that navigation is intuitive and accessible, particularly for users with disabilities (compliance with WCAG standards).
* **Content Management**: The system must allow easy updating of product information, images, and promotions without requiring extensive technical knowledge.

**6. Scalability Constraints**

* **Handling Traffic Loads**: The architecture must support scalability to accommodate spikes in traffic, especially during promotional events or holiday seasons.
* **Database Performance**: The database design must ensure efficient querying and data retrieval to maintain performance as the number of products and users grows.\

**7. Integration Constraints**

* **Third-Party Services**: The platform may need to integrate with various third-party services (payment gateways, shipping providers, CRM systems), which could impose limitations on design and functionality.
* **Legacy Systems**: If integrating with existing systems, the design must account for compatibility and data synchronization issues.

## 3.8 Logical Database Requirements

**1. Data Formats**

* **User Data**:
  + **UserID**: Integer
  + **Email**: String
  + **PasswordHash**: String
  + **PhoneNumber**: String
  + **Address**: Text
* **Product Data**:
  + **ProductID**: Integer
  + **Name**: String
  + **Description**: Text
  + **Price**: Decimal
  + **StockQuantity**: Integer
  + **ImageURL**: String
* **Order Data**:
  + **OrderID**: Integer
  + **OrderDate**: DateTime
  + **TotalAmount**: Decimal
  + **ShippingAddress**: Text
  + **OrderStatus**: String
* **Review Data:**
  + **ReviewID**: Integer
  + **Rating**: Integer
  + **Comment**: Text
* **Payment Data**:
  + **PaymentID**: Integer
  + **PaymentMethod**: String
  + **PaymentStatus**: String