KUZMA CLOTHING & SHOES
E-Commerce Website

Software Requirements Specification

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Revision History

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1. Introduction

The Software Requirements Specification (SRS) document serves as a comprehensive guide detailing the requirements necessary for the design and implementation of the Kuzma Clothing and Shoes ecommerce website. This document is intended to provide software engineers with all the information required to effectively develop the software product described herein.

1.1 Purpose

The purpose of this SRS is to outline the functional and non-functional requirements of the Kuzma Clothing and Shoes ecommerce website. It is written for software engineers, developers, project managers, quality assurance professionals, and other stakeholders involved in the development process.

1.2 Scope

1. **Software Product:** The software product to be produced is the Kuzma Clothing and Shoes ecommerce website.
2. **Functionality:** The software product will facilitate online shopping for clothing and shoes. It will allow users to browse, search, view product details, add items to a shopping cart, complete purchases, and manage their orders.
3. **Application:** The application of the software being specified is to provide a user-friendly platform for customers to explore and purchase clothing and shoes conveniently. The objectives include providing a seamless shopping experience, efficient order processing, and secure payment transactions.

1.3 Definitions, Acronyms, and Abbreviations

- **SRS:** Software Requirements Specification
- **UI:** User Interface
- **API:** Application Programming Interface
- **JWT:** JSON Web Token

1.4 References

1. "IEEE Guide to Software Requirements Specifications", IEEE Std 830-1998.
2. "System Requirement Specification for Kuzma Clothing and Shoes Ecommerce Website", Version 1.0, January 1, 2024, Kuzma Enterprises.
3. "React JS Documentation", React Community, https://reactjs.org/docs/getting-started.html

1.5 Overview

1. **Contents:** The SRS contains detailed specifications of the Kuzma Clothing and Shoes ecommerce website, including both functional and non-functional requirements.
2. **Organization:** The SRS is organized into sections covering the introduction, general description, specific requirements, analysis models, and appendices. Each section is further divided to provide clarity and facilitate understanding.

2. General Description

This section provides a broad overview of factors influencing the Kuzma Clothing and Shoes ecommerce website, aiding in understanding its requirements without specifying them explicitly.

2.1 Product Perspective

The Kuzma Clothing and Shoes ecommerce website stands as an independent platform within the realm of online retail, offering a unique selection of clothing and shoes to customers. While it may share similarities with other ecommerce websites in terms of functionality, its focus on curated fashion items and user experience sets it apart from competitors.

2.2 Product Functions

The software will perform several key functions to facilitate online shopping:

- Displaying product listings with detailed information, including images, descriptions, and prices.
- Allowing users to search for products based on various criteria such as category, brand, size, and price range.
- Enabling users to add items to their shopping carts, manage quantities, and proceed to checkout.
- Supporting secure payment processing through integration with third-party payment gateways.
- Providing users with order tracking and status updates to monitor the progress of their purchases.

2.3 User Characteristics

The eventual users of the Kuzma Clothing and Shoes ecommerce website include:

- Fashion-conscious individuals seeking trendy clothing and footwear options.
- Online shoppers accustomed to intuitive and seamless browsing experiences.
- Users with varying levels of technical proficiency, ranging from novice to experienced internet users.

Understanding these user characteristics will influence the specific requirements of the website, such as the design of the user interface and the implementation of user-friendly navigation features.

2.4 General Constraints

Constraints affecting the design and development of the system may include:

- Compatibility requirements with different web browsers and devices to ensure a consistent user experience across platforms.

- Compliance with industry standards and regulations regarding online payment processing and data security.
- Technical limitations imposed by the chosen web development framework and hosting environment.

These constraints will guide the decision-making process during system design and implementation, ensuring that the final product meets both functional and non-functional requirements.

2.5 Assumptions and Dependencies

Factors affecting the requirements stated in the SRS include:

- Availability of necessary hardware and software components, such as web servers and database management systems.
- Dependence on external services and APIs for functionalities like payment processing and order fulfillment.
- Assumptions about user behavior and preferences, which may influence design choices and feature prioritization.

3. Specific Requirements

This section outlines the detailed requirements that guide the design, implementation, and testing of the Kuzma Clothing and Shoes ecommerce website. Each requirement is meticulously defined to ensure correctness, traceability, clarity, verifiability, prioritization, completeness, consistency, and uniqueness.

3.1 External Interface Requirements

3.1.1 User Interfaces

- The user interface (UI) shall feature a modern and visually appealing design, optimized for both desktop and mobile devices.
- User interactions shall be intuitive and seamless, with clear navigation paths and interactive elements.
- The UI shall provide accessibility features to accommodate users with disabilities, ensuring compliance with accessibility standards.

3.1.2 Hardware Interfaces

- The software shall not have direct hardware dependencies, operating solely as a web-based application accessible via standard web browsers.

3.1.3 Software Interfaces

- The software shall integrate with external services and APIs for functionalities such as payment processing, order fulfillment, and shipping tracking.

- API endpoints shall be documented and standardized to facilitate seamless communication with external systems.

3.1.4 Communications Interfaces

- The software shall utilize secure communication protocols (e.g., HTTPS) to protect sensitive user data during transmission.
- Error handling mechanisms shall be implemented to gracefully handle communication failures and network disruptions.

3.2 Functional Requirements

3.2.1 User Authentication

- **Introduction:** Users shall be required to create an account or log in to access certain features such as adding items to the shopping cart and completing purchases.
- **Inputs:** Users shall provide a valid email address and password to authenticate their identity.
- **Processing:** User credentials shall be verified against stored authentication data in the system's database.
- **Outputs:** Upon successful authentication, users shall be granted access to authenticated features and redirected to the appropriate pages.
- **Error Handling:** In case of invalid credentials or authentication failures, users shall be notified with appropriate error messages and provided with options for recovery or assistance.

3.2.2 Product Browsing and Searching

- **Introduction:** Users shall be able to browse products by category, brand, size, price range, and other attributes.
- **Inputs:** Users shall interact with filtering and sorting options to refine their product search results.
- **Processing:** The system shall retrieve and display relevant product listings based on user-selected criteria.
- **Outputs:** Users shall view product details, including images, descriptions, prices, and availability status.
- **Error Handling:** In case of search query errors or empty search results, users shall be informed with clear messaging and guided towards alternative actions.

3.5 Non-Functional Requirements

3.5.1 Performance

- The website shall load and render pages within 3 seconds on average, with a maximum page load time of 5 seconds under peak load conditions.

3.5.2 Reliability

- The system shall maintain a system uptime of at least 99.9% availability, allowing for scheduled maintenance windows.

3.5.3 Availability

- The website shall be accessible 24/7, with minimal planned downtime for maintenance activities communicated to users in advance.

3.5.4 Security

- User data shall be encrypted during transmission using industry-standard encryption protocols to ensure confidentiality.
- The system shall implement measures to prevent unauthorized access, data breaches, and malicious attacks, adhering to security best practices and compliance requirements.

3.5.5 Maintainability

- The software architecture shall be modular and well-documented, facilitating ease of maintenance, updates, and enhancements by development teams.

3.5.6 Portability

- The website shall be compatible with major web browsers (e.g., Chrome, Firefox, Safari) and responsive across various screen sizes and devices, including desktops, tablets, and smartphones.

3.7 Design Constraints

- The software shall adhere to industry standards and best practices for web development, including but not limited to HTML5, CSS3, and JavaScript ECMAScript standards.
- The software shall be designed to be scalable, allowing for future growth and expansion of features and functionalities.

3.9 Other Requirements

- The software shall comply with relevant legal and regulatory requirements governing online commerce, including consumer protection laws and data privacy regulations.
- The software shall support multiple languages and currencies to cater to a diverse global audience.
- The software shall provide analytics and reporting capabilities to track website performance, user behavior, and sales metrics for business analysis and decision-making purposes.

4. Analysis Models

4.1 Data Flow Diagrams (DFD)

Data Flow Diagrams (DFDs) are graphical representations of the flow of data within a system. They illustrate how data moves through processes and stores within the system. In the context of the Kuzma Clothing and Shoes ecommerce website, DFDs can provide a visual overview of how user inputs, such as product searches and purchases, are processed and managed by the system.
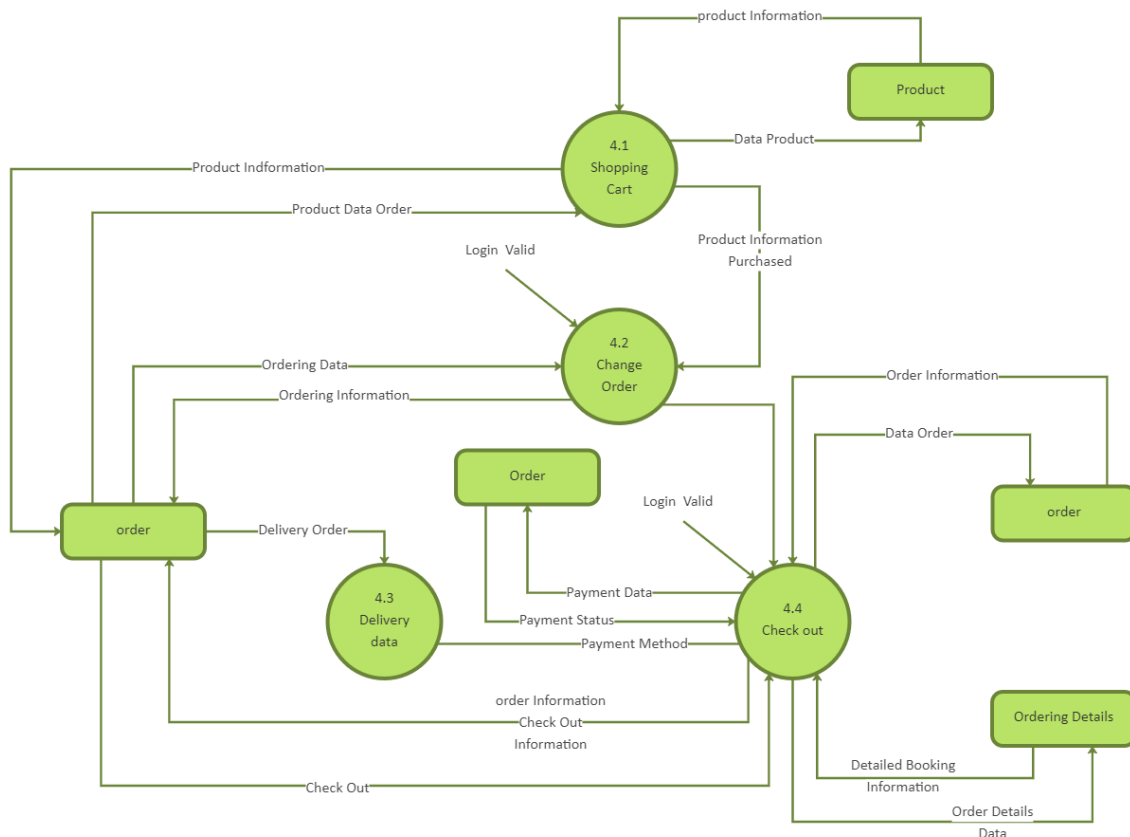
5.Github Link

jaivend/cloth-Store · GitHub