

Hamdard University  
Department of Computing  
Final Year Project



**SNEAKER VISION**  
**FYP-034/FL24**  
**Software Requirement Specifications**

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## Document Sign off Sheet

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## Revision History

Date	Version	Description	Author
	1.0		

## Definition of Terms, Acronyms, and Abbreviations

Term	Description
App	Application
ARKit	Augmented Reality Kit
AR Core	Augmented Reality Core
PCI DSS	Payment Card Industry Data Security Standard.
GDPR	General Data Protection Regulation
CCPA	California Consumer Privacy Act
App	Application
ARKit	Augmented Reality Kit

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# 1. Introduction

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Sneakers Vision, the cutting-edge online marketplace that is revolutionizing the way sneaker heads buy, sell and interact. Imagine a platform where you can easily find your dream sneakers, communicate with a thriving community of like-minded people, and participate in frictionless bidding procedures. This concept has become a reality because to Sneakers concept. Our objective is to build a vibrant community built on uniqueness, self-expression, and a common love of shoes. Sneakers Vision is more than just an online store; it's a community where you can comfortably bid, buy, sell, and network with other sneaker heads. Sneakers Vision prioritizes our community's requirements and goals, providing a user-friendly experience for both seasoned collectors and newbies. Our platform includes comprehensive search capabilities, real-time bidding, and safe transactions, making it easier than ever to locate and purchase the sneakers you've always desired. What distinguishes us is our dedication to building authentic interactions among sneaker heads. Our interactive features allow you to participate in discussions, share your collections, and learn from industry professionals and other collectors. Sneakers Vision is more than simply a marketplace; it's a flourishing environment that fosters sneaker culture. Join the Sneakers Vision family now and experience the ultimate sneaker destination. Together, we shall confidently and stylishly enter the future of sneaker culture. Accept the transformation of the sneaker market and join a community that values originality and a shared passion for the ideal pair of sneakers.

## 1.1 Purpose of Document

The purpose of this document is to provide a comprehensive Software Design Specification (SDS) for the Sneaker Vision project. It outlines the design and architecture of the software, including its functionalities, system requirements, and design methodology.

## 1.2 Intended Audience

The intended audience for this document includes the stakeholders involved in the development, design, and implementation of the SneakerVision application. This includes the project team, product managers, developers, UI/UX designers, quality assurance teams, and business analysts. Additionally, it is relevant for the marketing team responsible for promoting the app and customer support representatives who will assist users. Finally, the document is also for potential investors and partners interested in understanding the functionality and vision of SneakerVision.

## 1.3 Document Convention

This document will be using 10 font size and Arial font for paragraphs and 14 font size and Arial font for headers

## 1.4 Project Overview

SneakerVision is an innovative online marketplace designed to transform the way sneaker enthusiasts buy, sell, and interact. It addresses common issues faced by online shoppers, such as sizing concerns and discrepancies between product images and actual products, by integrating cutting-edge augmented reality technology. The platform offers features like virtual try-ons, a comprehensive catalog of sneakers, frictionless bidding procedures, and an engaging community space for users. By combining technology with user-centric design, SneakerVision ensures a seamless, accurate, and enjoyable shopping experience while saving users time and effort.

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## 2. Overall System Description

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### 2.1 Project Background

In today's fast-paced, digital-first world, the sneaker market has become more competitive than ever, with sneaker enthusiasts (sneakerheads) constantly on the lookout for unique, high-demand shoes. While there is a vast marketplace for sneakers online, many users still face challenges such as sizing discrepancies, difficulty in finding the right pair, and an overall frustrating shopping experience. SneakerVision was conceived as a response to these challenges. The vision for the project was to revolutionize the way people buy, sell, and interact with sneakers in the digital age. Through a combination of augmented reality (AR) technology, intuitive user interfaces, and a seamless online shopping experience, SneakerVision aims to provide a platform where users can browse, try on, and purchase sneakers without the typical hassles associated with online shopping. The platform provides users with the ability to virtually try on sneakers, ensuring a more accurate fit and visual representation of the product before purchasing. This solves a common issue with online shopping where users often find discrepancies between the image of the product and the actual product. In addition, SneakerVision offers a dynamic and engaging community where sneakerheads can communicate, share their collections, and participate in smooth bidding procedures for limited-edition releases. By focusing on user-centric features such as real-time feedback, easy payment integration, and an intuitive shopping experience, SneakerVision aims to become the go-to platform for sneaker lovers worldwide. This project is driven by the understanding that customers need a faster, more reliable, and engaging way to shop for sneakers online.

### 2.2 Problem Statement

Our application provides a solution for individuals who want to save time and avoid spending hours at shopping malls searching for the perfect shoes. We came up with the idea to enhance the online shopping experience, as we understand that many users who purchase shoes online often face issues with sizing and discrepancies between the image and the actual product. Our application, SneakerVision, offers an innovative solution by allowing users to virtually try on shoes using augmented reality technology. This will not only save users time and effort, but also provide a more accurate preview of how the shoes will look and fit, ultimately leading to a more satisfying and convenient shopping experience.

### 2.3 Project Scope

- User registration and login.
- Browse and search for sneakers.
- Catalog of available shoes with product details and images
- Integration of augmented reality technology to allow users to try on shoes virtually.
- Add sneakers to a cart and purchase them through the app.
- Payment Gateway Integration.
- User feedback and ratings system.
- The admin should be able to manage users' accounts, including creating new accounts, updating user information, and deleting user accounts.

### 2.4 Not In Scope

- Developing an e-commerce platform that supports selling other products besides sneakers.
- Shoe cleaning, repair, or maintenance services.
- User cannot customize or design their shoes.

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## 2.5 Project Objectives

- To make the user experience more convenient by eliminating the need for physical visits to the shoe stores.
- Utilize augmented reality (AR) to provide accurate virtual try-ons for confident purchasing decision.
- To provide a reliable preview of how the shoes will look on one's feet without the hassle of visiting stores.
- To enhance the user experience by providing a user-friendly design, easy navigation and a full-flex mobile application.
- Collaborate with retailer to boost sales through innovate shopping experience.

## 2.6 Stakeholders & Affected Groups

### End Users (Sneakerheads and Shoppers)

- **Role:** The primary users of the platform who will browse, virtually try on, purchase, and review sneakers.
- **Impact:**
  - Users will benefit from a personalized and innovative shopping experience, thanks to augmented reality (AR) features.
  - They will be able to discover and buy sneakers with greater ease, avoiding size mismatches and visual discrepancies.
  - Their feedback and ratings will influence the product offerings and user experience.
- **Needs:** A user-friendly interface, accurate sizing previews, smooth navigation, secure payment processing, and access to a variety of sneakers.

### Sneaker Sellers and Brands

- **Role:** Brands, sneaker manufacturers, and third-party sellers who will list their products on SneakerVision.
- **Impact:**
  - Sellers will have a new platform to reach a global customer base, which could increase sales and brand visibility.
  - Brands will need to ensure their product listings, images, and AR models are accurate and up to date.
  - Sellers will have access to user feedback, enabling them to better understand market preferences.
- **Needs:** A reliable platform for showcasing products, real-time sales data, easy product management, and visibility into customer reviews and preferences.

### Administrators and Moderators

- **Role:** The individuals responsible for managing user accounts, ensuring the smooth functioning of the platform, overseeing transactions, and maintaining product listings.
- **Impact:**

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- Administrators will be responsible for maintaining the integrity of the platform, handling user inquiries or disputes, and ensuring the security of the platform.
- Moderators may also be involved in overseeing the community aspect, ensuring a safe and positive interaction among users.
- Needs: Access to robust backend management tools for user and product management, reporting features, and moderation tools.

## Marketing and Sales Teams

- Role: Teams responsible for promoting SneakerVision, acquiring new users, and creating marketing strategies.
- Impact:
  - Marketing and sales teams will help drive user acquisition, product awareness, and engagement through targeted campaigns, promotions, and social media.
  - They will track user engagement, sales data, and community interactions to refine marketing strategies.
- Needs: Access to user analytics, promotional tools, and the ability to craft campaigns that resonate with sneakerheads.

## Investors and Stakeholders (Business Owners)

- Role: Individuals or organizations that have invested in the project or have a vested interest in the success of SneakerVision.
- Impact:
  - Investors will monitor the project's financial performance, user adoption, and overall success to ensure their investment yields a return.
  - Business owners and stakeholders will make decisions related to funding, resource allocation, and strategic direction.
- Needs: Regular financial reports, user growth metrics, and updates on the platform's performance in the market.

## Customer Support Team

- Role: The team responsible for assisting users with issues, handling returns or exchanges, and resolving payment disputes.
- Impact:
  - The customer support team will directly influence user satisfaction by providing timely assistance with any problems users encounter on the platform.
- Needs: A robust helpdesk system, access to transaction and user data, and communication tools to interact with users effectively.

## 2.7 Operating Environment

The operating environment for SneakerVision is primarily a digital ecosystem designed to deliver a seamless and interactive shopping experience for sneaker enthusiasts. The platform will be accessible via both iOS and Android devices, leveraging the latest technologies to ensure smooth functionality and responsiveness. The application will integrate augmented reality (AR) features through ARKit for iOS and



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ARCore for Android, enabling users to virtually try on sneakers before purchasing them. This environment will be supported by cloud-based infrastructure to ensure scalability, reliability, and data storage flexibility. The backend system will be built on secure server environments, ensuring user data and payment details are protected in compliance with privacy regulations like GDPR and CCPA. Additionally, the platform will integrate various payment gateways to enable smooth and secure transactions, while also supporting features like user account management, reviews, and product catalog management. The operating environment will also be optimized for different device specifications, ensuring compatibility across a range of smartphones and tablets. The seamless integration of all these technologies will create a robust and engaging platform that not only meets the functional needs of sneakerheads but also provides a secure, responsive, and user-friendly experience. The system will be supported by ongoing software updates to ensure it remains at the forefront of technological advancements and user expectations.

## 2.8 System Constraints

The SneakerVision platform operates within several system constraints that could affect its development, deployment, and scalability. One of the primary constraints is the device compatibility requirement, as the application needs to support both iOS and Android platforms, each with varying hardware specifications and operating system versions. This introduces the challenge of ensuring a consistent and high-quality user experience across multiple devices, including smartphones and tablets, with different screen sizes, processing power, and capabilities, especially for the AR features. Another constraint is related to augmented reality (AR) technology. While ARKit and ARCore enable virtual sneaker try-ons, these technologies require advanced hardware capabilities, such as motion sensors and high-quality cameras, which may not be available on all devices. Consequently, the platform must ensure that AR features perform optimally on supported devices while providing alternatives for users without AR capabilities.

The system must also operate within the bounds of data privacy regulations such as GDPR and CCPA, limiting how user data is collected, stored, and processed. Ensuring compliance with these regulations adds an additional layer of complexity, especially when dealing with sensitive information like payment details and personal preferences. Additionally, the payment gateway integration introduces another constraint, as the platform must support multiple secure and reliable payment methods, while adhering to the standards set by PCI DSS for transaction security. This also means the platform must ensure that international users can make payments in their preferred currencies, which adds complexity to the system's payment processing architecture. Lastly, server scalability poses a constraint, as the platform must handle a growing number of users and sneaker listings without compromising performance. This requires efficient cloud infrastructure and backend systems capable of scaling to accommodate spikes in traffic, particularly during high-demand sneaker releases or promotional events.

## 2.9 Assumptions & Dependencies

It is assumed that users have access to a smartphone or device compatible with augmented reality technology to fully utilize the virtual try-on feature. The app depends on reliable internet connectivity for seamless browsing, AR functionality, and transactions. It also requires partnerships with sneaker retailers and manufacturers to maintain a comprehensive and updated catalog. Payment gateway integration depends on third-party services, and compliance with legal standards for data protection and e-commerce regulations is necessary for smooth operations.

### 2.9.1 User Accessibility and Device Compatibility:

- **Assumption:** Users will have access to a smartphone or device compatible with augmented reality (AR) technology.
  - The platform assumes that a significant portion of its target audience uses modern smartphones that support AR features via ARKit (iOS) or ARCore (Android).
  - Users must also have devices with adequate hardware specifications, such as high-quality cameras and sufficient processing power, to ensure a smooth AR experience.

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- **Impact:** The lack of a compatible device may limit the ability of some users to fully utilize the virtual try-on feature, although other functionalities like browsing and purchasing will still be accessible.

#### 2.9.2 Internet Connectivity:

- **Assumption:** Reliable internet connectivity is necessary for the platform to function effectively.
  - High-speed internet is required for seamless browsing of sneaker catalogs, AR functionality, and secure transactions.
  - Features like virtual try-on, real-time pricing updates, and user reviews depend heavily on stable network connections.
- **Impact:** Users in areas with poor or inconsistent internet connectivity may face delays or disruptions, impacting their experience with the app.

#### 2.9.3 Partnerships with Retailers and Manufacturers:

- **Assumption:** The app depends on partnerships with sneaker retailers and manufacturers to maintain a comprehensive and updated product catalog.
  - Retailers and brands must provide timely updates on product availability, pricing, and inventory levels to ensure accuracy.
  - Collaboration with trusted suppliers ensures access to exclusive and limited-edition sneakers, which are critical to attracting the target audience.
- **Impact:** The absence of strong partnerships could result in a limited product catalog, reducing the platform's appeal to sneaker enthusiasts.

#### 2.9.4 Payment Gateway Integration:

- **Assumption:** Secure and efficient payment processing is dependent on third-party payment gateway services.
  - Integration with reputable payment gateways will enable various payment methods, including credit/debit cards and digital wallets.
  - The platform assumes these services will operate reliably, ensuring smooth transactions without errors or delays.
- **Impact:** Issues with payment gateway providers, such as downtime or security breaches, could disrupt transactions and affect user trust.

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## 3. External Interface Requirements

### 3.1 Hardware Interfaces

The hardware interfaces for the SneakerVision platform are focused on ensuring compatibility with the devices that users will access the application from, particularly smartphones and tablets. The primary hardware interfaces include:

- **Mobile Devices:** The application will interface with mobile devices running on iOS and Android platforms. This involves supporting a wide range of hardware from various manufacturers (e.g., Apple, Samsung, Google) to ensure compatibility with smartphones and tablets.
- **Camera and Sensors:** The augmented reality (AR) feature will rely on the camera and sensors (such as gyroscope and accelerometer) on the device to create the virtual try-on experience. The hardware must support high-resolution cameras and precise motion tracking for accurate AR rendering. This also includes optimizing the camera interface for 3D model integration of sneakers.
- **Touchscreen Interface:** The platform will heavily rely on touchscreen gestures for navigation, such as tapping, swiping, and pinching. The hardware must be capable of handling these inputs with sensitivity and responsiveness.

### 3.2 Software Interfaces

The software interfaces refer to the integration points between SneakerVision and other software components or external systems. These interfaces ensure that the platform can operate smoothly and securely. Key software interfaces include:

- **Mobile Operating Systems (iOS and Android):** The platform will rely on the iOS and Android operating systems to run the application. The application will integrate with system-level services, such as notifications, file management, and device settings. The platform will use ARKit for iOS and AR Core for Android to enable augmented reality functionalities.
- **Payment Gateway Integration:** The platform will interface with external payment processing systems (e.g., PayPal, Stripe, Apple Pay, Google Pay) through secure APIs. This integration allows for seamless transactions, including credit card processing, wallet payments, and currency conversion.
- **AR Software Interfaces:** The application will interface with AR-specific software components such as AR rendering engines and 3D modeling software for the virtual try-on feature. This includes using SDKs like ARKit (for iOS) and AR Core (for Android) for augmented reality development.

### 3.3 Communications Interfaces

The communications interfaces enable the SneakerVision platform to communicate with external systems and users over various networks. These interfaces ensure data exchange is secure and efficient. Key communication interfaces include:

- **Internet and Network Connectivity:** The platform requires an active internet connection for most functionalities, including browsing products, making purchases, and interacting with the AR features. The app will communicate via HTTPS (secure HTTP) protocols for encrypted data transfer.
- **Push Notifications:** The system will use push notification services such as Firebase Cloud Messaging (FCM) for Android or Apple Push Notification Service (APNS) for iOS to deliver timely updates, such as new sneaker releases, promotions, or order updates.

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- **Payment Gateway Communication:** The platform will communicate with external payment services via SSL/TLS encrypted channels to ensure secure financial transactions between users and third-party providers. This communication will handle order payments, refunds, and currency exchanges.
- **Data Syncing:** The app will synchronize user data (such as shopping cart contents and payment information) across multiple devices using cloud-based syncing protocols, ensuring users can access their information from any device.

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## 4. System Functions / Functional Requirements

### 4.1 System Functions

Ref #	Functions	Category	Attribute	Details & Boundary Constraints
R1	Record user purchase details, including items in the cart.	Evident	System Response Time	User receives confirmation of items added to the cart within 2 seconds. Purchase records should sync with the database within 5 seconds post-transaction.
R2	Reduce inventory quantities when a purchase is finalized.	Hidden	Concurrent User Load	Ensure inventory updates under a load of up to 1000 concurrent users with no delay greater than 3 seconds.
R3	Process payments securely via integrated payment gateway.	Hidden	Security & Compliance	Payment processing must adhere to <b>PCI DSS</b> standards, ensuring encryption of sensitive cardholder data.
R4	Provide real-time feedback during user interactions.	Evident	User Feedback Response	Feedback (e.g., "Added to Cart") must appear within 1 second after an action.
R5	Store user feedback and ratings for products.	Hidden	Data Storage	Feedback must sync with the database in real-time and allow admin moderation before public visibility.
R6	Provide access to customer support via chat or email.	Frill	Availability	Support response time within 24 hours for email inquiries and 1 minute for live chat during business hours.

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## System Attributes/ Nonfunctional Requirements

Attribute	Details and Boundary Constraints	Category
Response Time	(Boundary constraint) When recording a sold item, the description and price will appear within 5 seconds	Optional
Concurrent User Load	The platform must support a minimum of 10,000 users connected simultaneously without noticeable degradation in performance.	Mandatory
Availability	The platform must maintain an uptime of 99.9%, allowing less than 43 minutes of downtime.	Mandatory
Data Backup	Daily backups of user data and transactions must be performed, with a maximum recovery time of 15 minutes in case of failure.	Mandatory
Interface Metaphor	The user interface will be graphical, browser-based, and responsive for mobile and desktop environments.	Optional
Accessibility	The system must comply with WCAG 2.1 accessibility standards to support users with disabilities.	Mandatory
Payment Processing	Integration with PCI DSS-compliant payment gateways must ensure a transaction success rate of 99.5%.	Mandatory
Error Recovery	The system must log and recover from minor errors without user disruption, with downtime for critical errors capped at 15 minutes.	Mandatory

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## 4.2 Use Cases.

### 4.2.1 List of Actors

#### User (Customer):

- This person browses, searches, and purchases sneakers.
- Interacts with the augmented reality feature to virtually try on sneakers.
- Provides feedback, ratings, and reviews for products.
- Manages their profile information, such as name, address, and contact details.

#### System (SneakerVision Application):

- Handles user authentication and session management.
- Processes and secures payment transactions.
- Updates inventory based on purchases.
- Provides real-time recommendations based on user activity.

### 4.2.2 List of Use Cases

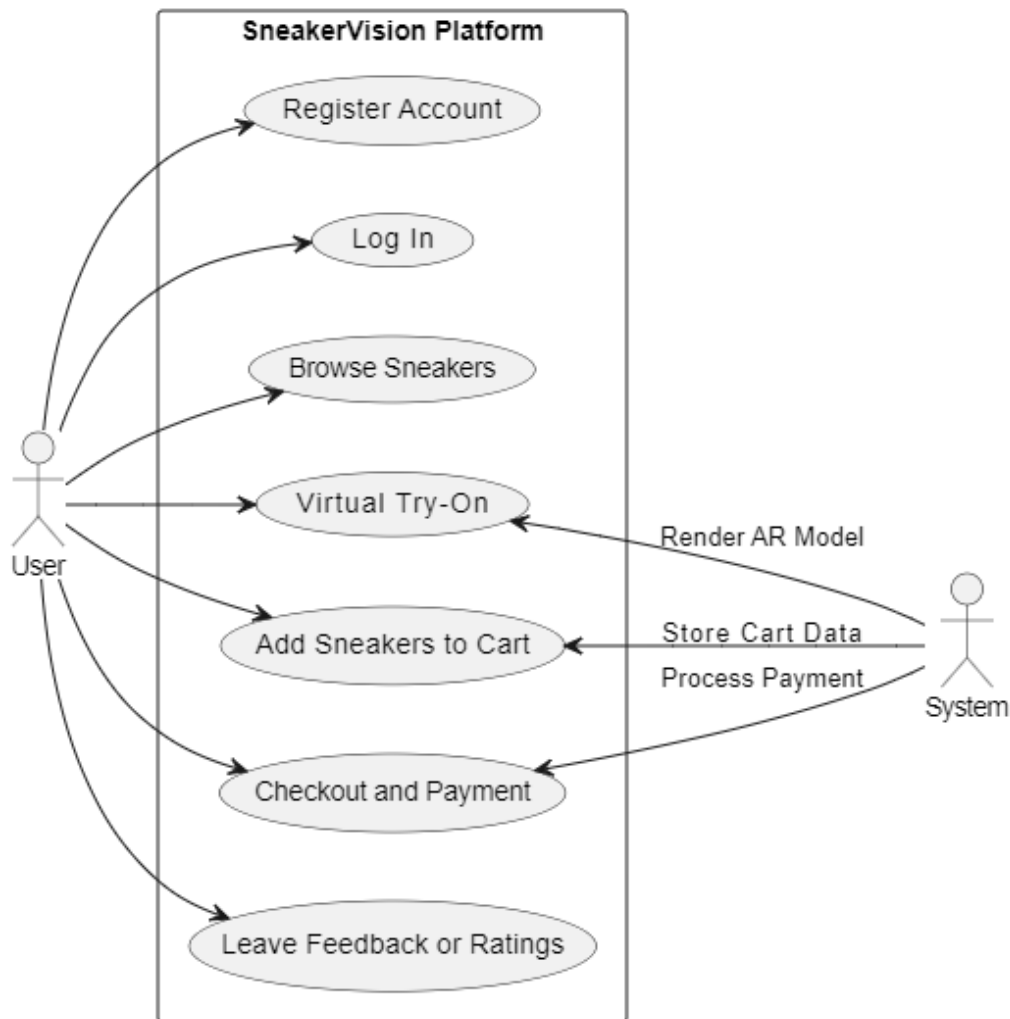
#### Register Account

Allows users to create a new account by providing their email, password, and basic information.

- **Log In**  
Enables users to access their account using registered credentials.
- **Browse Sneakers**  
Users can explore the catalog of sneakers displayed in categories or collections.
- **Search for Sneakers**  
Allows users to search for specific sneakers by name, brand, or features.
- **Virtual Try-On**  
Uses augmented reality (AR) technology to let users see how sneakers will look on their feet.
- **Add Sneakers to Cart**  
Users can add selected sneakers to their shopping cart for purchase.
- **Checkout and Payment**  
Facilitates secure payment processing and order confirmation.
- **Leave Feedback or Ratings**  
Allows users to review purchased sneakers and rate their experience.

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### 4.2.3 Use Case Diagram



### 4.2.4 Description of Use Cases

**Section: Main**

Name:	Buy Item
Actors:	Customer
Purpose:	Capture a sale and its payment.
Description:	A customer arrives at a checkout with items to purchase. The system records the items and collects payment. On completion, the customer leaves with the items.
Cross References:	<p>Functions: R1.1, R1.2</p> <p>Use Cases: Customer must have selected items to purchase and be ready to make payment.</p>



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Pre-Conditions	<ul style="list-style-type: none"> <li>Customer is registered and logged into the platform.</li> <li>Customer has selected sneakers and added them to the cart.</li> </ul>
Successful post-conditions	<ul style="list-style-type: none"> <li>The system successfully processes the payment.</li> <li>Order is confirmed, and the customer receives a receipt and confirmation.</li> </ul>
Failure post-conditions	<ul style="list-style-type: none"> <li>If payment fails, the transaction is canceled, and items remain in the cart.</li> <li>Customer is notified of the issue and prompted to retry payment.</li> </ul>

Typical Course of Events			
Actor Action		System Response	
1	Customer selects items and proceeds to checkout.	2.	System displays the cart summary and payment options.
3	Customer selects the payment method and confirms the purchase.	3	System validates the payment details and processes the payment.
4	...	5	System logs the completed sale, updates inventory, and generates a receipt.
6	Customer receives the receipt and order confirmation.	7	System schedules the delivery of items or updates pickup instructions.

#### Alternative Course

Step 3:	System indicates an error and prompts the customer to re-enter payment details
Step 4:	System notifies the customer of the failure and offers retry or alternative methods

#### Section: Pay by Cash

Typical Course of Events			
Actor Action		System Response	
1	Customer chooses cash as a payment method.	2	System provides instructions for cash-on-delivery (if applicable) or in-store payment.
3	Customer completes the payment in person.	4	System updates the payment status and confirms the transaction.

#### Alternative Courses

Step 1:	Customer opts for cash but cannot complete the payment. System offers the option to cancel the transaction or choose another payment method.
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## 5. Non - Functional Requirements

### 5.1 Performance Requirements

The SneakerVision platform must meet the following performance requirements to ensure a seamless user experience:

- **Response Time:** The application should provide a fast response time for user interactions. Search results should be displayed within 2 seconds, and product details should load within 1-3 seconds. Augmented reality (AR) features should be responsive, with the try-on feature rendering in under 2 seconds.
- **Scalability:** The platform must be able to handle high traffic loads especially during peak times (e.g., sneaker launches, sales events) without affecting performance. The system should be able to scale horizontally to accommodate a growing user base.
- **Transaction Throughput:** The application should be capable of processing hundreds of transactions per minute during high-demand periods, ensuring that payment gateways, order processing, and cart functionalities work efficiently under load.
- **Availability:** The platform should be available 99.9% of the time, ensuring minimal downtime for users across all regions.

### 5.2 Safety Requirements

The SneakerVision platform must meet the following safety requirements to ensure the well-being of users and secure transactions:

- **Data Protection:** All sensitive user data (e.g., payment details, personal information) must be securely encrypted during transmission and storage, using SSL/TLS for data in transit and AES for data at rest.
- **Secure User Authentication:** Users must be authenticated securely via OAuth2 or other industry-standard authentication methods, ensuring that only authorized individuals can access their accounts.
- **Error Handling:** The system must handle errors gracefully by providing informative error messages to the user and logging technical errors for system administrators, without exposing sensitive information.

### 5.3 Security Requirements

The SneakerVision platform must prioritize security to ensure safe transactions, user data protection, and system integrity:

- **Data Protection:** Sensitive user data (e.g., passwords, payment information) must be encrypted using SSL/TLS for data in transit and AES-256 for data at rest.
- **Role-Based Access Control (RBAC):** Assign specific access privileges to different user roles (e.g., Admin, User, Vendor) to limit access to sensitive features.

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- **Payment Security:** Integrate only PCI DSS-compliant payment gateways to ensure secure credit card transactions.
- **Regular Security Audits:** Conduct routine security checks, penetration tests, and vulnerability assessments to identify and mitigate risks.

## 5.4 Reliability Requirements

Reliability ensures the platform functions consistently and efficiently:

- **System Availability:** Ensure a minimum uptime of 99.9%, allowing users to access the platform with minimal interruptions.
- **Redundancy and Failover:** Employ redundant servers and failover mechanisms to prevent service disruption during hardware or network failures.
- **Data Backup:** Perform automatic daily backups of user data, product information, and transaction history to prevent data loss.
- **Error Recovery:** Implement mechanisms for detecting, logging, and recovering from system errors without user disruption.
- **Scalability:** Design the system to handle sudden spikes in traffic (e.g., during sales events) without degradation in performance.

## 5.5 Usability Requirements

The platform must provide a user-friendly and accessible experience:

- **Intuitive User Interface:** Ensure the platform is visually appealing and easy to navigate, with clear labels, intuitive menus, and consistent layouts.
- **Mobile Responsiveness:** Optimize the platform for use on various devices, including desktops, tablets, and mobile phones, ensuring seamless interaction across all screen sizes.
- **Clear Feedback Mechanisms:** Provide users with immediate feedback for their actions, such as confirmation messages for purchases or error messages for invalid inputs.
- **Help and Support:** Include an integrated help center, FAQs, and chat support to assist users in resolving issues or answering questions.

## 5.6 Supportability Requirements

To ensure smooth operation and ease of maintenance, the platform must meet the following requirements:

- **Error Logging and Monitoring:** Implement real-time error tracking and log system issues to enable quick troubleshooting and debugging.
- **Modular Architecture:** Use a modular design that supports easy updates, bug fixes, and feature enhancements without affecting the rest of the system.

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- **Documentation:** Maintain comprehensive developer documentation for the platform's architecture, APIs, and database schema to facilitate efficient maintenance and future development.
- **Third-Party Integration Support:** Ensure smooth integration with payment gateways, AR SDKs (e.g., ARKit, ARCore), and cloud services, with clear APIs and configuration settings.
- **Customer Support System:** Provide a backend dashboard for customer support to monitor user issues and provide timely assistance.

## 5.7 User Documentation

Comprehensive documentation should be provided to help users understand and navigate the platform:

- **User Manual:** A detailed guide covering platform features, account management, product search, AR try-on functionality, and checkout processes.
- **FAQs:** An extensive Frequently Asked Questions section addressing common user inquiries related to account setup, payment issues, returns, and AR features.
- **Privacy Policy:** A clearly written policy outlining how user data is collected, used, stored, and protected, ensuring compliance with data protection regulations.
- **Contact Information:** Provide accessible channels for contacting customer support via email, phone, or live chat for unresolved queries.

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## 6. References

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