SneakerXplore

Software Requirements Specification

Version 1.0

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Evan James
Mustafa Ismail
AJ Rose
Tafadzwa Marisa

Revision History

Date	Description	Author	Comments
2023-11-05	Version 1	Marisa Tafadzwa	First Revision

Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

Signature	Printed Name	Title	Date
A.R	AJ ROSE	Team Member	2023-11-05
M.I	MUSTAFA ISMAIL	Team Member	2023-11-05
E.J	EVAN JAMES	Team Member	2023-11-05

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1. Introduction

In this world of ever-evolving fashion and footwear, the demand for exclusive and limited edition sneakers is at an all time high. We have realised that in order to stay up to date with sneaker releases and to be able to actually get them in regards to dealing with resellers and bots taking your chance to get sneakers, you need an extensive list of sources of where and how to purchase these sneakers. So here at SneakerXplorer we are aiming to streamline the process for you by allowing our users to receive information about sneakers and when they release on our sneaker release date calendar, as well we want them to have the ability to purchase sneakers through third-party retailers like Nike, Adidas, StockX, and many more. SneakerXplorer is going to make sure that the average person looking to purchase sneakers can get the upper hand in this intense sneaker world of resellers and bots. We understand that staying ahead of the game is crucial for regular sneaker enthusiasts, so to address this we are creating a web application which is available to everyone with internet access all while being UI/UX friendly and easy to navigate. Our platform serves the purpose of being the ultimate companion for sneaker enthusiasts alike looking to purchase exclusive and limited footwear for a retail price and not the absurd resell price. Aswell SneakerXplorer will be region locked in Canada, the reason being that the ability to purchase limited sneakers through raffles is more mainstream in the U.S.A than it is in Canada, so we want to mainstream it and let more people know where sneakers can be bought in Canada.

As for our purpose of the web application, the core high level requirements that are needed for this application to function is the Third-Party Integration, Sneaker Price Comparison, Sneaker Calendar, and Notifications. These requirements are all high level, as we go through them all the rest are medium to low with requirements like User Signup/Login, Community Engagement, Security and Privacy, and analytics

1.1 Purpose

This document outlines the high-level software requirements for the SneakerXplore system, providing a clear understanding of what the system will do.

1.2 Scope

Software Product

The software product to be produced is the "SneakerXplore" platform, which includes both web and mobile applications. This product encompasses the following key features:

- **Price Comparison Engine**: This feature allows users to compare real-time sneaker prices across multiple retailers, both online and physical.

- **Release Date Calendar**: The system will provide users with an up-to-date calendar of sneaker release dates, complete with notifications and reminders for specific releases of interest.

- **Store Locator and Price Alerts:** Users will have access to a store locator feature, helping them find physical retailers selling specific sneakers nearby. Additionally, users can set price alerts to receive notifications when the price of a selected sneaker drops below a specified threshold.

- **User Reviews and Ratings**: The platform will enable users to provide reviews and ratings for sneakers and retailers, fostering a community-driven environment.

- **Personalised Profiles**: Users can create and manage personalised profiles, allowing them to save preferences and settings for a customised experience.

What the Software Will Do

The SneakerXplore software will facilitate the following:

- Enable users to make informed purchases by comparing sneaker prices across various retailers.
- Help users stay up to date on sneaker releases, allowing them to plan their purchases accordingly.
- Empower users to discover the best deals on sneakers by providing real-time price comparisons and price alerts.
- Foster a community of sneaker enthusiasts by allowing users to share their reviews and ratings.
- Provide a user-friendly and modern experience, making sneaker shopping more accessible.

What the Software Will Not Do

- The software will not engage in direct sales of sneakers to users. It will focus on providing information and facilitating connections with retailers.
- Detailed inventory management for retailers is not part of the software's scope. Retailers will be responsible for updating their inventory.
- The platform will not handle offline or physical transactions.
- Physical sneaker authenticity will not be verified by the platform. It will rely on data and insights from other stores, both physical and remote.

Relevant Benefits, Objectives, and Goals

- Simplify sneaker shopping for users, allowing them to make informed purchasing decisions.

- Empower users to track sneaker releases and discover the best deals on their favourite sneakers.
- Provide a platform where users can access up-to-date pricing information and community-driven reviews and ratings.
- Deliver a user-friendly and modern experience that enhances the accessibility of sneaker shopping.
- Offer valuable market insights to users and retailers, facilitating better decision-making.

The above scope clarifies what SneakerXplore aims to achieve, ensuring a common understanding of the project's objectives and limitations.

2. General Description

2.1 Product Perspective

The project perspective for SneakerXplore is that it is a new self-containing web application. This means that SneakerXplore is not an extension or replacement of any existing software. It is a standalone platform dedicated to revolutionising the sneaker shopping experience. As a new system, it will provide a unique and modern solution for sneaker enthusiasts, retailers, and budget-conscious shoppers.

2.2 System Context

SneakerXplore addresses several strategic issues and fulfils specific objectives:

- **Empowering Consumers:** SneakerXplore aims to empower consumers by providing them with comprehensive information on sneaker prices, release dates, and store locations. This assists users in making informed purchasing decisions and finding the best deals.
- **Supporting Retailers:** The platform supports retailers by driving customer traffic to their physical stores and online stores through price comparison and store locator features. It also provides a platform for user reviews and ratings, enhancing retailer visibility.
- **Fostering a Community:** SneakerXplore fosters a community of sneaker enthusiasts who can share their insights, reviews, and ratings. This creates a collaborative environment for users to exchange information and experiences.
- **Market Insights:** The platform generates valuable market insights by tracking sneaker prices and trends. This data can benefit both users and retailers in making data-driven decisions.

2.3 General Constraints

- **Data Gathering:** Gathering real-time data from various retailers' websites and APIs may pose technical challenges in terms of consistency and accuracy.
- **Data Privacy:** Ensuring the privacy and security of user data is a critical constraint. Compliance with data protection regulations is imperative.
- **System Performance:** The platform should be responsive and provide timely updates to users, making system performance a crucial factor.
- **User Experience:** Designing a user-friendly interface that caters to both beginners and experienced users is a design constraint that must be addressed.
- **Integration:** Integrating with various retailer systems and websites for price comparison and store locator features might pose integration challenges.
- **Budget and Resources:** The project must be completed within budget constraints and allocated resources.

2.5 Assumptions and Dependencies

ASSUMPTIONS

- *Data Availability:* We assume that we will have access to the necessary data from various retailers' websites and APIs for real-time price comparison, release date information, and store locator features.
- *User Engagement:* We assume that users will actively engage with the platform by providing reviews and ratings, contributing to the community aspect of SneakerXplore.
- *Regulatory Compliance:* We assume that the project team will comply with all relevant data protection and privacy regulations, ensuring the security of user data.
- *Stable Internet Connectivity:* We assume that users will have stable internet connectivity to access the platform's features, such as real-time price comparisons.

DEPENDENCIES

- *Retailer Data Sources:* The project is dependent on external data sources from various retailers. Any changes or disruptions in these data sources may impact the project's success and the accuracy of information provided.
- *Third-Party APIs:* SneakerXplore relies on third-party APIs for accessing data from different retailers. Any changes or discontinuation of these APIs may affect the platform's functionality.
- *User Participation:* The success of the community-driven features, such as user reviews and ratings, depends on active user participation. The project's effectiveness is dependent on users' willingness to contribute.
- *Data Privacy Regulations:* The project is dependent on compliance with data privacy regulations. Changes in these regulations may necessitate adjustments to the platform's data handling and security measures.
- *Technology Stack:* The project depends on the stability and reliability of the chosen technology stack. Any issues or vulnerabilities in the technologies used may affect the system's performance and security.

3.0 Functional Requirements

3.2.1 Real-Time Price Comparison Feature

Introduction: The real-time price comparison feature allows users to compare the prices of specific sneakers across multiple retailers, both online and physical stores. It empowers users to make informed purchasing decisions by displaying the best available deals and discounts.

Inputs:

- User's selected sneaker model.
- User's location (for store locator functionality).
- Retailer data feeds and APIs.

Processing:

1. The user selects a sneaker model they are interested in.
2. The system collects real-time pricing data for the selected sneaker model from various retailers' websites and APIs.
3. The system processes and normalises the pricing data for comparison.
4. The platform's algorithms analyse the data to identify the best deals, considering factors like price, shipping costs, and location.
5. The system displays the comparison results to the user.

Outputs:

- A user-friendly interface displaying price comparisons.
- Information on the lowest price, best deal, and retailer options.
- Links to retailers' websites for direct purchasing.
- Optional price alerts for the selected sneaker model.

3.2.2 Sneaker Release Date Calendar

Introduction: The Sneaker Release Date Calendar feature provides users with an up-to-date calendar of sneaker release dates. It allows users to stay informed about upcoming sneaker launches, set reminders, and plan their purchases accordingly.

Inputs:

- User preferences for specific sneaker brands or models.
- User-selected release dates or events to track.
- Data feeds from retailers and sneaker brands.

Processing:

1. The user selects preferred sneaker brands or models they want to track.
2. The system collects release date data from various sources, including retailers and sneaker brands.
3. The platform updates the release date calendar with the latest information.
4. Users can set notifications or reminders for specific release dates they are interested in.

Outputs:

- A user-friendly calendar displaying upcoming sneaker release dates.
- Notifications and reminders for the user's selected releases.
- Detailed information about each release, including the brand, model, and release location.

3.2.3 User Reviews and Ratings

Introduction: The User Reviews and Ratings feature allows users to provide feedback on sneakers and retailers. Users can rate their purchases, write reviews, and share their experiences with the SneakerXplore community, enhancing the platform's user-driven aspect.

Inputs:

- User-generated reviews, ratings, and comments.
- Sneaker and retailer identification.
- User profiles and preferences.

Processing:

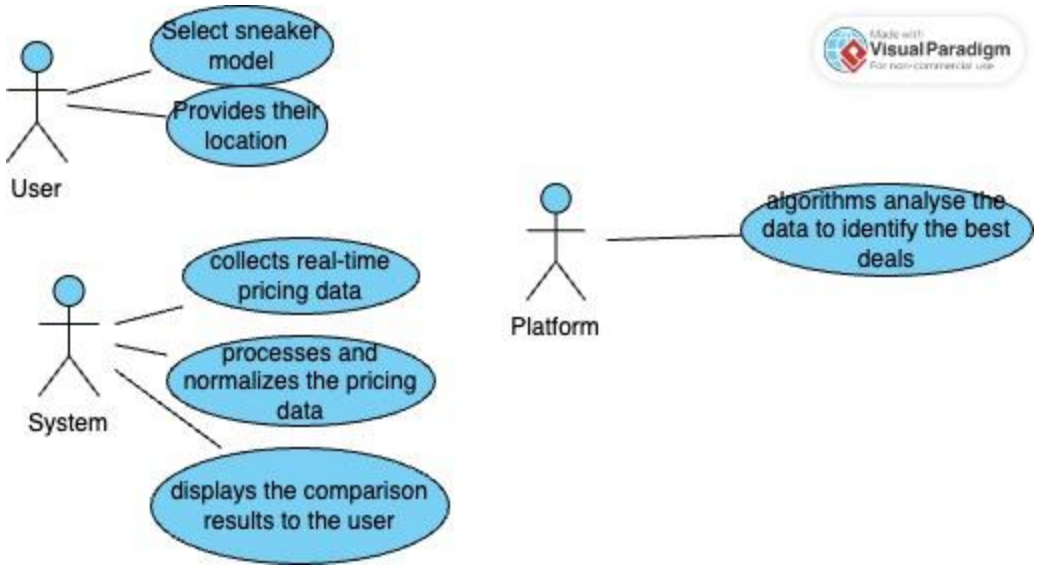
1. Users can rate and review sneakers they have purchased.
2. The system collects and organises user-generated content.
3. The platform calculates average ratings for sneakers and retailers.
4. Users can search and filter reviews based on their preferences.

Outputs:

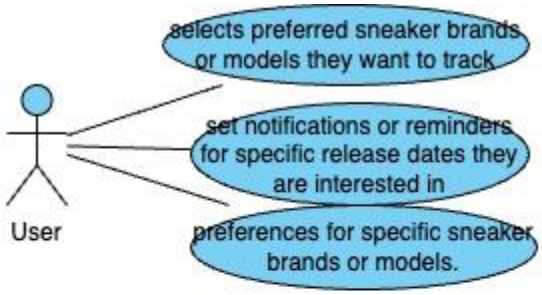
- User-generated reviews and ratings displayed on sneaker and retailer profiles.
- Average ratings for sneakers and retailers.
- User profiles showcasing their contributed content and preferences.

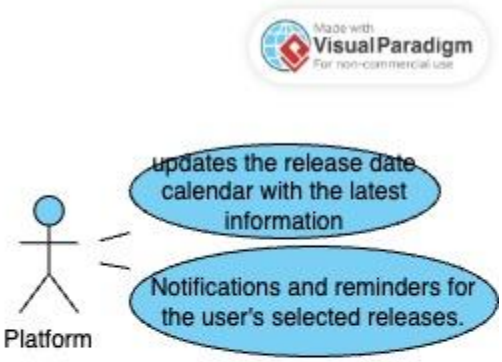
3.3 Use Cases

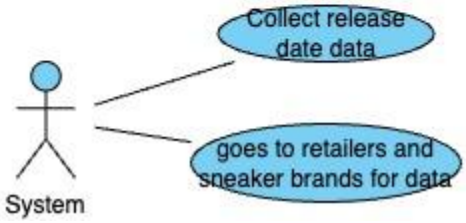
3.3.1 Use Case #1



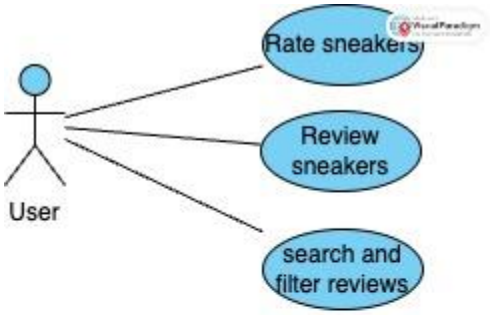
3.3.2 Use Case #2

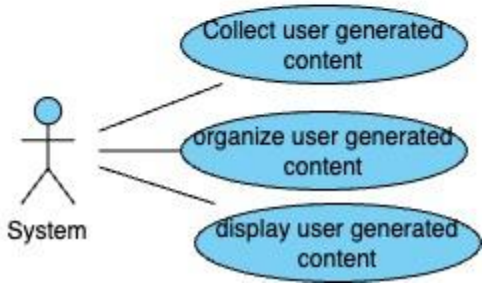






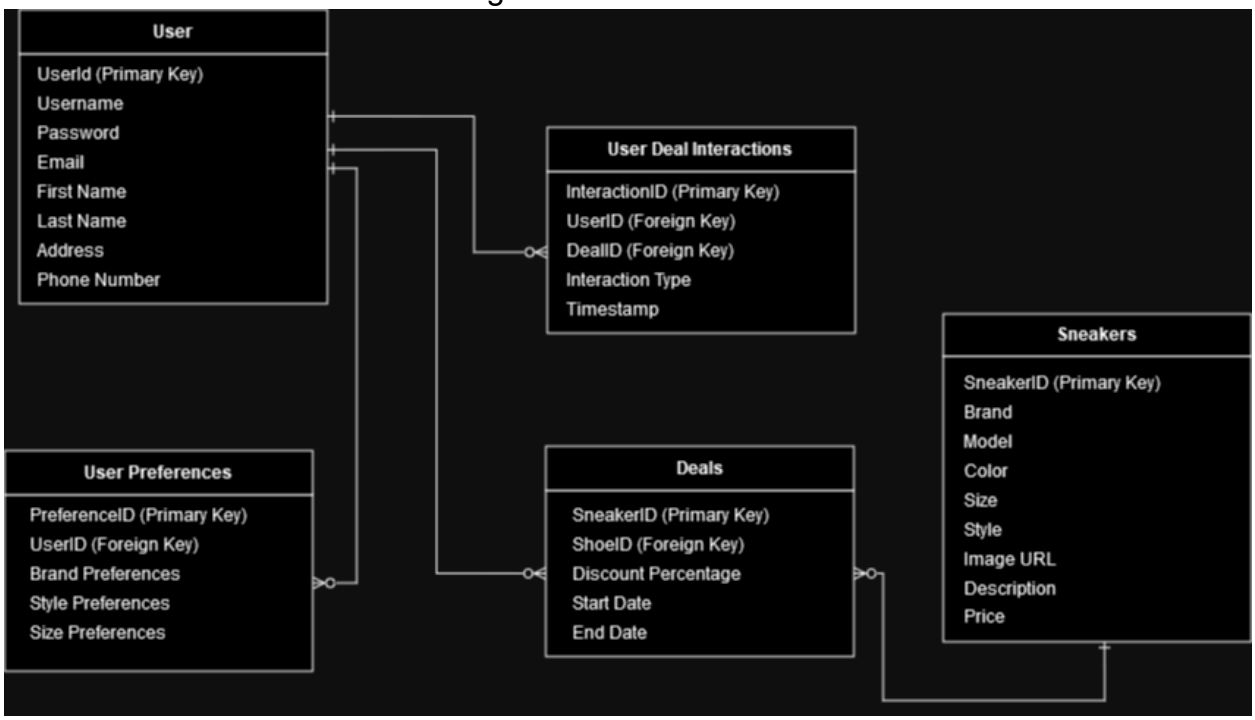
3.3.3 Use Case #2



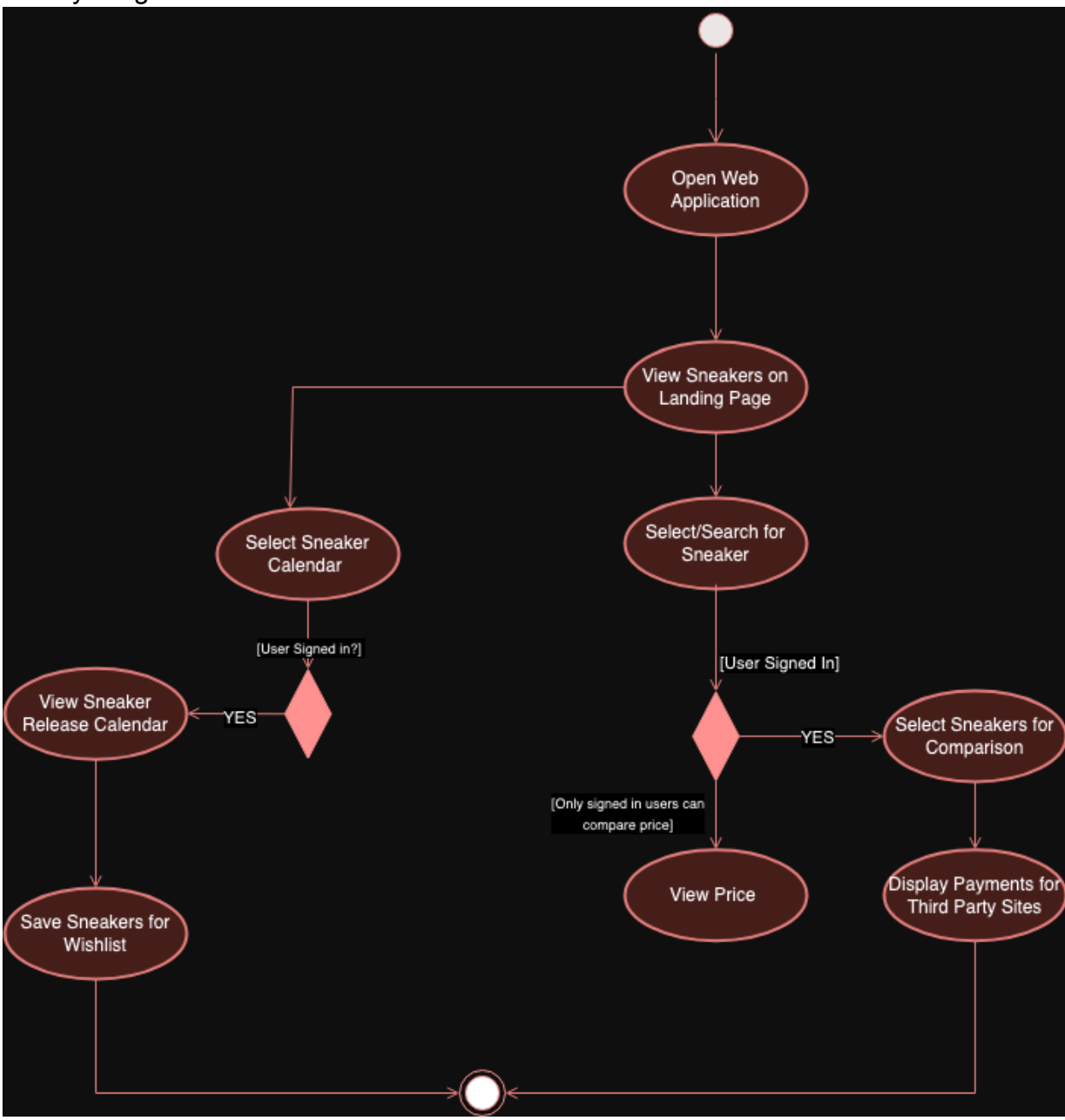


3.3 Data Modelling and Analysis

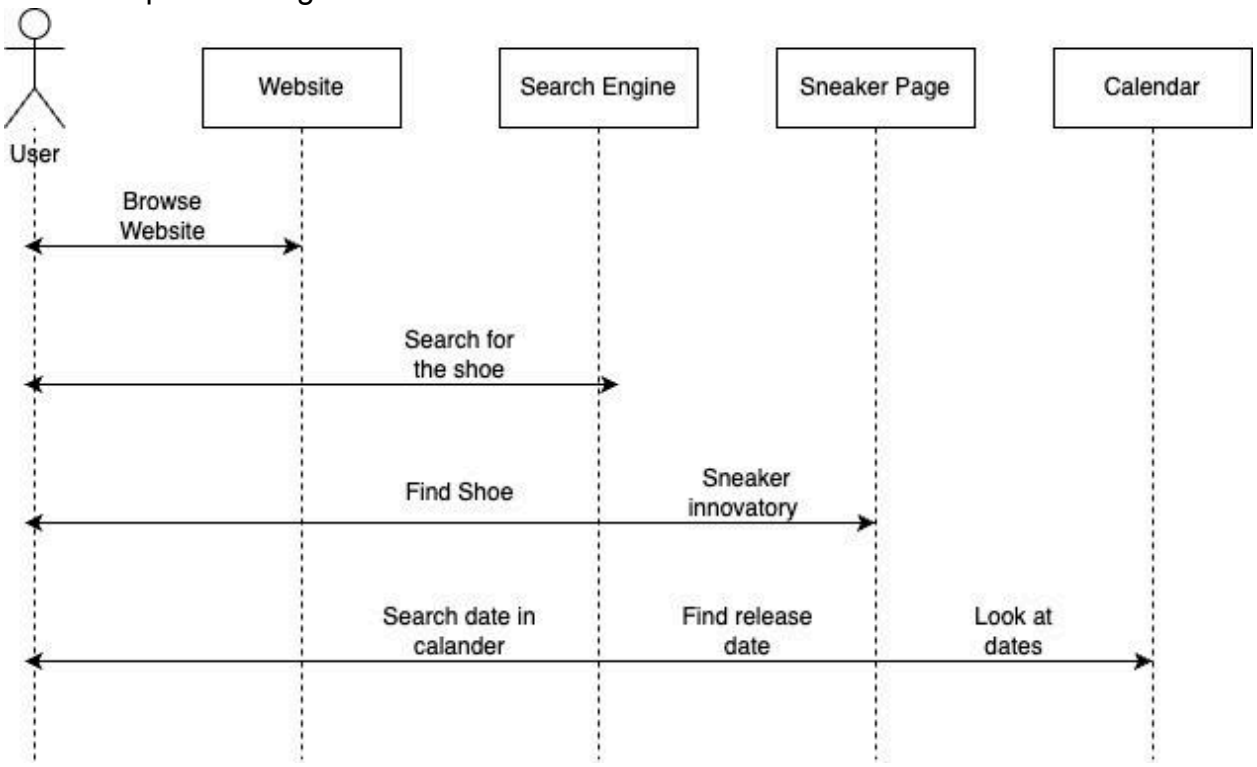
- Normalised Data Model Diagram



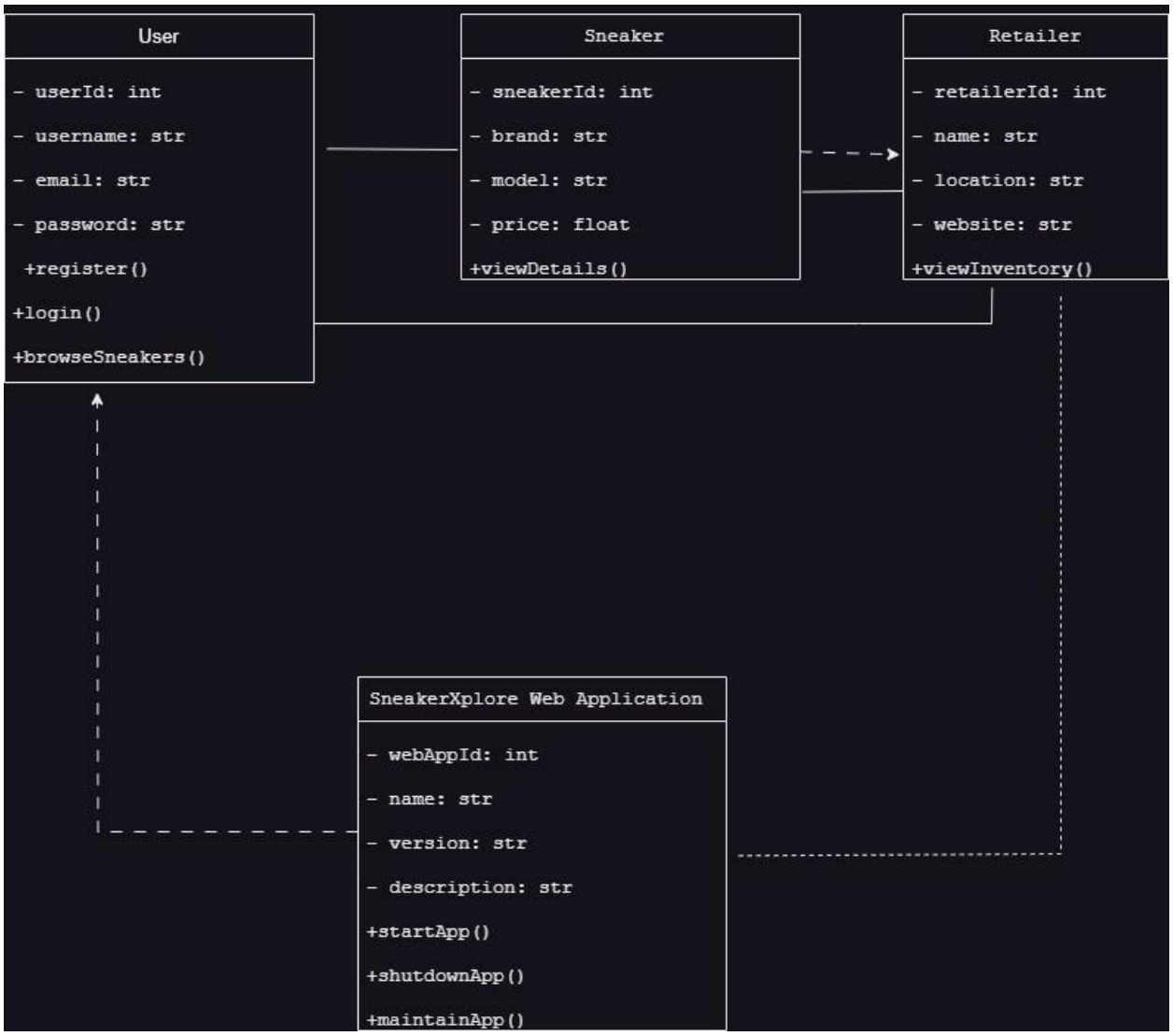
- Activity Diagrams



Sequence Diagrams

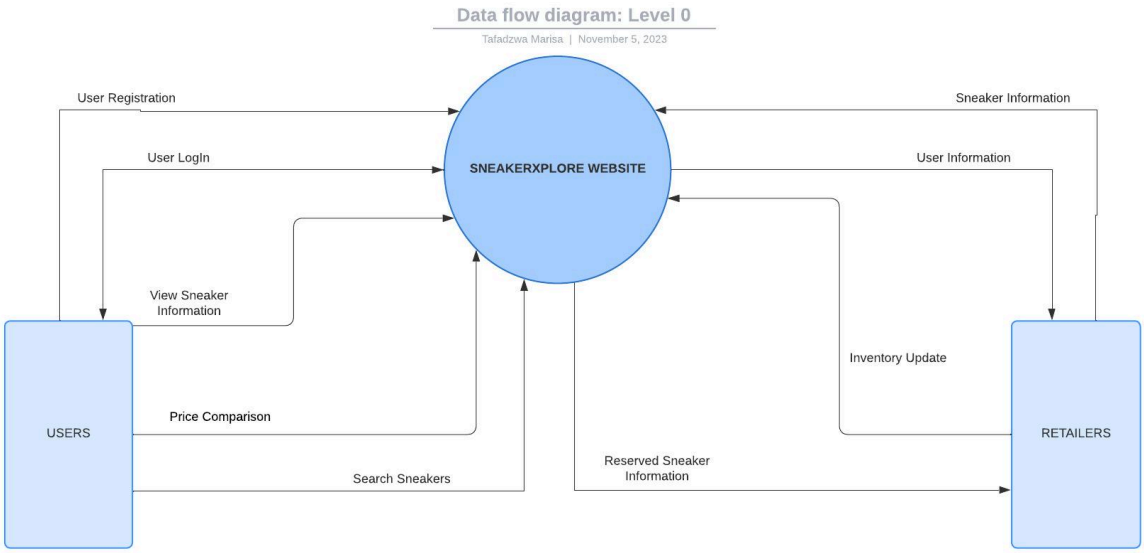


- UML Class Diagram



3.4 Process Modelling

- Data Flow Diagram



4.0 Non-Functional Requirements.

Non-Functional Requirements for SneakerXplore:

- **Performance**
  - Response Time: 95% of user interactions shall receive responses within 2 seconds.
  - Throughput: The system should be able to handle a minimum of 1,000 concurrent users without significant performance degradation.
- **Reliability**
  - Data Integrity: Data stored within the system should have a data integrity rate of at least 99.9%.
- **Security**
  - Data Encryption: All user data, including personal information, preferences, and transaction details, must be encrypted during transmission and storage.
  - User Authentication: Implement secure user authentication and authorization mechanisms to ensure user data privacy.
- **Maintainability**
  - System Updates: The system should support seamless updates and patches to ensure long-term maintainability.
  - Code Maintainability: Code should be well-documented and adhere to best practices to facilitate future maintenance.
- **Portability**
  - Cross-Platform Compatibility: The web application should be compatible with major web browsers, including Chrome, Firefox, Safari, and Edge.

5.0 Logical Database Requirements

The use of a database is essential to store and manage various data related to sneakers, retailers, user profiles, and pricing information. The logical database requirements outline the specific aspects of the database that need to be considered for the project.

Data Structure:	The database will support structured data storage, including tables, fields, and relationships.
Data Types:	The database will support various data types, such as text, numbers, dates, and images, to accommodate different data requirements.
Scalability:	The database will be scalable to handle a growing volume of data as the platform expands.
Redundancy:	Implement data redundancy and backup mechanisms to ensure data integrity and availability in case of system failures.
Performance:	The database will be optimised for efficient data retrieval and storage to provide users with a responsive experience.
Data Deletion	Define data retention policies for user accounts and reviews, ensuring that data is retained for an appropriate period and deleted when necessary.
Data Validation:	Implement data validation rules to prevent the storage of invalid or erroneous data, ensuring the reliability of the information presented to users.
Access Control:	Implement role-based access control to restrict database access to authorised personnel only, protecting sensitive user and pricing data.
Encryption:	Use encryption techniques to safeguard sensitive data, such as user passwords and personal information, in transit and at rest.

7.0 Approval

The signatures below indicate their approval of the contents of this document.

Project Role	Name	Signature	Date

TEAM MEMBER	AJ ROSE	A.R	05-11-2023
TEAM MEMBER	MARISA TAFADZWA	T.M	05-11-2023
TEAM MEMBER	MUSTAFA ISMAIL	M.I	05-11-2023
TEAM MEMBER	EVAN JAMES	E.J	05-11-2023

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