ImmersiVR

Software Requirement Specification Document

Team Members

Harshvardhan (2001084)
Uma (2010095)
Harshit (2001083)

Introduction

Purpose of the Document :

The purpose of this SRS document is to provide a detailed description of the functionality and requirements for an e-commerce website that incorporates futuristic features such as face recognition, AR/VR view of items, metaverse mall and virtual try-ons.

Project Scope:

ImmersiVR is a metaverse based web application which enables users to explore the metaverse mall, try our virtual try-outs and shop items through our e-commerce website. It will allow customers to view products in Ar/Vr inside our virtual world. Our software requires active Internet Connection and all the user profile details and activities will be stored on a secured database web server .

Customer :

Our customers are users who plan on shopping through E -commerce website

Approximate Time Requirement:

The approximate time required to develop the project is 4 months.

Approximate Monetary Requirement:

NIL

Environmental Characteristics:

- Node js
- Flask
- React js
- Three js
- Compute vision
- Machine Learning/AI
- Google AR Core

Product perspective:

Our product aims to create a futuristic immersive e-commerce application which combines the usage of VR , metaverse technologies. The e-commerce website will allow customers to view products in Ar/Vr inside our virtual world assisted Ai assistant. The website will have a user-friendly interface and various functionalities such as the ability to search and filter products and complete transactions securely using payment gateway. It will provide users with virtual try out feature wherein they can try out clothes virtually.

Product Features:

The e-commerce website will allow customers to browse and purchase products online using a variety of advanced features. These features will include:

- Face recognition: Customers will be able to log in to their account using facial recognition technology.
- AR/VR view of items: Customers will be able to view products in an augmented or virtual reality environment.
- Metaverse mall: Customers will be able to shop in a virtual mall that allows them to interact with other customers and products in a 3D environment.
- Virtual try-ons: Customers will be able to virtually try on clothing and other items to see how they look before purchasing.

User Class:

Customer :

- Customers will be able to create an account and log in using facial recognition technology.
- Customers will be able to browse products in a variety of categories and view them in an augmented or virtual reality environment.
- Customers will be able to shop in a virtual mall that allows them to interact with other customers and products in a 3D environment.
- Customers will be able to interact with an AI assistant that can help them with product recommendations and other tasks.
- Customers will be able to virtually try on clothing and other items to see how they look before purchasing.

Operating Environment:

OS: Windows,Linux,Mac

Web Browser: It shall operate correctly with the following web browsers:

Firefox versions 55 and above;

Google Chrome (all versions); and Apple Safari versions 12.0 to 14.0

Design AND Implementation Constraints :

Constraint 1	The code shall be programmed in Javascript and Python programming languages, considering the software's flexibility to operating in different platforms.
Constraint 2	The system's design, code, and maintenance documentation shall conforming to the Process
Constraint 3	The system shall use MongoDb database for storing the information

Constraint 4	System Administrator will be responsible for maintaining the delivered software

Functional Requirements

- ☐ The website will have the following functional requirements:
- ☐ Customers will be able to create an account and log in using facial recognition technology.
- ☐ Customers will be able to browse products in a variety of categories and view them in an augmented or virtual reality environment.
- ☐ Customers will be able to shop in a virtual mall that allows them to interact with other customers and products in a 3D environment.
- ☐ Customers will be able to interact with an AI assistant that can help them with product recommendations and other tasks.
- ☐ Customers will be able to navigate the website and interact with products using gestures.
- ☐ Customers will be able to virtually try on clothing and other items to see how they look before purchasing.

Non-Functional Requirements

- ☐ The website will have the following non-functional requirements:
- ☐ The website will be accessible on a variety of devices, including desktop computers, laptops, tablets, and smartphones.
- ☐ The website will have a fast loading time and minimal downtime.
- ☐ The website will be easy to navigate and use.
- ☐ The website will be secure and protect customer information.
- ☐ The website will provide a positive customer experience.

Interfaces

- [ ] The website will have the following interfaces:
- [ ] A login/registration interface for customers to create and log in to their account using facial recognition technology.
- [ ] A product browsing and viewing interface that allows customers to view products in an augmented or virtual reality environment.
- [ ] A checkout interface that allows customers to complete transactions securely using a variety of payment methods.
- [ ] A virtual mall interface that allows customers to shop in a 3D environment and interact with other customers and products.
- [ ] An AI assistant interface that allows customers to interact with an AI assistant and receive product recommendations.
- [ ] A virtual try-on interface that allows customers to virtually try on clothing and other items before purchasing.

Other Requirements

- [ ] The website will be designed to be accessible to people with disabilities and will comply with relevant accessibility standards.
- [ ] The website will be developed using responsive design principles to ensure that it looks and functions well on a variety of devices.
- [ ] The website will be optimized for search engines to improve its visibility in search results.
- [ ] The website will be regularly maintained and updated to fix bugs and add new features.
- [ ] The website will comply with all applicable laws and regulations regarding e-commerce.

User Documentation:

User Manual :

- Tutorials for the users so that they can refer to them when they don't know how to use a feature properly.

- Properly documenting various feature of the product ,the tech stack's used to implement them and the requirements needed to use them.

- Navigation: Detailed instructions on how to navigate the website, including information on the layout and structure of the website, and how to access different pages and sections.

- Searching and browsing: Information on how to search for products and how to browse through different categories and product listings.

- Accounts and registration: Information on how to create an account, log in, and manage account settings, such as updating personal information and viewing order history.

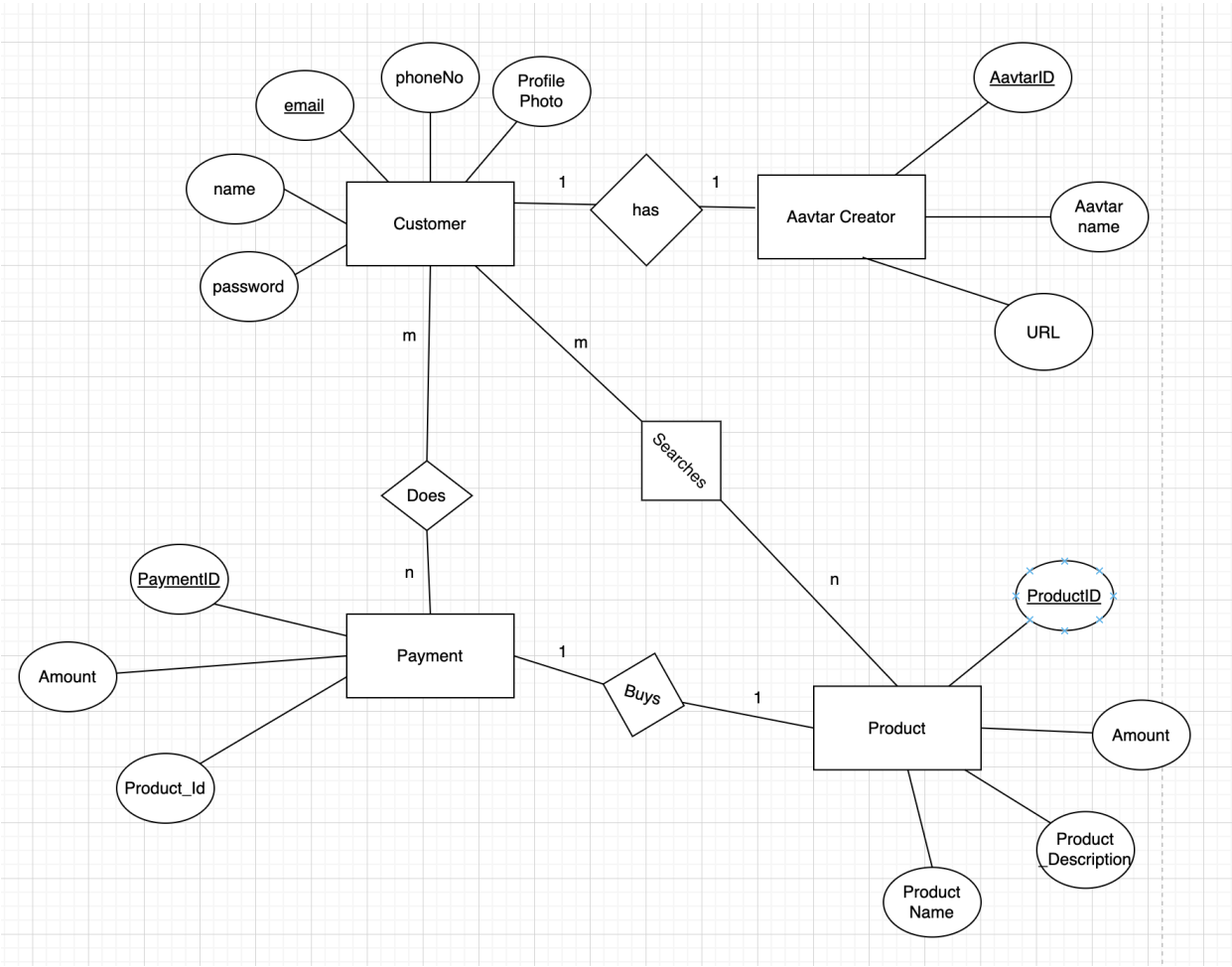
- Product information and reviews: Information on how to view product details, images, and reviews, as well as how to leave a review.

- Payment and shipping: Information on the various payment options available, such as credit card and PayPal, as well as information on shipping options and costs.

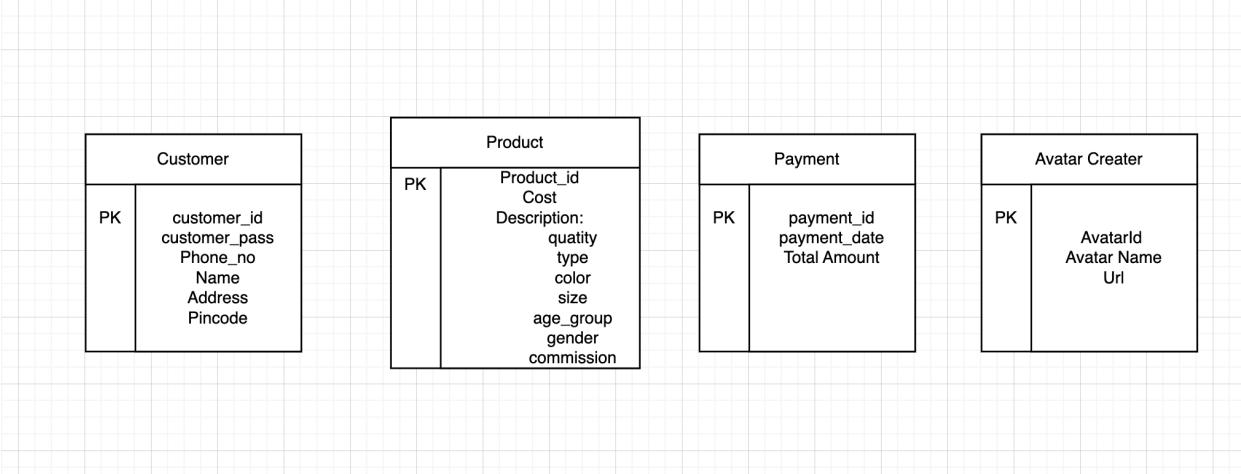
- Customer service: Information on how to contact customer service, including phone numbers and email addresses, as well as information on the website's return and refund policies.

- Other specific features (if any) of the website: instructions on how to use any unique features of the website such as a virtual try-on, AI assistant, etc.

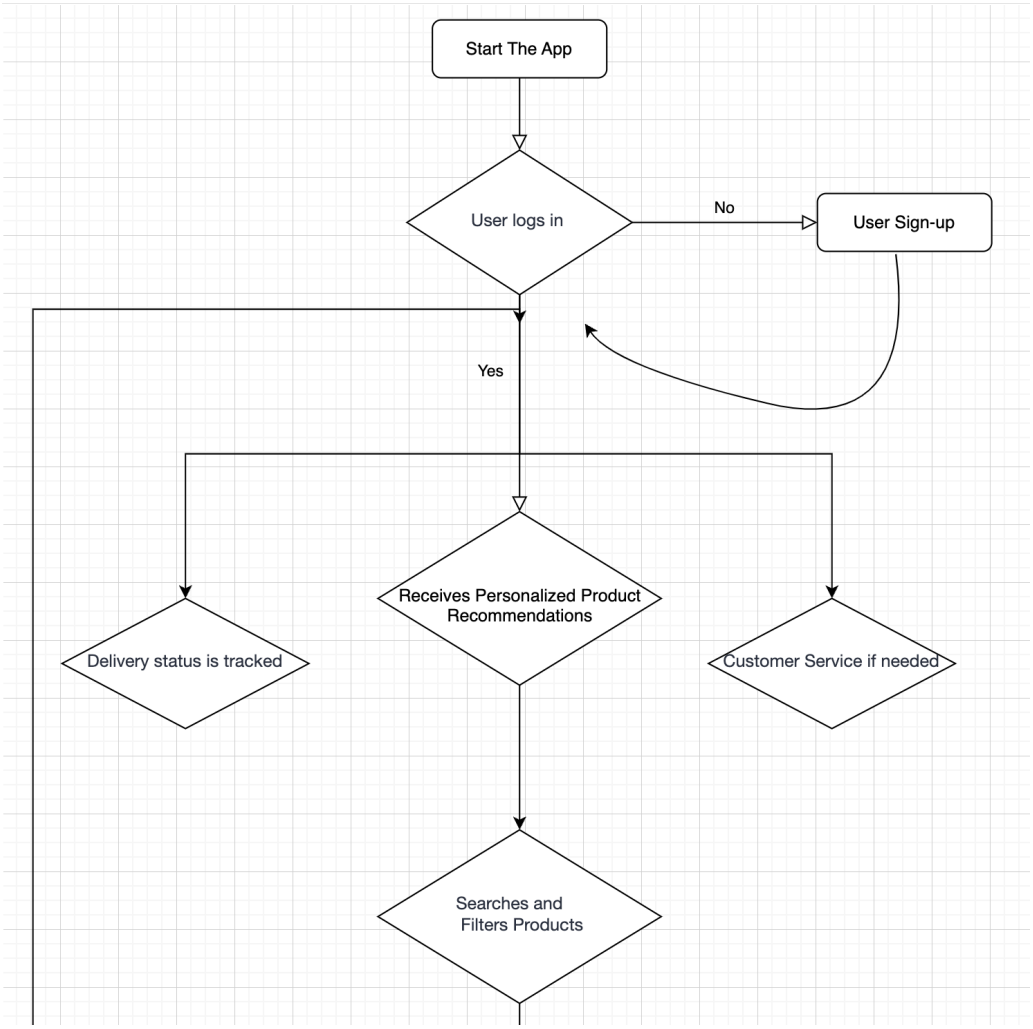
ER Diagram

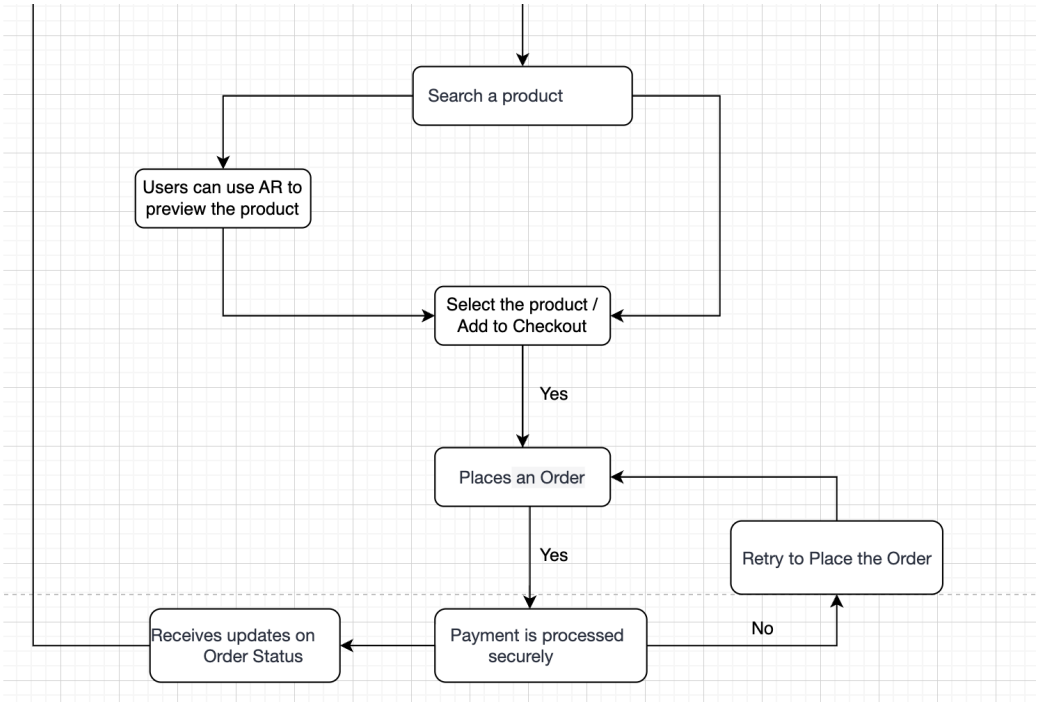


HLD (High Level Daiagram)



LLD (Low Level Daiagram)


Start The App
User logs in
No
User Sign-up
Yes
Receives Personalized Product Recommendations
Delivery status is tracked
Customer Service if needed
Searches and Filters Products



FEATURES:

1. Architecture: The app will be developed using a microservices architecture, allowing for flexible and scalable deployment.
2. User Authentication and Authorization: The app will have a secure user authentication and authorization system, using OAuth2 and encrypted storage of user credentials / Face Recognition.
3. Product Catalog: The app will have a centralized product catalog, which will be updated in real-time and accessible to all users.
4. Payment Processing: The app will have a secure payment processing system, which will handle all transactions and provide real-time updates to the customer and the seller using blockchain for more security.
5. Customer Service: The app will have a dedicated customer service team, which will be available 24/7 to answer questions and resolve any issues that users may have.

WORKFLOW:

1. The user opens the app and logs in
2. User browses the product catalog and selects items to add to their cart
3. User reviews their cart and proceeds to checkout
4. The user inputs payment information and confirms the order
5. Order details are sent to the order management system for processing
6. The payment processing system handles the transaction and updates the order management system with the payment status

ADDITIONAL FEATURES:

1. Augmented Reality (A R) Integration: The app will use A R technology to provide users with an interactive shopping experience. Customers will be able to see how products look in their environment before making a purchase.
2. Personalized Recommendations: The app will use machine learning algorithms to analyze users' shopping habits and provide them with personalized product recommendations.
3. Virtual TryOns