A group of logos

Description automatically generated

**Project Name : SaleGas Website**

Software Requirements Specification

Version 1.0

Pham Duy Khanh

Lead Software Engineer

                     – Hanoi, Summer 2023 –

**Revision History**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Description** | **Author** | **Comments** |  |
| 23/5/2023 | Version 1 | KhanhPD,  DuongTV | <First Revision> | |

**Document Approval**

SaleGas Website

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Signature** | **Printed Name** | **Title** | **Date** |  |
|  | Pham Duy Khanh | Leader |  | |
|  | Nguyen Thanh Y | Instructor, SWP 391 |  | |
|  | Tran Van Duong | Team member |  | |

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**1. Introduction**

**1.1 Purpose :**

         The SRS defines and documents the functional and non-functional requirements of the SGW. It serves as a guide for the development team, stakeholders, and users, ensuring a common understanding of the system's objectives.

**1.2** **Scope :**

 - The scope of the SaleGas website encompasses the following software products:

1. SaleGas Marketplace: This software product serves as the core platform for facilitating the buying and selling of gas products. It provides features for gas suppliers to list their products, manage inventory, and communicate with customers. Customers can browse available gas products, place orders, and securely complete transactions.

2.SaleGas Payment Processing: This software product handles secure payment processing for transactions made on the SaleGas website. It ensures the encryption of sensitive financial information and facilitates seamless and reliable payment transfers between buyers and sellers.

- The SGW will:

● Provide a user-friendly interface for gas suppliers to list their products, manage inventory, and communicate with customers.

● Allow customers to browse and search for gas products, place orders, and securely complete transactions.

● Support secure payment processing, ensuring the confidentiality and integrity of financial information.

● Enable direct communication between gas suppliers and customers for inquiries, negotiations, and addressing concerns.

● Maintain transaction history and order management capabilities for both suppliers and customers.

● Ensure the scalability and performance of the website to handle increasing user demands.

- The SGW will not:

● Handle physical delivery or logistics of gas products. It focuses on the online marketplace aspect of gas trading.

● Provide services unrelated to gas products, such as the sale of other commodities or unrelated industries.

- The application of the SGW is to provide a centralized and efficient platform for the buying and selling of gas products. Its main objectives and goals include:

● Streamlining the gas trading process by replacing traditional methods with a digital marketplace.

● Enhancing efficiency for gas suppliers by providing tools for product listing, inventory management, and direct communication with customers.

● Offering convenience for customers through a user-friendly interface for browsing, ordering, and securely completing gas transactions.

● Facilitating secure payment processing to ensure financial transactions are carried outsmoothly  and reliably.

**1.3 Definitions, Acronyms, and Abbreviations :**

|  |  |
| --- | --- |
| SRS | Software Requirements Specifications |
| BR | Business Rule |
| UI | User Interface |
| N/A | Not applicable, not available |
| Use Case(s) | Diagram describe system requirements |
| SGW | SaleGas Website |

**1.4 Environment :**

|  |  |
| --- | --- |
| **Software** | **Version** |
| Microsoft SQL Server Management | 2019 |
| NetBeans | 13 |
| JDK | 8 |
| TOMCAT | 10 |

**1.5 Overview :**

The SaleGas website is an innovative online platform that revolutionizes the buying and selling of gas products. It replaces traditional methods with a streamlined digital marketplace. SaleGas connects gas suppliers and customers, providing a centralized hub for seamless transactions.The initial release focuses on creating a user-friendly platform for suppliers to list products and manage inventory, while customers can browse and order gas products conveniently. The website ensures secure payment processing and enables direct communication between users.

Future plans include integration with external systems such as gas delivery services and other online marketplaces, expanding the platform's reach and functionality.In summary, SaleGas simplifies the gas trading process, enhances efficiency, and provides a seamless experience for all users involved.

**2. General Description**

This section of the SRS should describe the general factors that affect 'the product and its requirements.  It should be made clear that this section does not state specific requirements; it only makes those requirements easier to understand.

**2.1 Product Perspective**

WebSaleGas is developed for all those who are interested in products about gas stoves, gas cylinders and related accessories and want to buy these types of products to use. This website sells a lot of products from different distributors (Sunhouse, Bosch, Beko,...) and has customer support in terms of consulting for customers to make the right choice.

This is an open source project and it has a very active developer team to support and provide feedback to the users. It was developed to run on search browsers.

**2.2 Product Functions**

*1. Login and register:*

- Users can log in to their account or register for a new account.

- The system will authenticate the login information and ensure the security of the user.

*2. Product search:*

- Users can search for gas products based on criteria like gas type, size, brand, price, etc.

- The system will display a list of products that match the search criteria.

*3. View product details:*

- Users can view detailed information about each gas product, including images, descriptions, prices, specifications, and more.

*4. Add to cart:*

- User can add products to cart for later purchase.

- The system will update the user's cart and display the total quantity and total value of the products in the cart.

*5. Cart management:*

- User can view, edit and delete the products in the cart.

- The system will update the total quantity and total value of products in the cart when there is a change.

*6. Payment:*

- Users can choose a payment method and provide relevant information to complete the purchase process.

- The system will process the payment and provide order confirmation to the user.

*7. Order management:*

- User can view order history and current order status.

- The system will provide detailed information about the orders placed and their status.

*8. Rate and comment:*

- Users can rate and write reviews on purchased products.

- The system will display user ratings and comments for the products.

*9. Social interaction:*

- Users can share products or information about the website with other social networks.

*10. Customer Support:*

- Users can contact customer support to request help or ask questions related to products and services.

- The system will provide communication facilities so that users can connect with the customer support team.

**2.3 User Characteristics**

Typical Users, such as housewives. They want to use the website to search for gas products (gas stoves, gas cylinders, accessories).

**2.4 General Constraints**

*1. Security:*

- The system should have security measures to ensure the safety of user information and transaction data.

- Requires the use of encryption methods to protect sensitive information such as account information, payment information, etc.

- Requires user authentication to ensure that only valid users can access the system.

*2. Performance:*

- The system needs to be able to process data and perform functions quickly and efficiently.

- Requires fast page load times, minimizing user wait time.

*3. Error management and maintenance:*

- The system needs to be able to detect and handle errors automatically, report errors and log them to support later remediation.

- Requires integration of maintenance and fault management tools to maintain and improve system performance.

*4. Cross-platform and device:*

- The system needs to be compatible with various platforms and devices, including desktop computers, mobile phones, tablets, etc.

- Requires flexible user interface design to properly display and be compatible across different devices.

*5. Product management:*

- The system needs to provide a product management interface to manage product listings, information, prices, inventory quantities, etc.

*6. Third-party payments and integrations:*

- The system needs to support secure online payment methods and integrate with popular payment gateways.

- Requires integration with third-party services such as shipping address systems, payment security systems, etc.

*7. Legal provisions:*

- The system needs to comply with the legal regulations related to gas sales and online transactions.

- Request information regarding privacy policy, terms and conditions of use, etc.

**2.5 Assumptions and Dependencies**

*1. Assumptions:*

- Assume that the user already has an internet connection and visits a website that sells gas.

- It is assumed that the user has already registered an account or has personal information to register a new account.

- Assume that product information, price, description, etc. have been provided and updated correctly.

*2. Dependencies:*

- Reliance on third party services like online payment gateway, shipping address system, payment security system, etc. to perform payment and delivery functions.

- Rely on legal and regulatory requirements for gas sales to ensure regulatory compliance and secure transactions.

*3. Operating system and environment:*

- Depends on the operating system and environment the website will be deployed and operated on, including hardware and software requirements.

- It is required to ensure that the system works well on popular browsers such as Google Chrome, Mozilla Firefox, etc.

*4. Security:*

- Depends on the security measures that have been implemented to ensure the safety of users' personal information and transactions.

- Requires the use of encryption methods, security protocols, SSL certificates, etc.

*5. Product management:*

- Depends on providing information and managing gas products from suppliers or warehouse management systems.

**3. Specific Requirements**

***3.1 External Interface Requirements :***

**3.1.1 User Interfaces**

* *UI-1: The website header will include the website's logo, address, phone number, title news , and main categories; The middle of the page displays banner, categories products, the products, the bottom of the page is divided into newsgroups (warranty policy, promotions...); footer view information shop, contact*
* *UI-2: The interface is suitable for display on computers and phones.*
* *UI-3:  The main colour of the website is #00483d combine white, #FF8C00*
* *UI-4: Use icons to provide more detail to users.*

**3.1.2 Hardware Interfaces**

* No hardware interfaces have been identified.

**3.1.3 Software Interfaces**

* The website does not integrate other commercial software

**3.1.4 Communications Interfaces**

***3.2 Use Case :***

**3.2.1 Use Case Overview**

A diagram of a company

Description automatically generated

**3.2.2 Use Case Admin 1**

A diagram of a diagram

Description automatically generated

**3.2.3 Use Case Admin 2**

A diagram of a diagram

Description automatically generated

**3.2.4 Use Case Admin 3.1 ( Manager User )**

A diagram of a diagram

Description automatically generated

**3.2.5 Use Case Admin 3.2 ( Manager Order and Products )**

A diagram of a person's diagram

Description automatically generated

**3.2.6 Use Case Users**

A diagram of a product

Description automatically generated

**3.3 Functional Requirements**

***3.3.1. Authentication***

***3.3.1.1. User Login***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Login | | |
| Created By: | Khanhpd | Date Created: | 15/5/2023 |
| Primary Actor: | Guest | Secondary Actors: | Admin, customer |
| Trigger: | Click on the login button in the head of the website interface | | |
| Description: | The actor logs into the system to use system functions | | |
| Preconditions: |  | | |
| Postconditions: | The actor can log in to system | | |
| Normal Flow: | ·        Staff, customer click “Đăng nhập” Button  ·         Staff, customer type account, password and select role to access to system | | |
| Alternative Flows: | ·         If staff, customer do not have account, they cannot access to the system | | |
| Exceptions: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.1.2. Logout***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Logout | | |
| Created By: | Khanhpd | Date Created: | 15/5/2023 |
| Primary Actor: | User | Secondary Actors: | admin, customer |
| Trigger: | Click on the “đăng xuất”button in the dropdown “tài khoản” of the website interface | | |
| Description: | Click on the “đăng xuất” button. Admin, User, Customer will be signed out the page. | | |
| Preconditions: | After customer, admin have account and login successfully | | |
| Postconditions: | The actor can log out of system | | |
| Normal Flow: | 1. Admin, User, CustomerClicks the the “đăng xuất” button.  2. Admin, User, Customer will be signed out the page. | | |
| Alternative Flows: |  | | |
| Exception Flow: | N/A | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.1.3. User Registration***

| UC ID and Name: | Register | | |
| --- | --- | --- | --- |
| Created By: | Khanhpd | Date Created: | 15/5/2023 |
| Primary Actor: | Guest | Other  Actors: |  |
| Trigger: | Guest click “đăng ký” button | | |
| Description: | Guest can create account for customer about building materials. | | |
| Preconditions: |  | | |
| Postconditions: | Create a new customer account can be active | | |
| Normal Flow: | 1. Guest Select Register function  2. The system displays the registration interface  3. Guest Enter account information  4. Guest Requires registration  5. System Check if guest entered required fields  6. enter or not  7. System Check if guest email address is valid  8. System Check the re-entered password and the password is the same each other or not?  9. System Check password is enough level of security  10.   System check email that has existed in database or not  11.  System check username that has existed in database or no t  12.  System Saves account information and registration notice as success | | |
| Alternative Flows: | N/A | | |

***3.3.1.4. Password Recovery for Admin and User***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Forget password | | |
| Created By: | khanhpd | Date Created: | 20/5/2023 |
| Primary Actor: | Customer | Secondary Actors: | N/A |
| Trigger: | Click on “Quên mật khẩu” | | |
| Description: | Actor can change password if they forgot | | |
| Preconditions: | If forget password | | |
| Postconditions: | Password will be updated and saved in system | | |
| Normal Flow: | ·        Actor click the forget password button  ·        Allow actor input their email in the form  ·        Actor receive mail with reset code  ·        If actor input the right code, allow him to reset his password | | |
| Alternative Flows: | 3a. When the actor types a wrong code, force him to re-enter.  If the actor type wrong more than 5 times,redirect to login page | | |
| Exception Flow: | N/A | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.1.5. Password Change for Admin and User***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Reset password | | |
| Created By: | khanhpd | Date Created: | |
| Primary Actor: | Customer, Staff | Other  Actors: | N/A |
| Trigger: | customer click on change password in the “thông tin tài khoản ” page | | |
| Description: | The actor click on “đổi mật khẩu” password in the Profile part, then can change their password | | |
| Preconditions: | customer email, old password | | |
| Postconditions: | Actor can access with new password | | |
| Normal Flow: | 1. customer click on “đổi mật khẩu”button Software: Display screen with 3 box: old password, new password and re-enter new password  2. customer enter old password and software will check if the old password is correct  3. if old password is correct, allow actor to change their password | | |
| Alternative Flows: | N/A | | |
| Exceptions: | 2a. If old password is not correct, force user to re-enter  3a. when customer enter wrong re-password or password, force them to re-enter  3b.  Required fields need to be entered if the customer is missing | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.1.6. Account Information Update for Admin and User***

**3.3.2 Admin Functions**

**3.3.2.1 Add Admin**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Add Admin | | |
|  |  | | |
| Created By: | SonTN | Date Created: | 29/5/2023 |
| Primary Actor: | Admin | Others Actors: | Mentor |
| Trigger: | Actor clicks on Add Admin | | |
| Description: | Actor add new Admin into system | | |
| Preconditions: | After login successfully | | |
| Postconditions: |  | | |
| Normal Flow: | 1. Actor click on Add Admin 2. The system displays all type and form add admin 3. Actor enter information of admin 4. Actor clicks on “Add Admin button” 5. System validation all information that are entered 6. Display a pop-up message: "Add an admin successfully" | | |
| Alternative Flows: |  | | |
| Exception Flow: | 5a. System Error Message: “Tên đăng nhập đã tồn tại!”  "Email đã được sử dụng!"  " Số điện thoại đã được sử dụng!"  "Passwords Don't Match"  5b. System condition message:  'Mật khẩu trên 8 kí tự và bao gồm chữ cái hoa, thường, chữ số, kí tự đặc biệt'  "Các ký tự được chấp nhận bao gồm chữ cái viết hoa, chữ cái viết thường, chữ số, dấu gạch dưới (\_), dấu chấm (.) và dấu gạch ngang (-) và tên đăng nhập phải nhiều hơn 4 kí tự." | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: |  | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

**3.3.2.2 Add Product**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Add Product | | |
|  |  | | |
| Created By: | DuongTV | Date Created: | 29/5/2023 |
| Primary Actor: | Admin | Others Actors: | Staff |
| Trigger: | Actor clicks on Add Product | | |
| Description: | Actor add new product into system | | |
| Preconditions: | After login successfully | | |
| Postconditions: |  | | |
| Normal Flow: | 1. Actor click on Add Product 2. The system displays all type and form add product 3. Actor enter information of product 4. Actor clicks on “Add Product Now” button 5. System validation all information that are entered 6. Display a pop-up message: “Add product successful .” | | |
| Alternative Flows: |  | | |
| Exception Flow: | 6a. If you do not enter enough information of the product, it will not be added to the database and error message | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

**3.3.2.3 Update Product**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Update Product | | |
| Created By: | DuongTV | Date create: | 29/5/2023 |
| Primary Actor: | Admin | Others Actors: | Staff |
| Trigger: | Actor clicks on Update | | |
| Description: | Actor update product into system | | |
| Preconditions: | After login successfully | | |
| Postconditions: |  | | |
| Normal Flow: | 1.Actor click on Update    2.The system displays all type and form update product    3.Actor enter information of product    4.Actor clicks on “Update Product Now” button    5.System validation all information that are entered | | |
| Alternative Flows: |  | | |
| Exception Flow: | 5a. Update product changes in the database, it will not be updated to the database and error message | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.2.3. Sales Performance Tracking***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | *Sales Performance Tracking* | | |
| Created By: | khanhpd | Date Created: | 23/6/2023 |
| Primary Actor: | Admin | Others Actors: | Mentor |
| Trigger: | N/A | | |
| Description: | Actor can view the Sales Performance Tracking in dashboard or view in statistic product after click ‘’thống kê doanh số’’ | | |
| Preconditions: | N/A | | |
| Postconditions: |  | | |
| Normal Flow: | N/A | | |
| Alternative Flows: |  | | |
| Exception Flow: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.2.4. User Management (New, Active, and Used Users)***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | *User Management* | | |
| Created By: | khanhpd |  |  |
| Primary Actor: | Admin |  |  |
| Trigger: | N/A | | |
| Description: | Actor can view the *User Management in dashboard or view in statistic user after click ‘’thống ke người dùng’’* | | |
| Preconditions: | N/A | | |
| Postconditions: |  | | |
| Normal Flow: | N/A | | |
| Alternative Flows: |  | | |
| Exception Flow: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.2.5. Product Warranty Management***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View, Add, Edit Warranty | | |
| Created By: | khanhpd | Date Created: | 20/6/2023 |
| Primary Actor: | Admin | Secondary Actors: | N/A |
| Trigger: | Click on “quản lý bảo hành” in home page to view all warranty list | | |
| Description: | Admin can view all warranty list | | |
| Preconditions: | After admin login successfully and click “quản lý bảo hành”  button | | |
| Postconditions: | Warranty list will be updated to system | | |
| Normal Flow: | ·        Admin login successfully and click “quản lý bảo hành” button  ·        System shows all warranty list with three tab(request list, processing list and completed list) | | |
| Alternative Flows: | N/A | | |
| Exception Flow: | N/A | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.2.6. Manager Order***

|  |  |  |  |
| --- | --- | --- | --- |
| *UC ID and Name:* | *View, Add, Edit Warranty* | | |
| Created By: | khanhpd | Date Created: | 20/6/2023 |
| Primary Actor: | Admin | Secondary Actors: | N/A |
| Trigger: | Click on “quản lý đơn hàng” in home page to view all warranty list | | |
| Description: | Admin can view Order list | | |
| Preconditions: | After admin login successfully and click “quản lý đơn hàng”  button | | |
| Postconditions: |  | | |
| Normal Flow: | ·        admin login successfully and click quản lý đơn hàng” button  ·        System shows all Order list and user can filter | | |
| Alternative Flows: | N/A | | |
| Exception Flow: | N/A | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

**3.3.5. News and Announcements**

**3.5.3.1 Add, Update and Delete News**

1. **Add News**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Add News | | |
| Created By: | DuongTV | Date Created: | 23/6/2023 |
| Primary Actor: | Admin | Others Actors: | Mentor |
| Trigger: | Actor clicks on Add News | | |
| Description: | Actor add news new into system | | |
| Preconditions: | After login successfully | | |
| Postconditions: |  | | |
| Normal Flow: | 1. Actor click on Add News 2. The system displays all type and form add news 3. Actor enter information of news 4. Actor clicks on “Submit” button 5. System validation all information that are entered 6. Display a pop-up message: “Add news successful ”. | | |
| Alternative Flows: |  | | |
| Exception Flow: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

**B. Update News**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Update News | | |
| Created By: | DuongTV | Date Created: | 23/6/2023 |
| Primary Actor: | Admin | Others Actors: | Mentor |
| Trigger: | Actor clicks on Edit News | | |
| Description: | Actor edit news new into system | | |
| Preconditions: | After login successfully | | |
| Postconditions: |  | | |
| Normal Flow: | 1. Actor click on Edit News 2. The system displays all type and form edit news 3. Actor enter information of news need edit 4. Actor clicks on “Submit” button 5. System validation all information that are entered | | |
| Alternative Flows: |  | | |
| Exception Flow: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

**C. Delete News**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Delete News | | |
| Created By: | DuongTV | Date Created: | 23/6/2023 |
| Primary Actor: | Admin | Others Actors: | Mentor |
| Trigger: | Actor clicks on Delete News | | |
| Description: | Actor delete news on the system | | |
| Preconditions: | After login successfully | | |
| Postconditions: |  | | |
| Normal Flow: | 1. Actor click on Delete News 2. Verify system all information has been deleted. | | |
| Alternative Flows: |  | | |
| Exception Flow: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.3.6. Online and Offline Payment Options***

1. ***Online Payment Options***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Online Payment Options | | |
|  |  | | |
| Created By: | KhanhPD | Date Created: | 26/6/2023 |
| Primary Actor: | user | Others Actors: | n/a |
| Trigger: | Actor clicks on “phương thức thanh toán trực tuyến” and after that click button “thanh toán” | | |
| Description: | Actor can pay for selected products by payment method Vnpay | | |
| Preconditions: | Successfully login user account and select the product you want to buy, click the “thanh toán”button | | |
| Postconditions: | After successful payment, the order information will be displayed and the order will be added to the database | | |
| Normal Flow: | 1. Select the product and click the “Thêm vào giỏ hàng” button 2. Software: Display of orders for payment   ·         Basic information of the product includes: price,  product name, image, quantity.  ·        Consignee information address, recipient's name, phone number, payment method and button "Thanh toán"   1. Actor can change the delivery address and choose the appropriate payment method then click the button "Thanh toán" 2. .     Software: Display payment information according to the payment method selected by the user. 3. . Display successful payment and order information, add orders to the database. | | |
| Alternative Flows: | N/A | | |
| Exception Flow: | . If there is an error in the payment process the payment failed message and shows an error. | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

**B. *Offline Payment Options***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | *Offline* Payment Options | | |
|  |  | | |
| Created By: | KhanhPD | Date Created: | 26/6/2023 |
| Primary Actor: | user | Others Actors: | n/a |
| Trigger: | Actor clicks on “phương thức thanh toán khi nhận hàng” and after that click button “thanh toán” | | |
| Description: |  | | |
| Preconditions: | Successfully login user account and select the product you want to buy, click the “thanh toán”button | | |
| Postconditions: | the order information will be displayed and the order will be added to the database | | |
| Normal Flow: | 1. Select the product and click the “Thêm vào giỏ hàng” button 2. Software: Display of orders for payment   ·         Basic information of the product includes: price,  product name, image, quantity.  ·        Consignee information address, recipient's name, phone number, payment method and button "Thanh toán"   1. Actor can change the delivery address and choose the appropriate payment method then click the button "Thanh toán". | | |
| Alternative Flows: | N/A | | |
| Exception Flow: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.3.1. View Products***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | *View Products* | | |
| Created By: | khanhpd | Date Created: | 23/6/2023 |
| Primary Actor: | user | Others Actors: | Mentor |
| Trigger: | Show product on “trang chủ”, “sản phẩm” | | |
| Description: | Actor an view product on “trang chủ”, “sản phẩm” and can add product to cart, view detail | | |
| Preconditions: |  | | |
| Postconditions: |  | | |
| Normal Flow: |  | | |
| Alternative Flows: |  | | |
| Exception Flow: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.3.2. Product Details View***

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | *View Products Details* | | |
| Created By: | khanhpd | Date Created: | 23/6/2023 |
| Primary Actor: | user | Others Actors: | Mentor |
| Trigger: | Show a product on productdetail | | |
| Description: | Actor can view product on “trang chủ”, “sản phẩm” and can add product to cart, view detail | | |
| Preconditions: |  | | |
| Postconditions: |  | | |
| Normal Flow: |  | | |
| Alternative Flows: |  | | |
| Exception Flow: |  | | |
| Priority: | Normal | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | N/A | | |

***3.3.3.3. Add, Update, and Delete Items in Cart***

### A. ***Add*** products to cart

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Add to cart | | |
| Created By: | Khanhpd | Date Created: |  |
| Primary Actor: | Customer | Others Actors: | Customer |
| Trigger: | The customer clicks the "Add to Cart" button for a product. | | |
| Description: | This use case allows the customer to add a product to their shopping cart | | |
| Preconditions: | * The customer is logged in to the e-commerce platform. * The product is available and visible to the customer. * The customer has navigated to the product shop page. | | |
| Postconditions: | * The selected product is added to the customer's shopping cart. * The quantity and total price in the cart are updated accordingly. | | |
| Normal Flow: | The customer views the product details page.  The customer specifies the desired quantity of the product.  The customer clicks the "Add to Cart" button.  The system adds the product to the customer's shopping cart.  The system updates the quantity and total price in the cart. | | |
| Alternative Flows: | If the customer is not logged in, they are redirected to the login page before adding the product to the cart. | | |
| Exception Flow: | If there is a technical error during the process of adding the product to the cart, an error message is displayed, and the customer is prompted to try again. | | |
| Priority: | High | | |
| Frequency of Use: | Usually | | |
| Business Rules: | * The product must be in stock for it to be added to the cart. * The customer's cart should be persistent across sessions and accessible from any device | | |
| Other Information: | N/A | | |
| Assumptions: | The necessary infrastructure for managing the shopping cart, including database and session management, is in place. | | |

### **Update quantity of product**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Update Quantity in Cart | | |
| Created By: | kHANHPD | Date Created: |  |
| Primary Actor: | CustomerCustomer | Others Actors: |  |
| Trigger: | The customer modifies the quantity of a product in their shopping cart after adding products to the cart. | | |
| Description: | This use case allows the customer to update the quantity of a product in their shopping cart. | | |
| Preconditions: | * The customer is logged in to the e-commerce platform. * The customer has added products to their shopping cart | | |
| Postconditions: | * The quantity of the product in the customer's shopping cart is updated. * The total price in the cart is recalculated based on the updated quantity. | | |
| Normal Flow: | 1. The customer navigates to their shopping cart page. 2. The customer locates the product for which they want to update the quantity. 3. The customer modifies the quantity field associated with the product. 4. The system updates the quantity of the product in the cart. 5. The system recalculates the total price in the cart based on the updated quantity. | | |
| Alternative Flows: | * If the customer enters an invalid or non-numeric quantity, an error message is displayed, and the customer is prompted to enter a valid quantity. * If the updated quantity exceeds the available stock, an error message is displayed, and the customer is prompted to update the quantity within the available limit. | | |
| Exception Flow: | N/A | | |
| Priority: | High | | |
| Frequency of Use: | Frequent | | |
| Business Rules: | * The updated quantity should not exceed the available stock for the product. * The customer can update the quantity of multiple products in the cart. | | |
| Other Information: | N/A | | |
| Assumptions: | The necessary infrastructure for managing the shopping cart, including database and session management, is in place. | | |

1. **Delete products from cart**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Delete Product from Cart | | |
| Created By: | kHANHPD | Date Created: |  |
| Primary Actor: | Customer | Others Actors: |  |
| Trigger: | The customer selects the option to delete a product from their shopping cart. | | |
| Description: | This use case allows the customer to remove a product from their shopping cart. | | |
| Preconditions: | * The customer is logged in to the e-commerce platform. * The customer has added products to their shopping cart. | | |
| Postconditions: | * The selected product is removed from the customer's shopping cart. * The total price in the cart is recalculated based on the remaining products. | | |
| Normal Flow: | 1. The customer navigates to their shopping cart page. 2. The customer identifies the product they wish to delete from the cart. 3. The customer selects the button remove to delete the product. 4. The system removes the selected product from the cart.      1. The system recalculates the total price in the cart based on the remaining products. | | |
| Alternative Flows: | If the customer cancels or declines the deletion action, the product remains in the cart without any changes. | | |
| Exception Flow: | N/A | | |
| Priority: | High | | |
| Frequency of Use: | Frequent | | |
| Business Rules: | * The customer can delete multiple products from the cart. * The system should provide a confirmation step to ensure the customer's intention to delete the product. | | |
| Other Information: | N/A | | |
| Assumptions: | The necessary infrastructure for managing the shopping cart, including database and session management, is in place. | | |

**3.4 Non-Functional Requirements**

**3.4.1 Performance**

**1. Page load time** : SaleGas website needs to ensure fast page load time for users to have a good experience. Average page load time should not exceed 2 seconds for main pages and should not exceed 3 seconds for subpages.

**2. Response time** : The system must respond quickly to requests from users. Average response times should not exceed 1 second for basic interaction requests, including login, registration, search, and product information viewing.

**3. Scalability** : The system must be scalable to accommodate large loads and be ready to scale as the number of users increases. The system should define and implement scaling methods, including hardware enhancement, load balancing, and scalability based on automatic tuning.

**4. Database Optimization** : SaleGas Website's database needs to be optimized to ensure fast and efficient querying. Queries should be written optimally, using indexes and caching tables to improve performance.

**5. High load handling** : The system must handle many requests from many users concurrently. High load capacity should be tested by testing the system with the maximum expected number of users and ensuring that performance is not degraded under high load conditions.

**3.4.2 Availability**

**3.4.3 Security**

**1. Authentication and Access Management**: Users need to log in with valid credentials and only have access to the appropriate resources.

**2.Data Security**: Sensitive data needs to be encrypted during transmission and storage.

**3. Security check**: It is necessary to set up a periodic security check process, including checking the source code, decentralization and trying to steal information.

**3.5 Inverse Requirements :**

*State any \*useful\* inverse requirements.*

**3.7 Logical Database Requirements :**

A diagram of a website

Description automatically generated

**A. Appendices**

**A.1 Business Rule**

* BR-01 Password must contain at least 6 characters ( contain letter, number, special)
* BR-02 Users can only access information that belongs to them, except administrators.
* BR-03 Content manager only signs in with the account provided by the administrator.
* BR-04 Each user has exactly one role.
* BR-05 Each email is only registered for an account.
* BR-06 Email must be in the correct format: “abc123@gmail.com”.
* BR-07 Username must be unique.
* BR-08  Username does not contain spaces and special characters.
* BR-09 The length of the username must be between 4-20 characters.
* BR-10 Password must be encrypted.
* BR-11  Password length must be between 4-20 characters and contain no spaces
* BR-12 When changing the password, the user must enter the old password.
* BR-13 Phone can only contain 10 digits and start with 0.
* BR-14 Date of birth must be before current time
* BR-15 All managed lists must be displayed with pagination.
* BR-16  Fields marked with an asterisk (\*) cannot be left blank
* BR-17 When resetting the password, the user must enter the email so that the system can send a verification code.
* BR-18 When registering an account, the user must enter the password twice.

**A.2 References**

· IEEE Recommended Practice for Software Requirements Specifications," in IEEE Std 830-1998, vol., no., pp.1-40, 20 Oct. 1998

· IEEE Guide for Developing System Requirements Specifications," in IEEE Std 1233-1996, vol., no., pp.1-30, 22 Dec. 1996.