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# Software Requirement Specification (SRS) Project –Online Grocery System

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# **Software Requirement Specification (SRS)**

## **Project – Online Grocery System**

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**Description –** This project aims to create an online grocery store system that will allow their customers to buy grocery products online and delivered to their doorstep. This document describes in details about the online grocery store including its purpose, features, constraints etc. This document can be used by either stakeholders or developers

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## Introduction

To scale up the business's online presence and increase sales volume multi-folds. To achieve the target the need for online shopping system emerged. This projects targets active development of online order placement, payment and delivery system.

## Purpose

This document is intended to give an in-depth view of the components, key elements and key functions of the Online grocery shopping system.

Components of the system will include product display, login/registration, cart system, payment gateways, user profile system, purchasing features systems. Key Elements will include the phases involved the execution of the system. Key functions are the tasks to be executed for the elements to communicate with each other.

## Problem statement (Broad scope of the system)

- As soon as the app is installed and opened. The login/register interface will be encountered
  - i. **Login** – For customers who already have an account registered to our app. It includes input of details like mobile number and password.
  - ii. **Register** – If a customer is a first time user he needs to open his account on our app which includes input of details like first name, last name, password and mobile number where his mobile number will be verified by the OTP (One Time Password)

- **Home page** – Showcases all the products based on the search request placed by search bar or the category of product selected. It also provides features to see Past orders, cart, profile, help section. By clicking to any of the product listed customer will be redirected to the product page.
- **Product page** – Product pages holds certain features like displaying product image, product name and product description along with product price and tags.
  - It displays the availability of product. If a product is available customer can add it to either wish list, cart or can buy now. If a product is not available product can only be added to the wish list and customers will be notified once the product is back in stock.
  - Review sections, where customer can read review related to product posted by other users.
  - Action buttons like, Add to Cart, Buy Now, Wish-list
- **Cart** – Increment/ decrement operation can be performed for each item present in the cart. Also the feature of product removal and add more items to the cart is also been provided. The vouchers and coupons sections has also been provided where customers can avail discounts managed timely by the company. After discounts the subtotal of all the items must be displayed.
- **Billing system** – Acquires the first name, last name, mobile number from the profile. Gathers more data from various input fields like address, email id. Address can be entered manually or can be given a location access or can use any locations stored by the user in the app. Also the option for ordering for

self and ordering for others will be provided. In case for ordering for other his/her details must be provided

- **Profile** – Here customers are given features like to update profile picture, name, mobile number, email, add/delete addresses, see all past orders any many more. Also company's policies are discussed here
- **Payment and order confirmation** – Payment gateway will be provided for user to pay through various payment options available for the product purchased. On successful payment the order must be confirmed and delivered by the delivery agent.

## Requirement Specifications

### Module1 – Login/Sign-Up

- Functional Requirement 1 – Login Detail

**Input** – User prompted to enter Mobile number and password.

Requirement 1.1 – Credentials Validation

**Input** – Password and Mobile number

**Output** – Validation results

- 1) Wrong Mobile Number – Display “Mobile Number not registered”
- 2) Correct Mobile number, wrong password – Display “Incorrect password”

- 3) Wrong mobile number, wrong password – Display “Invalid credentials”
- 4) Correct Mobile number and password – Redirect user to home page.

Requirement 1.2 – New User registration.

Display the text. “Don’t have an account? Register.” On clicking register button user will be redirected to registration page.

## Module 2 – Registration

- Functional Requirement 2.1 – Registration Details

**Input** – First name, Last name, Mobile Number, password, re-enter password.

Requirement 2.1.1 – Password validation

Input – password, re-enter password detail

Output – If details do not match display “Re-enter password must be same as password”

**Output** – Details saved on clicking the next button

- Functional Requirement 2.2 – Mobile Number validation

**Input** – Mobile Number

Requirement 2.2.1 – OTP Generation

Input – Mobile number

Output – OTP via text message on provided mobile number

**Output** – On successful validation redirect user to home page. If not the case redirect user to registration page

## Module 3 – Product page

- Functional Requirement 5.1 – Search bar
  - **Input** – The item you want to search for
  - **Output** – Displaying products which matches the items searched for, from various sellers listed on the platform.
  
- Functional Requirement 5.2 – Shop by Categories
  - **Input** – A click on any categories out of many available
  - **Output** – Product display which matches the category asked for. (Ex. Electronics should display keyboard, mouse, earphones, speakers etc..)
  - **Information** – Should have 12 categories named

Fruits and vegetables	Bakery and dairy	Cooking essentials and ready to cook items	Beverages
Cosmetics and personal hygiene	Pet care	Baby care	Snacks
Dry fruits	Sweets	Cleaning and Household items	Health and Nutrition

- Functional Requirement 5.3 – Displaying items related to categories
  - **Input** – CLICK event on any product
  - **Output** – Redirect to product page
  
- Functional Requirement 5.4 – Profile Section
  - Functional Requirement 5.4.1 – Your orders section
    - Input – Duration(months)
    - Output –Displays all orders delivered within the selected duration.
  
  - Functional Requirements 5.4.2 – Your Account section
    - Displays all information related to account. Discussed in detail later on.
  
  - Functional Requirements 5.4.3 – Help



- Redirects to AI Chatbot and if not satisfied with the result of chatbot assign a customer care assistant.
- Functional Requirement 5.5 – Product view
  - Displays all the information related to the product.

## Module 4 – Product Description

- Non-Functional Requirement 6.1 – Product detail
  - Includes product images, name, product tags and description.
- Non-Functional Requirement 6.2 – Availability
  - If a product is available display a message “In stock” else display “Out of Stock”
  - If a product is out of stock it cannot be added to the cart or bought, but can be added to wish list
  - If a product is available user has three options – Buy Now, add to cart, Add to Wish-list.
- Functional Requirement 6.3 – Product variant
  - Displays all the variant in which a product is available (ex. Pack of 5, pack of 10, or 1kg mix, 5kg mix etc.)
- Functional Requirement 6.4 – Action on options
  - **Input** – CLICK event on add to cart
  - **Output** – Item added to the cart
  - **Input** – CLICK event on buy now
  - **Output** – User redirected to billing module
- Functional Requirement 6.5 – Similar Products display
  - Displays products with same name or tags posted by sellers on the app.
- Non- Functional Requirement 6.6 – Reviews
  - Opens up the review posted by customer who bought the same product you are looking for from the same seller.

## Module 5 – Shopping cart

- Functional Requirement 4.1 – Add/Subtract quantity of product in the cart
- Functional Requirement 4.2 – Remove item from shopping cart
- Non-Functional Requirement 4.3 -Display the subtotal
- Functional Requirement 4.3 – Coupons and Discounts
  - Let user select the timely discounts provided by the site to use by CLICKING on “Apply” button. The new subtotal must be reflected after the discounts are applied
- Non-Functional Requirement 4.5 – Add delivery instructions if any
- Functional Requirement 4.5 – Redirect to billing module

## Module 6 – Billing Modules

- Name, mobile number will be fetched from profile information
- Functional requirement 7.1 – Address is fetched either from saved addresses or address bar in provided to fill the details
- Requirement 7.2 – Details to deliver order
  - E-mail id
  - Alternate mobile number
  - Pin-code – authentication must be done for validity

Redirected to payment gateway

## Module 7 – Payment Option

Option to provided to pay for the subtotal using

- i. Credit Card/ Debit Card
  - ii. Net-banking
  - iii. UPI payment options
- Functional Requirement 3.1 – Credit card/Debit card option
 

**Input** – Credit card number, CVV number, Expiry date

**Output** – If credentials are correct, confirm the order and deduct the amount. If incorrect credentials, Display the message “Invalid card credentials” and redirect to cart.

- Functional Requirement 3.2 – Net banking option

**Input** – Username and password.

**Output** – If credentials are correct, confirm the order and deduct the amount. If incorrect credentials, Display the message “Invalid card credentials” and redirect to cart.

- Functional Requirements 3.3 – UPI payment option

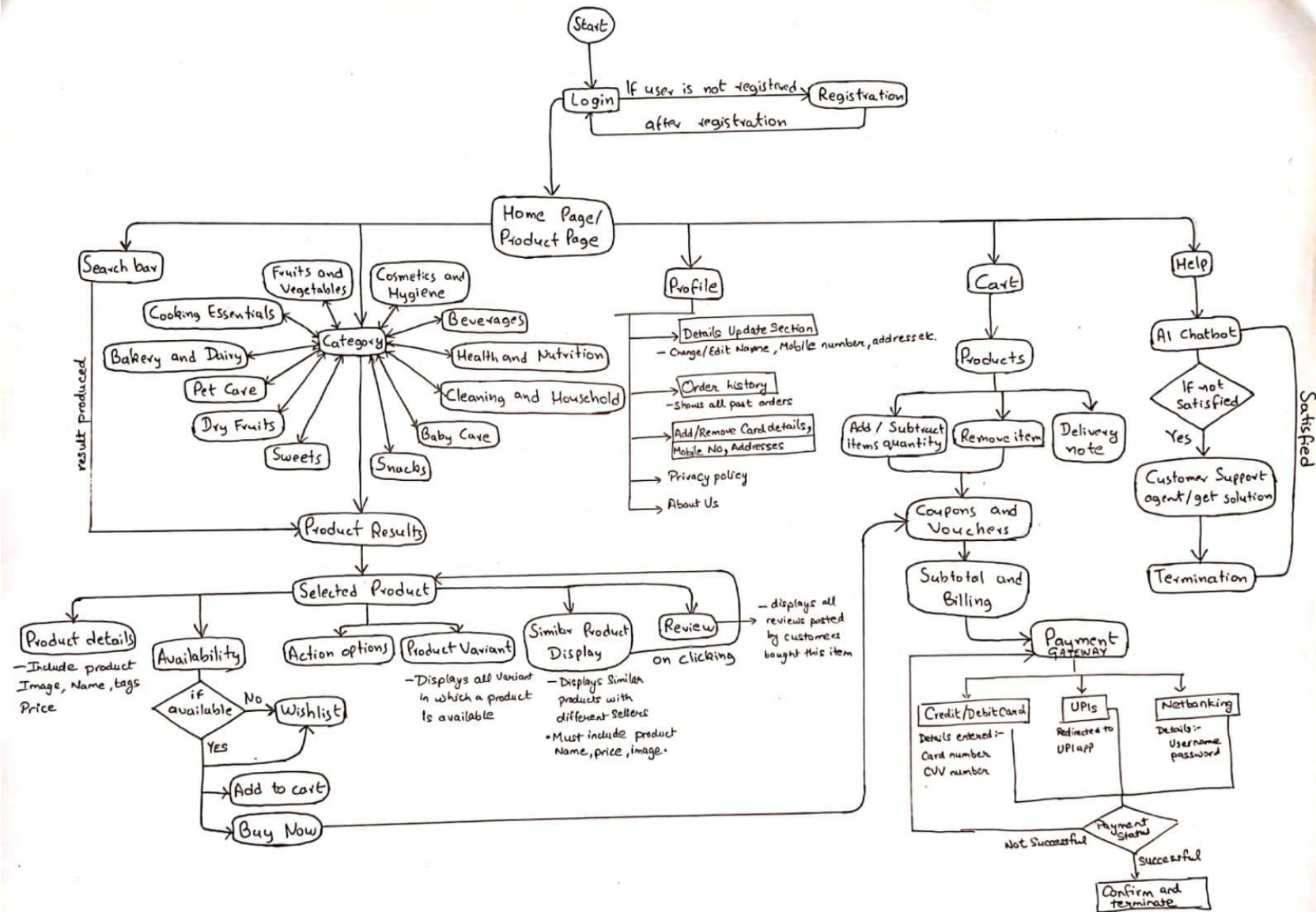
**Input** – UPI id.

**Output** – If credentials are correct, popup is send to selected payment app to pay the required amount and confirm the order.

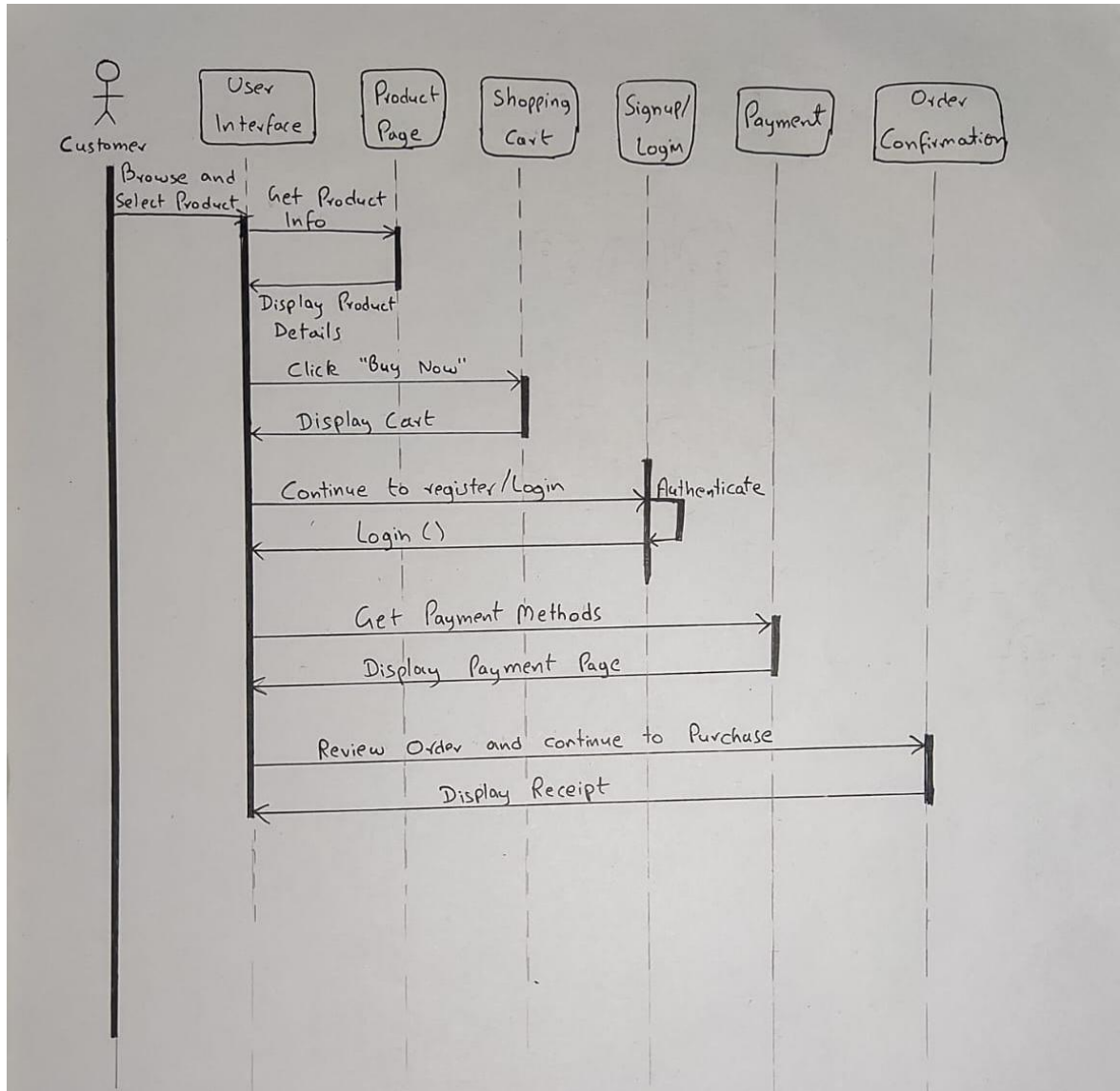
**Session timeout must be implemented and user is asked to pay the amount within that timeframe. If failed to pay redirect user to the shopping cart**

## Design

## Data flow diagram



# Sequential Diagram



# Scalability

Scalability is a critical aspect for the success and longevity of the online grocery shop software. As the user base and transaction volume grow, the system must be capable of handling increased loads efficiently. The following remarks outline the key considerations for scalability:

- **Elasticity and Resource Management:**

The software should be designed to scale both vertically and horizontally to accommodate varying workloads. The system should be capable of dynamically allocating resources based on demand, ensuring optimal performance during peak periods and efficient resource utilization during periods of lower activity.

- **Database Scalability:**

A robust database architecture is crucial for scalability. Consider implementing sharding, replication, or other database scaling techniques to distribute the load and maintain responsiveness as the user base expands. Regular database performance tuning and optimization should be integral to the system's maintenance strategy.

- **Scalable Communication Protocols:**

Ensure that communication between different components of the system is designed to be scalable. Implement lightweight and efficient communication protocols to minimize latency and handle increasing communication demands effectively.

By prioritizing these scalability considerations in the development and maintenance of the online grocery shop software, the system can confidently evolve alongside the business, accommodating the growth and ensuring a reliable and responsive user experience.

# Accessibility

Ensuring accessibility in the online grocery shop software is paramount to providing an inclusive and user-friendly experience for a diverse range of customers. Some remarks highlighting key considerations for accessibility:

- 1) **User Interface (UI) Design:** Design the user interface with accessibility in mind, incorporating clear and consistent navigation, well-organized content, and easy-to-read text. Use sufficient color contrast, and provide alternatives for visual elements, such as descriptive alt text for images, to cater to users with visual impairments.
- 2) **Keyboard Navigation:** Ensure that all functionalities within the software can be easily navigated using a keyboard alone. This is crucial for users who rely on keyboard shortcuts or alternative input devices, enhancing the overall accessibility of the platform.
- 3) **Responsive Design:** Ensure that the software's design is responsive to different devices and screen sizes. This not only caters to users with varying abilities but also enhances the overall user experience for individuals accessing the platform on smartphones, tablets, or desktop computers.
- 4) **Regular Accessibility Audits:** Conduct regular accessibility audits and usability testing with users of diverse abilities to identify areas for improvement. This ongoing commitment to accessibility ensures that the software evolves to meet the changing needs of all users.

By prioritizing accessibility in the development and maintenance of the online grocery shop software, the platform becomes more inclusive, providing a positive and equitable experience for all users, regardless of their abilities or disabilities.

In addition to the accessibility features and standards listed above, the Online Grocery Shop software will also be designed with the following accessibility principles in mind:

- **Simplicity:** The software will be designed to be simple and easy to use for all users, regardless of their abilities.
- **Flexibility:** The software will be designed to be flexible and adaptable to the needs of different users.
- **Consistency:** The software will be designed to be consistent in its design and functionality.
- **Predictability:** The software will be designed to be predictable in its behavior.

By following these accessibility principles, the Online Grocery Shop software will be a more accessible and inclusive shopping experience for all users.

## Testing

### Test Case 1: User Registration

1. Description: Confirm successful registration of a new user on the online grocery store.
2. Steps:
  - Go to the registration page.
  - Input valid information (name, email, password).
  - Select the "Register" option.
3. Expected Result: User registration is successful, and a confirmation email is sent.

### Test Case 2: Invalid Registration

1. Description: Ensure users cannot register with incomplete or invalid information.
2. Steps:
  - Navigate to the registration page.
  - Enter incomplete or invalid details.
  - Click "Register."
3. Expected Result: User receives an error message indicating the issues with the provided information.

### Test Case 3: Product Search

1. Description: Validate the functionality allowing users to search for products on the online grocery store.
2. Steps:
  - Enter a valid product name in the search bar.



- Click the search icon.
- 3. Expected Result: Relevant products matching the search criteria are displayed.

#### **Test Case 4: No Search Results**

1. Description: Verify the system's response when a user searches for a non-existent product.
2. Steps:
  - Enter a non-existent product name in the search bar.
  - Click the search icon.
3. Expected Result: A message is displayed indicating that no results were found.

#### **Test Case 5: Add to Cart**

1. Description: Confirm users can add products to the shopping cart.
2. Steps:
  - Go to a product page.
  - Select "Add to Cart."
3. Expected Result: The chosen product is added to the shopping cart.

#### **Test Case 6: Update Cart**

1. Description: Verify users can modify the quantity of items in the shopping cart.
2. Steps:
  - Navigate to the shopping cart page.
  - Adjust the quantity of a product.
  - Click "Update Cart."
3. Expected Result: The shopping cart reflects the updated quantity.

#### **Test Case 7: Payment Processing**

1. Description: Confirm the smooth and secure processing of payments.
2. Steps:
  - Enter valid payment information.
  - Click "Place Order."
3. Expected Result: Successful payment processing, and the user receives an order confirmation.

#### **Test Case 8: Payment Failure Handling**

1. Description: Verify the system's response when a payment fails.
2. Steps:
  - Enter invalid payment information.
  - Click "Place Order."
3. Expected Result: User receives an error message indicating the payment failure.

#### **Account Management:**

**Test Case 9: Change Password**

1. Description: Confirm users can successfully change their account password.
2. Steps:
  - Go to the account settings page.
  - Input the current password and a new password.
  - Click "Change Password."
3. Expected Result: Password is changed successfully.

**Test Case 10: Logout**

1. Description: Confirm users can successfully log out of their account.
2. Steps:
  - Select the logout option.
3. Expected Result: User is logged out, and the system returns to the login page.

These test cases cover various scenarios to ensure the reliability and usability of the online grocery store.

## Conclusion

In conclusion, the development of this online grocery shop software represents a significant milestone in leveraging technology to enhance the convenience and efficiency of the grocery shopping experience. The comprehensive Software Requirements Specification (SRS) document presented here serves as a blueprint for the successful implementation of the system.

This SRS document not only defines the functional and non-functional requirements but also provides a roadmap for the design, development, testing and phases. Collaboration among the development team, stakeholders, and end-users will be crucial throughout the entire lifecycle of the project to address any emerging challenges and capitalize on new opportunities.

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