Software Requirements Specification

Food Delivery Web Application

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1. Introduction

1.1 Purpose

The purpose of this software requirement specification is to provide a clear, documented model of the requirements for the **food delivery web application**. This document serves to provide top level use cases for a web customer ordering food online. The system includes the **client subsystem.**
The **food delivery web application** provides a platform for providing of a wide variety of food items online. It is implemented as an **internet-based enterprise** and has an inventory of different food items.
The appeal of food delivery web application experienced a large boost in the last decade because the customers can browse easily through various options, restaurants, and price ranges with very little hassle. The ability to reap its benefits from the comfort of one's own home has only bolstered its claim as one of the biggest enterprises that dominates the internet.

1.2 Intended Audience

The document describes the scope, functionality and features of a food delivery web application which has a large audience. This document finds relevance to people from various different technical and non-technical backgrounds. The document outlines various corporate goals, business strategies and design features that are important from a management point of view and can be used by project managers. It analyzes performance, visibility and brand awareness which is important for marketing and advertising. With detailed analysis of the system design, features, implementation and performance, the document proves highly valuable to developers and testers.
Through the rest of the document, one becomes familiarized with the scope of these food delivery web applications - from their purpose, benefits, and business strategies. The context and origin of the product as well as its basic functionality are then explained in relevant detail along with an analysis of its different classes, design, and implementation. We then detail the interface requirements, build analysis models, and examine system features and non-functional requirements.

1.3 Product Scope

The online food delivery web app incorporates recommendation models to analyze customer preferences, previous orders, and ratings, enabling personalized product recommendations and enhancing customer satisfaction while boosting revenue generation. The app's expansive database stores customer information and order history, facilitating efficient order processing and personalized experiences. Additionally, the app features a reviews section that promotes transparency by showcasing product performance and user feedback, including detailed reviews and visual media attachments. This fosters trust among users and encourages community engagement, contributing to a positive user experience. The app also emphasizes secure payment transactions and guaranteed, timely delivery, ensuring customer trust and loyalty. In terms of business strategy, the app prioritizes sales growth through effective cost management, customer retention strategies, and leveraging technological advancements and marketing strategies. Continuous research and development, logistics optimization, strategic investments, and partnerships are also crucial for business expansion and long-term success. The ultimate vision of the online food delivery web app is to provide a seamless, user-friendly platform that meets the needs of both customers and restaurants, offering a wide range of food options and enhancing convenience in food ordering and delivery processes.

1.4 References

1. React documentation
2. How to Use MERN Stack: A Complete Guide
3. Visual Paradigm: Development Tool Suite
4. MERN Stack Tutorial

2. Overall Description

2.1 Product Perspective

The system includes the user subsystem. The online shopping system provides an outstanding way of bringing customers on an online platform to make purchases in an efficient and secure manner irrespective of the distance between the two. It is a platform for customers to shop items online without having to visit a store or meet a seller physically. This system is a one stop for customers to shop from a variety of food items online. The restaurant uploads their food items to the system and the customers browse from these items and order them.

2.2 Product Functions

Enlisted below are all the major functions supported by the online shopping system along with the user classes.

- **Register**
- **Login**
- **Logout**
- **Search item**
- **View item**
- **Add item to cart**
- **View shopping cart**
- **Change items in cart**
- **Place order**
- **View order**

2.3 User Classes and Characteristics

Customer - He/she is a verified user of the system who is intended to order a food item sold by a restaurant using the platform. The functions used by customer are register, login, browse item, view item, add to cart, view cart, proceed to buy, place order, view orders, logout.

2.4 Operating Environment

There are two modes of using the software - **mobile applications** and **web applications.** Mobile apps can be run on any android, iOS versions. Web applications can be run on Windows 10: Google Chrome (78 and later); Mozilla Firefox (70 and later); Internet Explorer (11 and later); Microsoft Edge (18.18362 and later), Mac OS X: Apple Safari (13.0.1 and later). The Internet is a necessity for the system to be accessed.

2.5 Assumptions and Dependencies

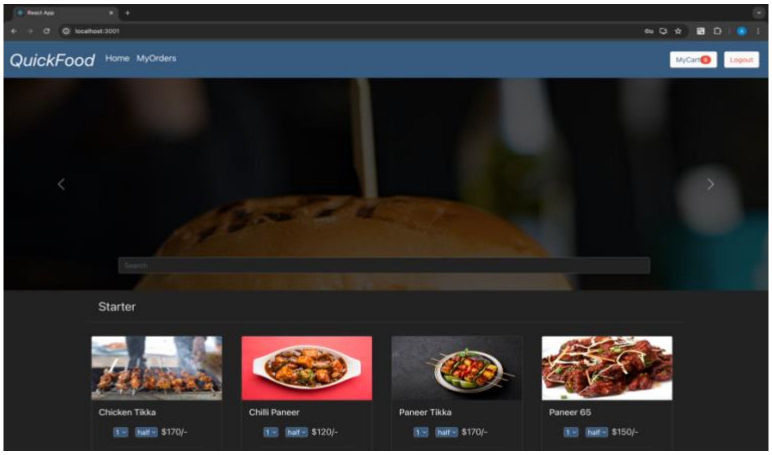
Under the assumption that a Windows/iOS/ Linux based operating system is available with C++/Python working along with database management software available, designing a modular view of the system is smooth. For a basic tool we are also assuming that only one customer may place an order at a given time but will attempt to expand the scope. The recommendation models are assumed to be dependent on the server and its functionalities though relevant to customers will be more clearly defined by the server.

3. External Interface Requirements

3.1 User Interfaces

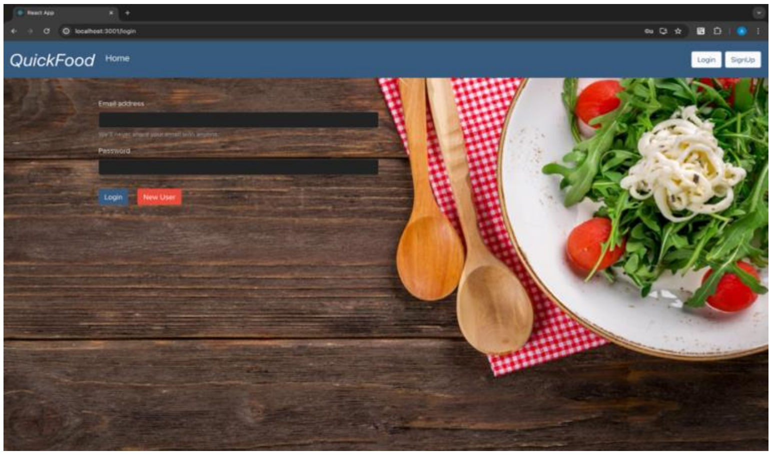
-> **<u>Home Page</u>**:

- The home page of this food delivery web app is designed to be attractive and user friendly.
- It includes - search bar, buttons like Home, MyOrders, MyCart and Logout.
- It also includes search bar along with the food items separated by Category.
- There are cards for different food items with the options to order like quantity and amount and the price according to the options. Also, a ‘Add to cart’ button is positioned on the card to add the item in the cart.



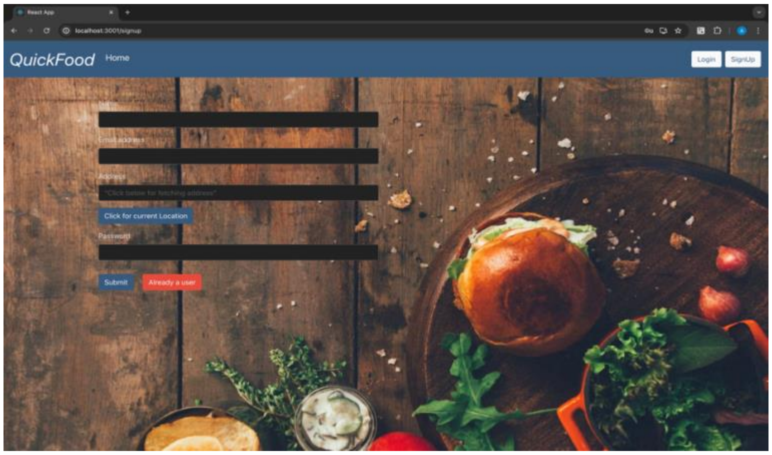
-> **<u>Log in</u>**:

- This page allows the users with an account under this food delivery app to Log in to their account. The user can Log in with their email id and password. The user, after entering their email id and password number can click on the Login button. If the entered email id and password is valid, the system takes the user to the homepage of the system.
- If the entered email id or phone number is wrong, the system displays an error message saying ‘Enter valid credentials’.
- There is New User button which will redirect to the sign-up page. Also, there are login and signup buttons in the Navbar.



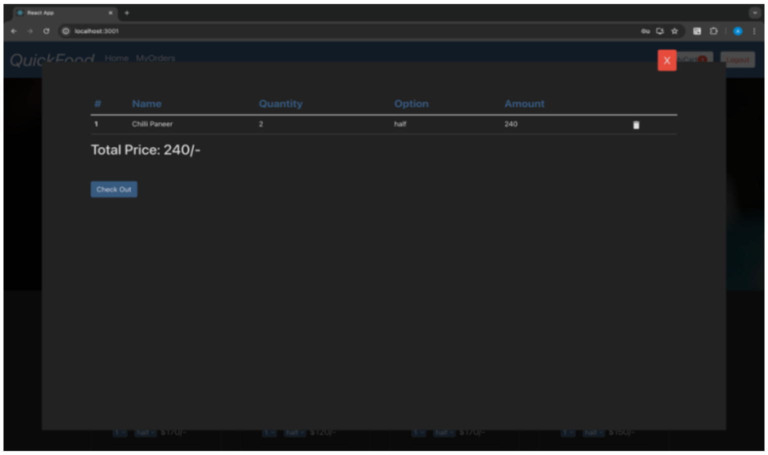
-> Create Account:

- This page allows users to create a new account. The user is asked to provide their Name, Email id, address, and password. The constraint on the password field is that the password must contain at least 5 characters. After filling and clicking on Submit button, the user will be redirected to login page.
- There is a check in place to check if the user already exists based on the email address. If the email exists in the system, the user is redirected to login page.
- There is a button provided to fetch the current location and use as address.
- There is a log-in button on this page for the users who already have an account.
- The user shall be taken to the sign in page after clicking on it.



-> Cart:

- This page allows the user to add the food items they wish to order in the cart. It provides information about all the items added to the cart by the user. For each item in the cart delete functionality is provided to the user.
- The user can then select the 'Check out' button to proceed with ordering the item(s).

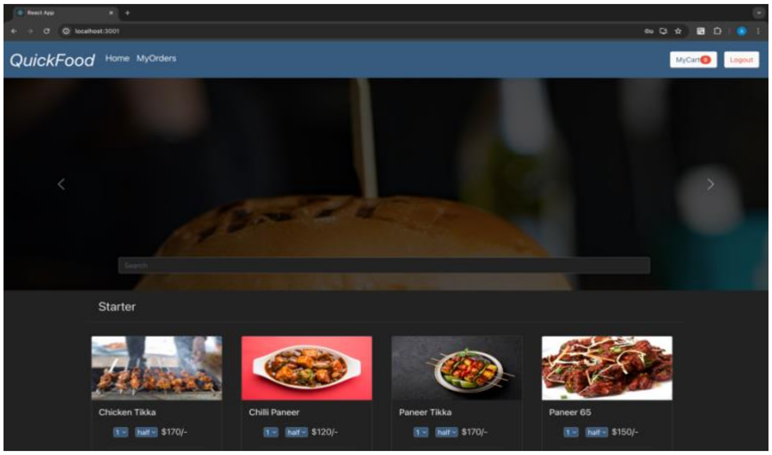


#	Name	Quantity	Option	Amount	
1	Chilli Paneer	2	half	240	🗑

Total Price: 240/-

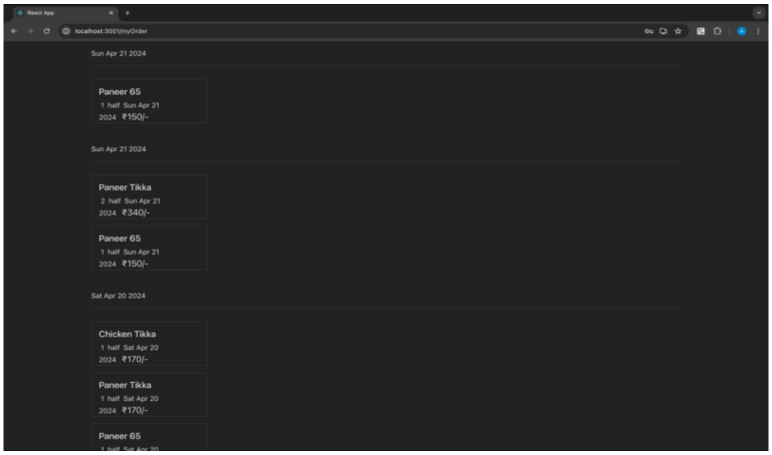
-> Search Bar:

- The users can use the Search Bar to conduct a Food Item search and find the products they seek quickly and easily. It is present in the top navigation bar making the customer's search the focus of the food delivery web app.



-> Orders:

- This page displays all the previous orders placed by a user categorized by date.



Sun Apr 21 2024

Paneer 65
1 half Sun Apr 21 2024 ₹150/-

Sun Apr 21 2024

Paneer Tikka
2 half Sun Apr 21 2024 ₹340/-

Paneer 65
1 half Sun Apr 21 2024 ₹150/-

Sat Apr 20 2024

Chicken Tikka
1 half Sat Apr 20 2024 ₹170/-

Paneer Tikka
1 half Sat Apr 20 2024 ₹170/-

Paneer 65
1 half Sat Apr 20

3.2 Software Interfaces

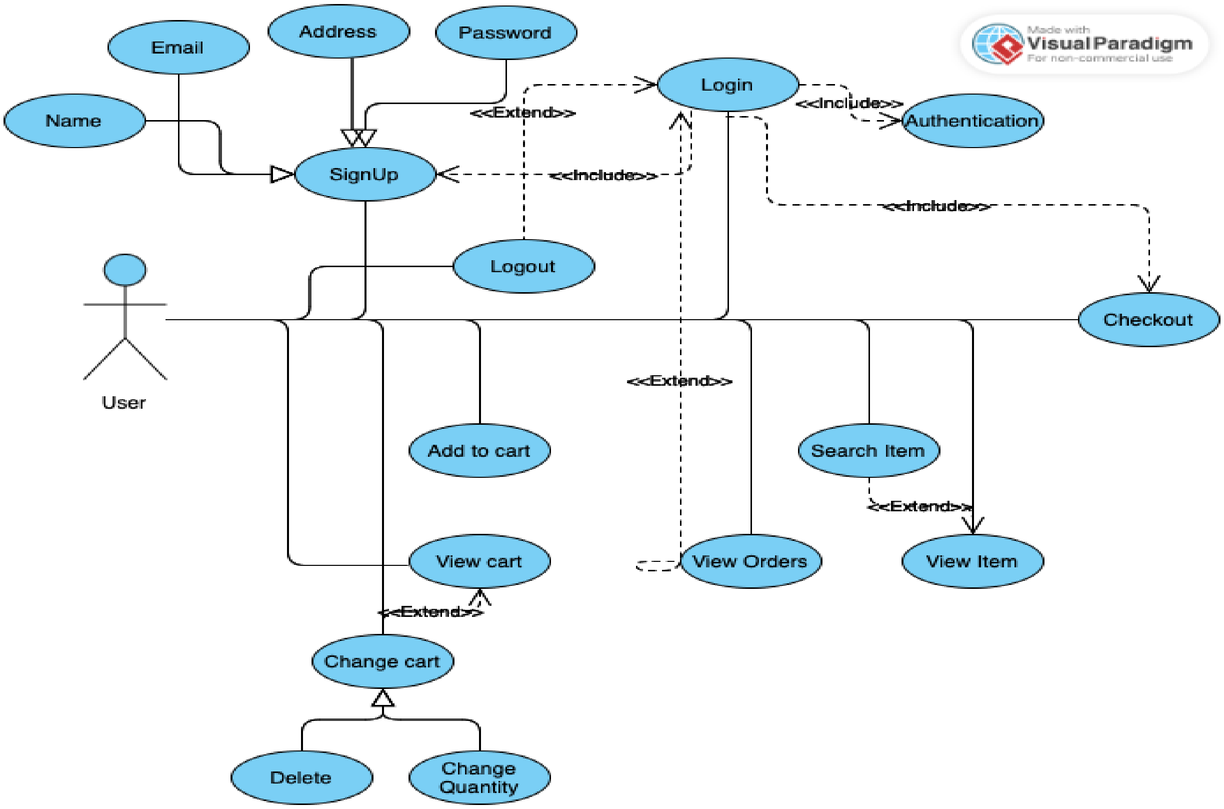
- All the web pages of this food delivery web app are majorly built using development tools like HTML, CSS, JavaScript, Bootstrap, React, Node, Express etc.
- This food delivery web app is accessible through the internet on any Operating System like Unix, Linux, Mac, Windows, etc.
- This system stores the product data, customer data in mongo DB database.
- The complete information about the products is stored in the database of the system. The content manager gets various information about the product like the images of the product, product's name, features, price, brand that is selling it, product reviews, product ratings etc which is displayed to the users.

3.3 Communications Interfaces

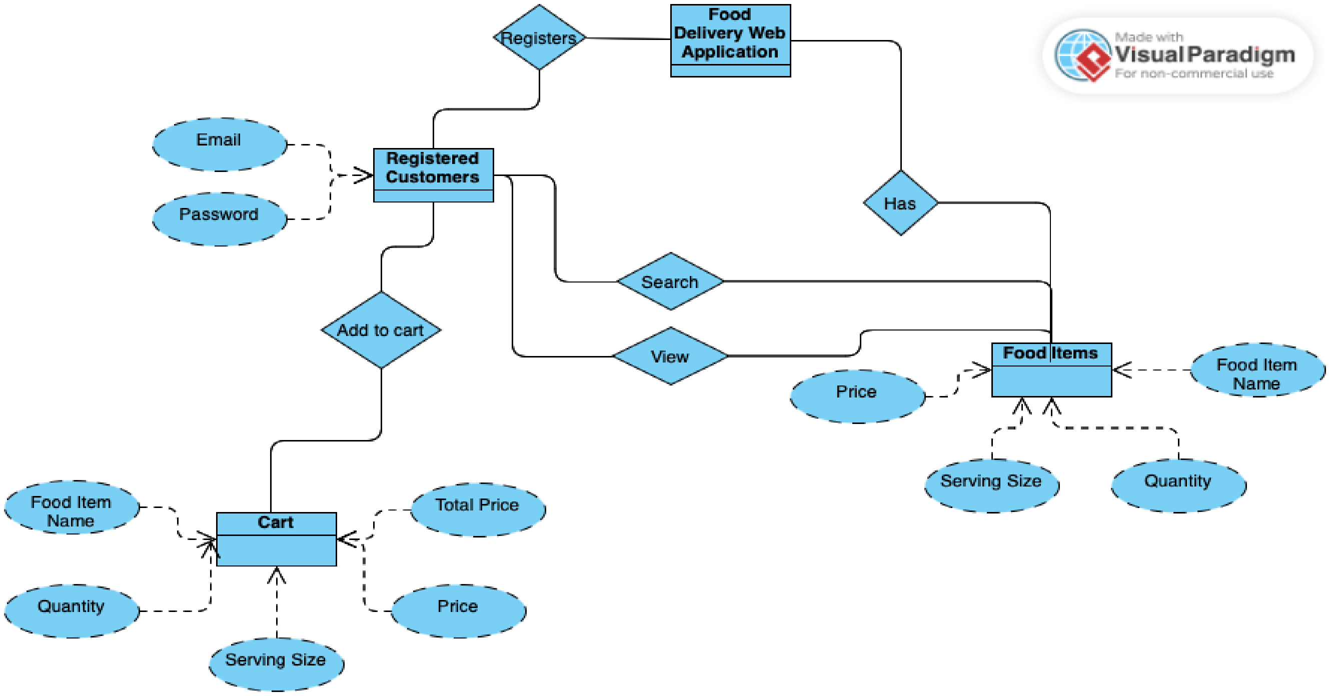
- The user can access the online shopping system through the internet by searching the system's name on the web browser.
- The system shall use the HTTP protocol for communication over the internet.
- The system shall give a confirmation to the customer that their order is placed by sending a message to the customer's email id

4. Analysis Models

4.1 CUSTOMER USE CASE DIAGRAM:



4.2 ER DIAGRAM:



5. System Features

5.1 User Accounts

5.1.1 Description and Priority

Users from subsystems- customers must have an account to conduct transactions on the food delivery web app. Users without system accounts will only have browsing permissions from the home page and do not have options to order on the system. Customers' accounts will hold information about their name, email id or phone number, password.
Priority level: High

5.1.2 Stimulus/Response Sequences

In the home page, users can select the signup or login button and type in their credentials for registration or for login respectively. Upon matching the required criteria, the account will either get created and the login page is displayed, or the user is logged in to his/her account and the home page is displayed.

5.1.3 Functional Requirements

REQ-1: Register

- User: Customers
- Input: In sign up page
  - Customer - enters name, email-id/phone number, location and password.
- Output: Successfully registered, the login page is displayed
- Alternative flow(s):
  - In case of repeated/invalid email id, ask user to re-enter a valid choice.

REQ-2: Login

- User: Customers
- Input: In login page
  - Customer - enters registered email-id/phone number and password.
- Output: Successfully logged in, the home page is displayed
- Alternative flow(s):
  - In case of invalid email id or a mismatch between user id and password, ask the user to re-enter a valid credential.

REQ-3: Logout

- User: Customers and sellers
- Input: Click 'logout' button in home page
- Output: User is logged out of the account, Login page will be displayed
- Alternative flow(s): none

5.2 The search facility

5.2.1 Description and Priority

Customers can search for a food item from the catalogue of items in the food delivery web app. They can search for a food item using keywords related to the product. Relevant options are displayed on the page in the form of cards.
Priority: High

5.2.2 Stimulus/Response Sequences

To search for the product, the customer types in keywords into a search box of the food item. This action immediately shows the most likely food items. The user then orders the product he/she wants.

5.2.3 Functional Requirements

REQ-1: Search item

- User: Customers
- Input: In the home page
  - click on the text box of search bar.
  - type in the keywords related to the food item.
- Output: List of products related to the item searched for
- Alternative flow(s):
  - Displays:
    - No results for the searched term/keyword

REQ-2: View Item

- User: Customers
- Input: From the list of items click on Add to cart to add the food item in the cart.
- Output: Details of the selected food item like - price, name, type, quantity, images of the item will be displayed, and add to cart button
- Alternative flow(s): none

5.3 The shopping cart facility

5.3.1 Description and Priority

Once the customer views and selects an item that he/she wishes to order, one must add the item to cart using the add to cart button. The shopping cart contains all the items that the customer intends to buy, there is one shopping cart associated with one user account. The user can browse for an item, add it to cart and continue his/her shopping gracefully and order all of them at once.
Priority: high

5.3.2 Stimulus/Response Sequences

To add an item to the shopping cart, the user must click on the add item to cart button in the view item page, and the customer can continue ordering other items. The customer can view all the items in his cart by clicking on the view cart button, upon which a list of all items along with price of individual item, quantity and total cost of the cart is displayed. In this page the customer has the option to remove items from the cart by clicking on the delete item button next to the item. From here the customer can proceed to order all the items in the cart, by clicking on the checkout button or can further continue shopping by going back to the home page by clicking on the food delivery web app/home button.

5.3.3 Functional Requirements

REQ-1: Add item to cart.

- User: Customers
- Input: In view item page
  - click on the add item to cart button.
- Output: Added item to cart, will remain in the same page
- Alternative flow(s)
  - In case of adding an item that is already in the cart, the quantity of that item will be increased by 1 in the cart.

REQ-2: View shopping cart

- User: Customers
- Input: present in all pages
  - click on the view cart button.
- Output: List of items that were added to cart is displayed along with item details and total cost
- Alternative flow(s): Incase the cart is empty, ‘cart empty’ is displayed and the customer has the option to return to home page by clicking on home button.

REQ-3: Change items in cart

- User: Customers
- Input: In shopping cart page
  - click on delete item button present next to the item to delete the item from the cart.
  - to change the quantity of items, click on ‘Add to cart’ button on the cards.
- Output: Changes reflected in the shopping cart page based on activity performed, the item will be removed from the page if it is deleted
- Alternative flow(s): none

REQ-4: Checkout

- User: Customers
- Input: In shopping cart page
  - click on Checkout button.
- Output: Cart is emptied, and order is placed message pops.
- Alternative flow(s): none

REQ-5: Continue shopping

- User: Customers
- Input: In shopping cart page
  - click on home page.
- Output: home page is displayed
- Alternative flow(s): none

6. Other Nonfunctional Requirements

6.1 Safety Requirements

There are a wide range of concerns that arise wherever online transactions are performed- especially with money transactions and address records. One of the most common risks of online ordering is online ordering. Stealing one’s personal information to make illegitimate purchases, phishing and keylogging are common ways used to steal identity. Another common risk is credit card frauds. Customer’s may be redirected to the malicious user’s site during payment- that is made to look like the legitimate payment gateway and cost them money and may even have their credit card numbers stolen. Malwares and Adware’s commonly plague many websites. The risk is even higher with online food delivery websites as scammers may easily acquire sensitive information entered by the user. Simply visiting the website makes the malware attack the user system. To ensure user safety, measures must be taken from both the user side as well as the food delivery system’s side. From the user side, the user must never divulge any personal information except during bill payment. Users must be careful not to fall prey to phishing by verifying that mails being sent from the service are in fact, authentic. Users must be wary of ads and ensure that appropriate antivirus software’s has been installed in one’s system. The food delivery system itself has to take concrete measures to ensure that customers can trust the service being provided to them. Site seals on web sites are visual indicators that the website is safe and secure. Acquiring SSLs certificates are mandatory as this ensures the user that the communication channel is encrypted.

6.2 Security Requirements

To ensure secure transfer of data, the system must use secure sockets in all transactions that include any confidential customer information. The system may choose to automatically log out all customers after a period of inactivity and verify by confirmation all the transactions with the customer's web browser. The system will ensure that cookies and all temporary storage do not hold any sensitive information. The customer's web browser must never display a customer's password or credit card details. The system's back-end servers must never display a customer's password and these servers must only be accessible to authenticated administrators. These databases must be encrypted and within the company's perimeter. The service can ensure user identity authentication using two-step verification procedures. Further, the system can ensure that any additional security risks experienced by the users can be reported to the system immediately.

6.3 Software Quality Attributes

Adaptability is of primary importance to both types of users of the system. It should be able to easily cater to the needs of sellers and customers and be able to add additional features and provide support as demanded- especially in case of system vulnerability. As an online shopping system, it must define product availability by defining the targeted audience be it global users or a more restricted user space. It is also important to ensure that sellers are able to deliver products to the regions promised by the service. Due to user sensitive information being required, ensuring that money transactions are not error prone is vital. Utmost correctness is to be expected in ensuring that money is refund money in case of returns, offers on products are appropriately deducted from the selling price, delivery services have minimal error and that warehouses function properly. The system should also be highly flexible with servers that are equipped to be able to accommodate large flow of traffic. The system must be interoperable and must work without any compromise in performance and quality in both mobile applications as well as web applications. should be built with modularity so that additional features can be added and removed easily without changing too much of the original structure- this also allows reusability. The reliability of the overall program depends on the reliability of the separate components. The main pillar of reliability of the system is the backup of the database which needs to be continuously maintained and updated to reflect the most recent changes. Testing the system can be done on various fronts. Unit testing can be done by taking atomic components of the system, isolating it from the remainder of the code, and determining whether it behaves as expected. Program units are combined and tested as groups in multiple ways. Integration testing can expose problems with the interfaces among program components before trouble occurs in real- world program execution. Validation testing focuses on user visible actions and user recognizable output from the system and is said to be successful when software functions in a manner that can be reasonably expected by the customer.

Appendix A: Field Layouts

Fields with information required to Sign up:

FIELD	LENGTH	DATA TYPE	Description	Is Mandatory
email-id	20(max)	Alphanumeric		Y
Password	9(min)	Alphanumeric		Y
Address	NA	String	Geolocation	Y
Name	1(min)	String		Y

Fields with information required to Login:

FIELD	LENGTH	DATA TYPE	Description	Is Mandatory
email-id	20(max)	Alphanumeric		Y
Password	9(min)	Alphanumeric		Y