SOFTWARE REQUIREMENTS SPECIFICATION
(SRS Document)

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1. Introduction

The software is to be developed for a start-up venture called Healthy Dine which is going to sell healthy food products and provide services that can develop and promote eating and living health-conscious life. The startup focuses on computerized communication to provide and promote a healthy product that a customer can buy by a secure method of performing financial transactions through our payment gateway without the need for any guidance with our quality self-explanatory user interface that enables them to access their bank accounts and perform various transactions to buy our startup products.

1.1 Purpose

This SRS defines External Interface, Performance and Software System Attributes requirements of software development for our startup Healthy Dine. This document is intended for the following:-

Software Developers for the purpose of maintenance and new releases of the software.

Startup foundation legacy software

Software Testers.

1.2 Scope

This document applies to the Healthy Dine software interface. This software facilitates the user to perform various transactions in his account with ease to buy products from our website. This software offers benefits such as adding items into a cart, Health-related blogs and vlogs to attract customers and try to reduce customer acquisition costs.

The software takes as input the login Id and the bank account number of the user for login purposes and ordering the product. The outputs then comprise an interactive display that lets the user select the products and add them to the cart with a receipt at checkout.

The software is expected to complete in a duration of four months

1.3 References

The references for the above software are as follows:-

i. How to Build a (Successful) Ecommerce Website (2021)

ii. Healthy lifestyle app: things to consider when you want to create an outstanding one

iii Building a Food Recommendation System | by Luís Rita | Towards Data Science

1.4 Overview

Section 1.0 discusses the purpose and scope of the software. Section 2.0 describes the overall functionalities and constraints of the software and user characteristics.

Section 3.0 details all the requirements needed to design the software.

2. The Overall Description

2.1 Product Perspective

The Healthy Dine startup consists of various business components where we will have a single cloud kitchen in a location and based on the orders that we receive from the customers they will be delivered to their address as we tie-up with a logistic company for delivery, the main part of the website software application is essential to attract customers.

This software allows the user to access our website with login credentials and order healthy foods with their bank accounts remotely from their homes and can expect us to deliver food within a reasonable amount of time.

This software also allows the perform various other functions apart from just paying for their food as we have a special feature for our premium customers that they can buy food based on a recommendation system if they give their input about health data and other lifestyle habits to customize their orders and keep themselves healthy

Some of its hardware components of the project may require servers and back end databases The Healthy Dine software also communicates with the bank‘s central server and allows the financial gateway to function.

2.2 Product Functions

The major functions that are performed are described as follows:- The various functions that a

user can perform with his account are as follows:-

Customer Account Type:- The user has the freedom to select his account type as a regular customer or premium customer to whom we recommend the customized food delivery and for the regular customer he can select food based on his choice with no supervision and the software works basically the same after this point with food delivery.

Payment and Billing:- Transactions are recorded in the form of a receipt and the same would be displayed to the customer. The billing procedures are handled by the payment gateway that we are building with the software

Canceling orders:- The customer can cancel orders before paying for the transaction and can start a new order into this order cart session all over again.

Map locating the customer and delivery valet:- The software also has a facility of displaying the map that marks the locations of customers and of the person delivering food.

Recommendation system:- The machine also allows the premium user to input their health situations and their lifestyle habits along with the best-suited goals they want to achieve in our software and we display the list of the recommended food packages supported by professional diet planners that our premier customers can order.

2.3 User Characteristics

There are different kinds of users that will be interacting with the system. The intended user of the software are as follows:-

User A: A novice health-conscious customer. This user has little or no experience with the application and about the subscription plan. User A will find the application easy to use due to clear and smooth UI design with proper catchy colours for buttons and clear navigation links to different pages.

User B: An experienced customer who we can consider as a premium customer who has ordered products several times according to his health data prediction. There is an option to edit his health data so that the system can provide new predictions for the diet the customer has to follow.

Design Editor: The application designer. This user is familiar with the functionalities and features of the application. This user is in charge of editing the products, their stock and prices and the features of the health prediction section. This user is presented with a different display when he logs in with the administrator's password and is provided with options different from that of a normal user. He has the authority to change or restrict various features provided by the application in situations of repair.

2.4 Constraints

The major constraints that the project has are as follows:-

The simultaneous access to an account through both mobile and laptop is not supported.

The minimum amount of order with the money worth per user is Rs 100/-

The software requires a huge memory database and training data to give accurate predictions in the food recommendation system.

Since the project is in the prototype stage the live location of the food being delivered is not supported

2.5 Assumptions and Dependencies

The requirements stated in the SRS could be affected by the following factors:

One major dependency that the project might face is the changes that need to be incorporated with the changes in the stock of the products, the addition of any new category and also any new diet recommendations from leading nutritionists for certain factors. As these products and recommendations change the system needs to be updated with the same immediately. A delay in doing the same will result in chaos for customers to properly plan their diet and order products. So this should be changed as and when required by the developer.

We are also assuming that the recommendation system regarding the diet for a user will be continuously learning and updating with the user's previous orders in the interested category of Products.

Another assumption is the calculation of BMI as we take the input as are going to update The BMI in the backend automatically based on the food order intake and not updated based on Information of user's physical activity and other inactivities from our website.

The dependency is on cloud kitchen to deliver high value end products

Another dependency the project might face is with the delivery process since the orders would be delivered with a third party delivery company where timely and safe delivery has to be assured.

At this stage, no quantitative measures are imposed on the software in terms of speed and memory although it is implied that all functions will be optimized with respect to speed and memory.

It is furthermore assumed that the scope of the package will increase considerably in the future.

3. External Interface Requirements

3.1.1 User Interface Requirements

The interface provided to the user should be a very user-friendly one and the interactive provided is a menu-driven one and the following screens will be provided:-

A login screen is provided in the beginning for entering the required username and password to enter into the account of the user.

The administrator is provided with a screen that enables him to block any service provided to the user if they find an illegal transaction

After the login, a screen with a number of options is then shown to the user. It contains all the options and features mentioned in the below system features for the user to enjoy from our products and services along with a description to enable the user to understand and select a proper option.

A screen will be provided for the user to buy various foods from the user's account.

A print statement is generated for the user displaying all the transactions they performed after they pay money using a payment gateway portal.

A screen will be provided that displays the location of the valet who is going to deliver the user their order.

3.1.2 Hardware Interface Requirements

There are no hardware requirements for our project apart from the cloud kitchen where healthy food is prepared and tie-up with a logistics company to deliver the food.

3.1.3 Software Interface Requirements

In order to perform various different functions, this software needs to interact with various other software. So there are certain software interface requirements that need to be fulfilled which are listed as follows:-

The transaction of payment gateway portal management software used to manage the transaction and keep track of resources and orders along with payments.

We use software code to maintain account integrity and login credentials.

A high-end database is needed to keep a record of user accounts

3.1.4 Communication Interface Requirements

Communication with the Internet protocols for each session for various functions such as login verification, account access to run the website like the communication protocol TCP/IP and File Transfer Protocol. (FTP)

4. System Features

1. User-Friendly Website :

Starting from landing pages to feedback, the user can take a joy-ride through our user-friendly interfaces. The various web pages of our website, to mention a few, like:

- Signup page for regular users
- Signup page for premium users
- Home page for regular and premium users
- Search page
- Order Billing page
- Payment gateway
- Payment-exit portals
- Order Location and ETA Tracking Pages
- Feedback page

Are all interactive with some being dynamic web pages which change from one user account to another. At all the points of web pages which require user interaction, a detailed short description of what needs to be done is given for ease of data filling.

Pages like Billing page which might require a hardcopy storage has options to download the payment statements. Pages like feedback are much detailed allowing the user to rate each and every product, and service offered through the HealthyDine individually.

2. User Food-Experiences :

Keeping in mind the key role user reviews play in recommending, the core functionality of HealthyDine, the system is curated so as to allow the intake of user experiences in any form including :

- Rating by stars
- Rating by emoji's
- Ratings through reviews
- Ratings through discussion forums related to restaurants or diet suggestions etc

As easy as possible. The system takes the user ratings into account seriously and discourages the Machine learning models to recommend disliked foods and encourages to recommend more of liked and healthy foods to the user.

3. Easy Payment Gateways :

Payment Gateway is one of the crucial parts of this website since we deal with the premium subscriptions and product delivery. The user will have two types of payment methods. The reason for that is a user can buy a premium subscription for having top tier benefits. And if a user who doesn't want any premium subscription and just wants to buy some supplements for themselves won't need any premium related details.

Among the two options on the landing page, if the user decides to take premium subscription then they will have a payment option that asks them to select the time period for which they want to subscribe.

If the user wants to buy something the payment gateway looks similar for both of them. But the premium subscribers will have more features in that aspect than the free users.

4. Personalized Food Recommendation System:

The system has the flexibility in recommendations based on the user type. Depending upon the subscription of the user which is asked for during the registration process, the user gets to see different recommendation systems in action. This working of the account-specific recommender system unfolds as follows:

The landing page of the website presents to the user two options.

- Continue for free
- Subscribe for a premium account

When the user chooses either of these options the details for signup that are asked for and the recommender systems in action at the backend are respectively described below

For Free Account Holders

This system is designed to make quick and general food recommendations for users that are not so keen about their everyday food intakes. The system recommends the food items primarily based on the restaurant's popularity and proximity to the user location. The functionality of such a system starts with

The signup page where the user is required to enter certain details that include:

- User Name
- Password
- Mail ID

The system stores the above information in the back-end databases allotted for the regular users. The user is directed to a home page after the signup where the user starts to see the recommendations lined up for him/her based on the restaurant popularity(adjudged by the star ratings and sentimental analysis of the user's reviews and some other review forms discussed in user-food-experiences feature) and proximity to the user's location which is estimated in the back-end by the system at the time of user-activity.

For Premium Account Holders

The system is designed to provide the premium users with the facility to instantly arrive at the healthy food items they would best require on our website without having to browse for longer times. The functioning of this recommender system is as follows:-

Initially, when the user is registering a premium account on the website, he/she is prompted to share some of the information pertaining to the user which includes:

- User Name
- Password
- Mail ID
- User medical history of food allergies(as of sign up time which can be updated later)
- Height and Weight (as of sign up time which can be updated later)
- User medical history of any vitamin or mineral deficiencies(as of sign up time which can be updated later)
- User medical history of any other chronic or acute illness(as of sign up time which can be updated later)

The system stores all of the above user information into databases and thus creates a **medical-record** of each user. The system initially presents the user with two catalogs of food browsing called the "Fast Foods" and the "Nutritious Foods" and doesn't make any personalized recommendations. This can last from a few days to a few weeks called the data-gathering period. During this phase, the system gathers information about what fast foods are preferred mostly by the user and what nutritious foods does the user find interest in. This information is maintained in the database, as an **interests-record**, and is associated with the user account along with the medical record.

After the data-gathering period ends, the system starts displaying two filters "**Go-Nutritious**" and "**Go-Snacky**" which decide the type of recommendations that follow.

When the Go-Nutritious filter is selected the recommender system strives to make nutritious food recommendations segregated by different criteria that lay themselves across various rows and are named as :

- Carbohydrate Rich Foods
- Protein Rich Foods
- Fats Rich Foods
- Vitamin and Minerals Rich Foods
- Diet-specific for your medical conditions

Within each category the recommender system places the most-likable food for the user on the left most and least likable on the right most column. Upon selecting a food item there is a second layer of recommendation applied to the restaurants that is done using the data received from user food experiences.

All the food items selected are added to a cart which also shows the quantity of food from each of the categories listed above the user is preferred to take, which is done using the BMI of the user in the back-end.

When the Go-Snacky filter is selected the user sees the recommendations according to his/her interests alone and medical-records are not considered.

When either of the “Go-Nutritious” or “Go-Snacky” filters is selected, the system makes use of some general geographical and weather information at the time of user activity like

- Location
- Season/Temperature
- Time

to recommend the food items to the user that are either more nutritious or more snacky type as filtered by the user.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The following list provides a brief summary of the performance requirements for the software:

5.1.1 Capacity

The Healthy Dine will provide customer service from 7 AM to 11 PM.

5.1.2 Dynamic requirements

The payment from customer account transfer time must not exceed 10 sec. under normal server workload and 20 sec. under peak server workload using UPI or other payment gateways.

Receipt of the order to print in digital must be time effective and it must not exceed 10 sec. under normal server and peak server workload.

5.1.3 Quality – The following guidelines are used to judge the quality of the software:

Consistency – Entire code will be consistent with respect to the overall project overview and design along with providing quality user experience.

Test cases – All functionality will be thoroughly tested and all the test cases will be passed

5.2 Software System Attributes

5.2.1 Reliability

The data communication protocol along with network security ensures reliability and quality of data and payment gateway

The memory system and databases which we require shall be of non-volatile type.

5.2.2 Availability

The product will have a backup server in case of server failures.

Any abnormal operations and tampering of the databases and server shall result in the shutting down of the system. After that, the system shall have to be manually restarted by maintenance personnel. There should be no inconsistency introduced in the account during whose transaction the system is abnormally shut down.

5.2.3 Security

The software shall be compatible with security standards.

The system shall have two levels of security i.e. payment verification both authenticated by the user and the software.

The account login password shall be 6-14 characters long.
Passwords shall not contain the names of customers as they are easy to be hacked.

Passwords can contain digits, hyphens and underscores.

There shall be a security camera installed near the cloud kitchen to ensure safety standards.

5.2.4 Maintainability

The system components i.e. modem, memory, disk, drives and servers shall be easily serviceable

The software contains a mechanism of self-monitoring periodically in order to detect any fault.

5.3 Business Rules

The business rules for the software are as follows:

Making the entries in the system regarding all the details of the bank account of the user safe and secure and keeping the bank account of the user updated as soon as changes are encountered so that the data is in an inconsistent state. Blocking or seizing of the account of the user on the discovery of any illegal transaction.

Maintain the backup of all the accounts for reliability.

Keep the data under privacy policy safe and secure.

THANK YOU