(Healthy Eats)

(Team 5)

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Software Requirements Specification Document

Version: (2.0) **Date: (12/8/2019)**

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1 Purpose

Fast paced lifestyles are becoming the culture of many today in trying to adapt with the growing global economies and familial/relationship demands. Therefore, people are constantly trying to find ways to incorporate quick shortcuts to address their basic needs. These choices can lead to neglecting basic considerations of a person's physical well-being. Dining out, particularly at fast food restaurants, has become the norm. However, while convenient, these options oftentimes are detrimental to a healthy lifestyle, especially for people that already have pre-existing conditions that require a constant maintenance plan in order to sustain healthy living. Choosing a restaurant nowadays can be daunting with limitless options and different types of cultural cuisines. Usually a deciding factor of choosing a restaurant is based upon past experiences or recommendations. However, other factors like pricing, locale, convenience, or group choices can also influence the decision. Currently, restaurants' nutritional facts for each item is not easily accessible or visible to consumers when deciding to dine out. Individuals might go to the main website (if available) of a restaurant or physically travel to the eatery where they can choose to view the nutritional information regarding their food options. If they decide to stay and eat, it is probably too late to find health cognizant selections, therefore, they might decide upon a menu item that may not be healthy for them and their pre-existing conditions.

Most people do not search for the nutritional facts of their meal options on their menus to evaluate if their dietary constraints are accommodated by the offered cuisine because such a task can be inconvenient on the go. Individuals do not carry their health information to determine what type of food they can and cannot consume. Moreover, average individual does not have the expertise on how to manage their nutritional intake and struggle with their personalized health conscious choices to healthily balance their diet. It is critical to have immediate access to this information that affects the physical well-being of an individual. As a result of not having accessible choices at hand, the primary causes of death in the United States are derived from food choices that lead to conditions like heart disease, diabetes, anaphylactic allergic reactions and high cholesterol. These major health diseases can be directly related to people's daily eating habits and lifestyles. Because of busy schedules and responsibilities of individual's demanding daily lives eating out can be alluring making it difficult to manage one's food options, therefore leading to a worsening of their health conditions.

2 Scope

The objective of this project is to develop an application that manages individual's food consumption and give recommendation for selecting medically healthy restaurants or fast food places. The user can search from a database that is uploaded with specific cuisine types (i.e. Mexican, Italian, etc.) and location preferences which is periodically updated to present recommendation and options that eliminate deciphering the nutritional attributes based upon a specific medical condition. The user will be able to create a profile that will outline their necessary constraints based upon their condition and make informed decisions that they can set as their saved favorites to manage their diet. This will enable them to eat out wisely and limit the anxiety without compromising their health restrictions. They will also have the option to manually set/adjust perimeters, such as sodium intake, carbohydrate limits, and modified diet restrictions, within the profile based upon amended orders from one's medical personnel. Additionally, the user will be able to use Android or iPhone platforms to organize their diet selections. Using the nutritional data from a desired restaurant to cross-reference the food selections, the application would supply the customer with healthy options (if available) or recommend comparable healthy alternatives that would adhere to the medical limitations of the individual's profile. Many people have trouble managing their life-threatening illnesses because they are in a hurry and live in a

fast-paced society. This application will accommodate these types of lifestyles by simply managing their diets. Therefore, if the tool is used regularly, the outcome could help people with serious conditions control or reduce complications cause by diet choices. The objective is that the application can contribute to people potentially living longer, healthier lives, and even possibly incorporating some of the medically healthy food choices that they discover at the various restaurants into their daily diets.

3 User characteristics

The goal of this application is to provide a simple software that manages and provide recommendation for the general public to use when choosing a restaurant to dining in to. The application is intended for any gender, individuals who are eighteen year of age or older, and have a health condition from healthy to requiring medical condition. These individuals are the direct users of the application and require major influence on the user interface and software features. In addition, investors have a major impact in developing the application for financial support and government regulation and compliance.

3.1 Key users

Users that have the expected accessibility of the full application it is made for.

- **User role responsibilities:** the user of the application is responsible for entering personal information, provide feedback to a restaurant's performance, and update personal profile.
- **Subject matter experience:** General users are expected to be journeyman as they use the system and be familiar with the application platform
- **Technological experience:** User may vary in technological acumen as the target audience is the general public.
- **Other user characteristics:** Target users may have technological challenges that may need to be addressed in the user interface as well as education background which may require using common language to define medical terms and definition. In addition, elderly individuals may require font adjustment.

3.2 Secondary users

Users that have less or no accessibility for their individual profile and no data input.

- **User role responsibilities:** Create a profile and see restaurants nearby.
- **Subject matter experience:** Mostly journeymen for all secondary users.
- **Technological experience:** Mostly journeyman to master for secondary users.
- **Other user characteristics:** Secondary users will often need basic reading and some experience with technology apps. Accessible to mostly all who can use a mobile device.

3.3 Unimportant users

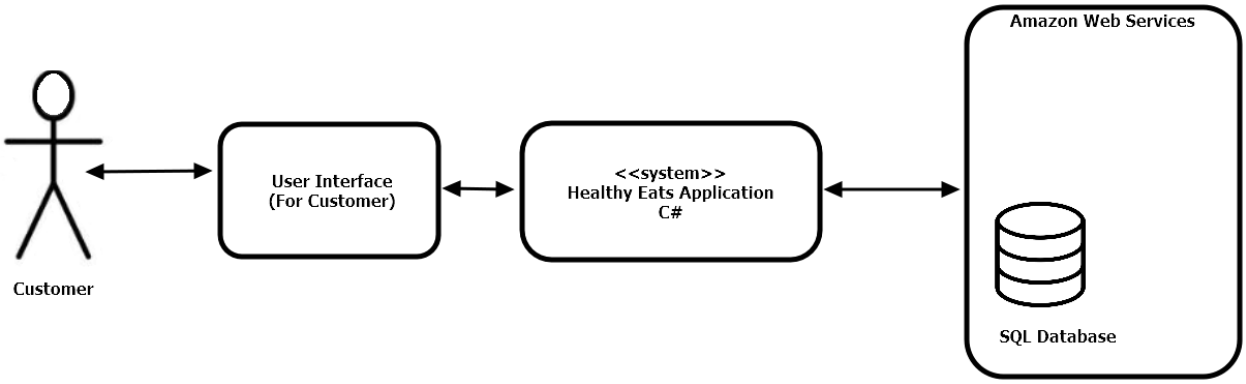
Unimportant users that do not affect or contribute to the full application.

- **User role responsibilities:** Create a profile and see restaurants nearby.
- **Subject matter experience:** Masters for mostly all unimportant users.
- **Technological experience:** Masters for mostly all unimportant users.
- **Other user characteristics:** Little to no interest in the application and will use it less frequently with an unfavorable attitude towards the application.

4 Product perspective

4.1 System Context

Healthy Eats consists of a Windows executable as the user interface for the main full front end of the application and uses Amazon Web Services for the SQL database. Information about users, restaurants, and restaurant information is stored and accessed from this SQL database. Diagram below shows these communications.



4.2 User interfaces

The specification and required characteristics of the Healthy Eats application are listed below and defined per user interface.

1. Log-In Page
   1.1. User shall be able to use a username and password for authentication.
   1.2. User shall be able to retrieve their username using alternative authentication process.
   1.3. User shall be able to retrieve their password using alternative authentication process.
   1.4. User shall be able to close application without authentication.
2. Sign-Up Page
   2.1. User shall be able to sign up to the application.
   2.2. User shall be able to use personal information to create new profile account.
   2.3. Application shall notify the user once the profile account has been successfully created.
   2.4. Application shall notify the user when there is an error during account creation.
   2.5. User shall be able to cancel the transaction at any time.
3. Home Page

3.1. Search function must be available by the users to find desired restaurant.
3.2. Restaurant recommendations must be visible to the home page.
3.3. Restaurant recommendations must be based on medical profile of the user.
3.4. Selection of Restaurant's food menu must be available in the home page.
3.5. Restaurant's rating and customers' feedback must be available in the home page.
3.6. User's favorite restaurant must be available on the home page.
3.7. Home page must have setting options, which includes the following:
    3.7.1.Edit Profile: Ability to update user profile.
    3.7.2.Logout: Ability to exit the application
3.8. Restaurant location should be available using Google Map.
3.9. Application shall allow user to rate restaurant and leave feedback.

4. Favorites Page
4.1. Application shall display the following information:
    4.1.1.Restaurant Name
    4.1.2.List of Food Menu
    4.1.3.Food Rating
    4.1.4.Price
    4.1.5.Restaurant's address
4.2. Application should display the following information:
    4.2.1.Image Sample of the Food (optional)
    4.2.2.Map Location (Optional)
4.3. Application should have a link to the full website of the restaurant, if available.

4.3 Software interfaces

Healthy Eats application is intended to be used by the general public and shall be readily available to any user in the United States using Windows computer. The primary Application Programming Interface (API) to develop the application is C# programming using Microsoft Visual Studio 2019 as the Integrated Development Environment (IDE). Microsoft SQL Server 2018 is used as the relational database to store the data of the application. Microsoft SQL Server database is run under Amazon Relational Database Service (RDS). This database has 20GB of storage and can auto scale to 1,000GB when needed. The initial setup of the database is one CPU and 1GB of RAM to minimize initial maintenance cost. However, the database performance is scalable to ensure the user experience is not compromised during high traffic in data transaction. Microsoft SQL Server Management Studio 2018 is used to manage and develop the database architecture. ADO.NET is used to communicate between the C# programming and SQL database.

Further information of the Amazon RDS can be found on the following web link:

https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Welcome.html

4.4 Hardware interfaces and Memory constraints

Healthy Eats software is intended to be an independent application and does not rely on any external hardware or machine input.

4.5 Deployment requirements

1. All C# program files and user-forms will be compiled as released executable, which includes the setup installation.
2. The setup file must be executed by the user prior to deploying the Healthy Eats application in his or her Windows computer.

5 Assumptions and Dependencies

The following information below are expected to available for the Healthy Eats application to function properly. If any related expectations may not be available, then the application will lead to execution failure and the Software Requirements Specification must change accordingly.

1. The user has access to the software to be downloaded using a USB drive.
2. User's Operating System on his or her computer runs Microsoft Windows 7 or later version.
3. The user's computer has internet connectivity and is available for use.
4. The user has administrator access to the computer to be able to install new software.

6 Specific requirements

6.1 System Functional Requirements

R1.1.1 The system shall provide an authentication mechanism for users.

R1.1.2 The system shall limit access to authorized users only.

R1.1.3 The system shall prompt the user for username and password.

R1.1.4 The system shall authenticate the user via the username and password.

R1.1.5 The user shall have the option to remain logged in on their personal mobile device after their initial authentication.

R1.1.6 The system must permit multiple accounts on a single device with two different unique username and login profiles for authentication.

R1.2.1 The system shall accept unlimited of login attempts.

R1.2.2 The system shall only allow modifications to a user's profile details, preference, and favorites if they are authenticated with their username and password.

R1.2.3 The system shall present the saved user account data to the user.

R1.2.4 The system shall allow the user to update his or her account profile at any time.

R1.2.5 The system shall inform the user that the information was successfully updated.

R1.2.6 The system shall adhere to user privacy policies as dictated by privacy regulatory rules regarding medical confidentiality laws.

R1.2.7 The system requires that data must be entered before a request can be completed.

R1.2.8 The system shall cross reference the users designated medical limitations for food choices when sending recommendation notifications.

R1.2.9 The system shall have a search feature that allows the user to search through specific cuisines using keywords.

R1.3.1 They system shall return a search result within 2 seconds.

R1.3.2 The system shall terminate a session that has been idle for 15 minutes.

R1.3.3 The system shall provide menus and nutritional details for the user's reference.

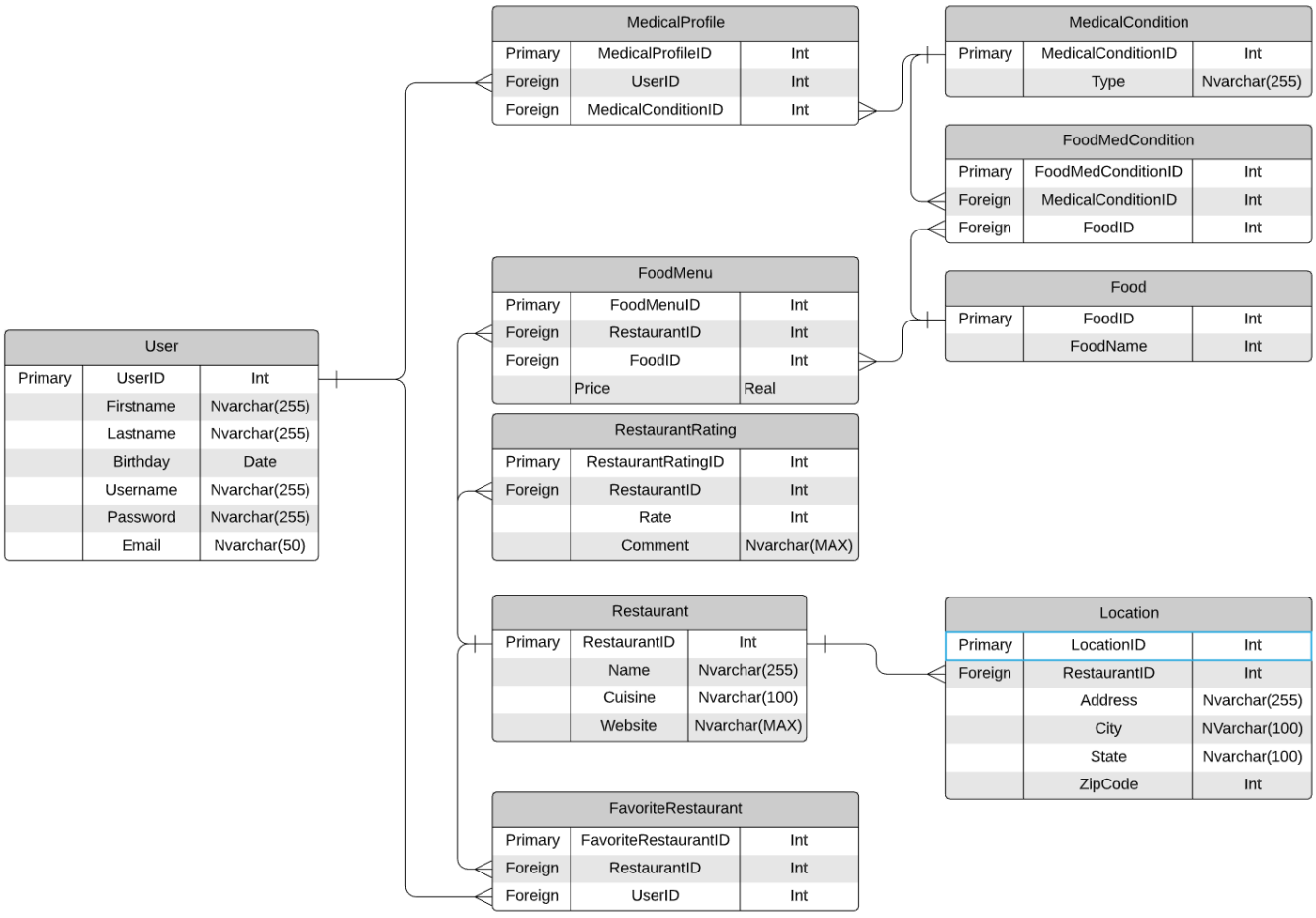
R1.3.4 The system shall allow the option to order and purchase food from their device for delivery and open a shopping cart screen.

R1.3.5 The system shall supply a receipt after all transactions have been completed to a specified email address.

R1.3.6 The system must run over the internet by using an internet connection.

R1.3.7 The system requires the use of a web browser to interact with the server.

6.2 Logical Database Requirements



6.3 Software System Attributes

Specify Non-Functional requirements that describe the system characteristics or attributes of the software.

6.3.1 Usability

R3.1.1 The system shall have a browser address that is easy to locate

R3.1.2 The system shall confirm all users profile and preference information is stored accurately.

R3.1.3 The system shall have a home view where the content of the application is simply revealed.

R3.1.4 The system shall be easily navigational for all users from novice to master abilities.

R3.1.5 The system shall have animated loading graphics to aid navigation when the browser retrieves a page.

R3.1.6 The system shall maintain a consistent interface on all pages by having familiar navigation keys like home, menu, favorites, search, forward, backwards, and save.

6.3.2 Performance

R3.2.1 The system shall allow more than 100 users concurrently.

R3.2.2 The system shall pull up profiles and preferences automatically upon activating the application.

R3.2.3 The system shall navigate between screens within 5 seconds.

R3.2.4 The system shall not exceed 5 second from various browser render time to the delivery time to the browser.

6.3.3 Reliability/Dependability

R3.3.1 The system shall incorporate a database that must be backed up immediately so that a user's data will be restored in the event of a system failure.

R3.3.2 The system shall maintain a server operational rate of 100%.

R3.3.3 The system shall limit the request processing errors to less than 10%.

R3.3.4 The system shall implement the Integration of data from an external website within 5 second.

R3.3.5 The system shall integrate customer feedback reviews and ratings using the 1 to 5-star criteria to report quality standards for less than a 2% failure rate.

6.3.4 Security

R3.4.1 The system shall preserve the end user's privacy by taking extra measures to ensure privacy by adhering to privacy regulations.

R3.4.2 The system shall encode all data that is delivered from the user to the server.

R3.4.3 The system shall require all users to login with a username and password to authenticate their identity before entering the application.

6.3.5 Maintainability

R3.5.1 They system shall code in a way that user interface can be upgradable without affecting code parameters.

R3.5.2 The system shall be a design that is easy to perform test cases.

R3.5.3 The system codes shall contain description and meaningful comments for maintenance developers.