CHAPTER III

PRODUCT FEATURES

In this chapter, the developers presented the product features and the scope of operation provided by the application. It discusses the ability of the application in helping and encouraging human to achieve a healthy lifestyle. This chapter also presents illustrations on the flow of each module in the product decomposition.

3.1 Product Decomposition

Heart Beat, a web-based gamified application, helps the human become more informed about their heart health status. This section shows the breakdown structure of the modules that would be the basis in the completion of the application. Heart Beat is divided into four modules namely the user profiling, cardiovascular disease risk assessment, heart health status tracker, and settings. User profiling includes the sign-up and sign-in in which the users can create an account to make use of all the features of the application. In cardiovascular disease risk assessment, the application provides the users with questionnaire that will be used as the basis to determine their heart risk status. After getting the data from the users, the application displays the result in a graphical representation alongside with the risk factor calculation. The heart health status tracker module is where the application keeps track of the users’ heart health status by giving them daily tasks to be completed within a given time frame. The daily tasks include the lifestyle changes and maintenance for the users’ heart heath. The heart health status is also displayed in a graphical form. Lastly, the settings in which the users can edit their profile settings, the help information, and the details about the developers and the application itself.

Heart Beat

Cardiovascular Disease Risk Assessment

Settings

Heart Health Status Tracker

User Profiling

Daily Tasks

Profile Settings

Questionnaire

Login

Lifestyle Changes

CVD Risk Results

About

Signup

Risk Factor Calculation & Graph Analysis

Lifestyle Maintenance

Help

Heart Risk Status

Figure 2. Heart Beat Decomposition Chart.

3.2 Product Functionalities

In this section, the different functionalities of the application are discussed. It describes in details the relevance of the features and their functions in the application. It also discusses how the function can help to meet the goal of the application, as well as its importance. It illustrates the process flow of the modules namely the user profiling, cardiovascular disease risk assessment, heart health status tracker, and settings with their corresponding sub-functions which work together to accomplish the goal of the application. It further explains the operations and how users can utilize the application. It also discusses the response of the application to the stimuli. The functional requirements that the application must comply for the completion of the function are also stated in this section.

3.2.1 User Profiling Use Case

Heart Beat contains the user profiling module which includes the two following processes: signing in and signing up. Sign-in area provides an information that the user must need fill-out to open the application. If the user is already signed up, they are redirected to the home page. If the user wants to create an account, they must sign up by filling out the necessary information including the full name, e-mail, username, and password that the application required. Just in case the user forgot the password or username, it can be retrieve with the use of the email address of the user.

3.2.1.1 Description and Priority

The user profiling is considered to be a high priority in the development of the user. A user must set-up an account to access the features of the application. There are several features and functions that will be unlocked when the user successfully creates an account. It enables them to see the status of their heart, and know the lifestyle changes and maintenance the application suggests.

3.2.1.2 Stimulus/Response Sequence

Users must be on the home page of the application. They need to sign in or sign up to access the features and functions of the application. It is required for the users to set-up an account to proceed to cardiovascular disease risk assessment and use the heart health risk tracker. If the users do not have an account, they must first sign up to create an account. If the users already have an account, they must first provide the login credentials to go through the application and use the features of the application in store for them.

|  |  |  |
| --- | --- | --- |
| Function Name: | User Profiling Use Case | |
| Precondition: | * Users click sign in or sign up. | |
| Post Condition: | * Sign-in: User can gain access to the system. * Sign-up: Users can create new account | |
| Activity Flow | | |
| User | Heart Beat | Server |
|  | | |
| Alternate Flow: | * User can cancel the sign in and sign up process. | |
| Exception Flow: | * The user entered wrong data format for a certain field. | |

Table 4. Heart Beat User Profiling Activity Diagram

3.2.1.3 Functional Requirements

The user profiling module enables the user to create an account and sign in the application. The functional requirements allow users to register or sign in the application and use the other functionalities extensively. User profiling function requires that the system must:

1. provide the user with sign up form to fill up to create an account in the application if they clicked sign up;
2. save the information of the users after they create their account;
3. redirect the user to cardiovascular disease risk assessment page after signing up if they do not have an account;
4. provide the user with sign in form to fill in the credentials if they clicked sign in;
5. authenticate if the users have already an account when they sign in;
6. redirect the user to the welcome page after signing in if they are registered and verified users;
7. display an error message once the user tries to sign in without an account;
8. redirect to users to their profile page once they clicked Profile;

3.2.2 Cardiovascular Disease Risk Assessment Use Case

Heart Beat provides a cardiovascular disease risk assessment to get the data from the users. The user must have an account to proceed to this function. They are required to provide the following data and answer the following questions: age, gender, BMI, blood pressure, smoking, family history, cardiovascular disease history, total cholesterol consumption, and high-density lipids. Once the users provided all the data required, the application displays the risk results of each cardiovascular diseases namely stroke, heart attack, and hypertension. The application also displays the risk factor calculation with the highest score. The results are displayed in a graphical representation.

3.2.2.1 Description and Priority

Cardiovascular disease risk assessment is considered to be high priority because this will determine the current status of the user’s heart. This is also one of the components needed to provide lifestyle change suggestions to users.

3.2.2.2 Stimulus/Response Sequence

User’s must be registered or logged-in to complete the assessment questions. Data collected from the assessment will be added to the basis to be considered in determining the risk score.

|  |  |  |
| --- | --- | --- |
| Function Name: | Cardiovascular Disease Risk Assessment Use Case | |
| Precondition: | * User must sign up. | |
| Post Condition: | * User can view CVD Risk results. | |
| Activity Flow | | |
| User | Heart Beat | Server |
|  | | |
| Alternate Flow: | * User can cancel the assessment. | |
| Exception Flow: | * Server is not responding. | |

Table 5. Heart Beat User Profiling Activity Diagram

3.2.4 Settings Use Case

Heart Beat provides users the opportunity to edit their profile information.

This is enables user to edit any wrong information entered during the signup process. It also contains the help feature to assist or answer frequently asked questions in the application. Lastly, the application provides an about section to inform the users who are the developers of the application and some back story in developing this application.

3.2.4.1 Description and Priority

The settings module of the application is considered a medium priority because it only contains data that are not required in the computations in the application.

3.2.4.2 Stimulus/Response Sequence

Users must be on the settings page to edit information that are entered wrong during the signup process. Any information that are edited and left behind without pressing the update profile button will not be saved.

|  |  |  |
| --- | --- | --- |
| Function Name: | Settings Use Case | |
| Precondition: | * User have an account. | |
| Post Condition: | * User can view and edit personal information details. | |
| Activity Flow | | |
| User | Heart Beat | Server |
|  | | |
| Alternate Flow: | * User can cancel the editing process. | |
| Exception Flow: | * Server is not responding. | |

3.2.4.3 Functional Requirements

The settings module enables user to edit their own personal information. This module also aims to show users who are the developers of this application and some back stories in developing it. It also includes help feature which can guide users how use the application and seek some answers on their questions that are also in the frequently asked questions of the application. The Settings module of the application must.

1. Enable logged in users to edit their profile information
2. Save the information edited after pressing the update profile button
3. Redirect users to home page after saving the edited information.
4. Questions of the user must be addressed in the frequently asked questions.
5. Provide user with a guide on how to use the application.

3.2.5 Help Use Case

Help is one modules of Heart Beat. It aims to guide users on how to use the application properly and effectively.

3.2.5.1 Description and Priority

Help is considered to be high priority because this the guide through the application. This will address the possible difficulties the users might experience and guide them through the application.

3.2.5.2 Stimulus/Response Sequence

Users must be logged-in and currently in the Help page of the application to view the help content.

|  |  |  |
| --- | --- | --- |
| Function Name: | Help Use Case | |
| Precondition: | * Must be in the help page of the application | |
| Post Condition: | * Answers to FAQ | |
| Activity Flow | | |
| User | Heart Beat | Server |
|  | | |
| Alternate Flow: | * None | |
| Exception Flow: | * Servers bugged down. | |

3.2.6 About us Use Case

About us module provides users with the information about the developers. This includes the developer’s name and some back stories about the development of this application.

3.2.6.1 Description and Priority

About us feature of Heart Beat is considered to be low priority. This is considered to be not part of the main operations of the application and does not contain data needed for its main operations.

3.2.6.2 Stimulus/Response Sequence

User is not required to be logged-in to view this page of the application. this is viewable through the main or home page of the application and is available to all visitors of the application.

|  |  |  |
| --- | --- | --- |
| Function Name: | About us Use Case | |
| Precondition: | * Users must be on the About us page | |
| Post Condition: | * Information about the developers. | |
| Activity Flow | | |
| User | Heart Beat | Server |
|  | | |
| Alternate Flow: | * None | |
| Exception Flow: | * Server bugged down | |