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Software Technical

Specifications and Features

Revision History

Date	Version	Title	Author	Reviewer
01-26-2020	1.0	First Version	Komal Sahu	Krishna Kumar

Contents

1. Introduction

In today's world, owning to the heavy workload and lifestyle, people are having huge amount of stress in their lives, which causes deterioration in health condition which results in many forms of diseases.

In "HeartiHealth" we aim to develop an application that would enable users to share the Heart related dataset to predict that a person may have a heart disease or not based on data present.

As soon as your login, you would land on the dashboard, which would provide you a view of Live data of the patients who may have heart attacks in future. To bring the best user experience, application would enable the users to filter the data based on different factors like Age, genders, daily, weekly, monthly or yearly.

The data set should be used in this experiment consist of the data of the patient like Chest pain type, Resting blood pressure, Serum cholesterol, Fasting blood sugar, Resting ECG, Max heart rate, Exercise induced angina, Depression induced by exercise, Slope of peak exercise, Number of major vessels

Based on the above-mentioned data user will be provided the result which states that which patient may have a cardiac attack in the future.

Application also provides customisable reports on dashboard

- Predicted heart attack Patient versus cured patient
- Customisable Reports based on Gender and age
- Customisable Reports based on Days, Months or Year

1.1 Intended Audience

This STSF has the following intended audience:

- All the stakeholders at Hospitals, Facilities or Individual Practitioner
- Any other stakeholders who reads this document.

1.2 Specification Overview

This STSF is organized into the following sections:

- **Introduction:** This introduces the "HeartiHealth" to its readers.
- **Specifications:** This section throws some light on the Project Version & Stakeholders, Business Requirements and Functional Specifications for "HeartiHealth".

2. Key Specifications

2.1 Modules

Business &
System Workflows

3. Business & System Workflow

The System workflow depicts the core activities and the logical sequence of them. These workflows help capture the users' actions and flow of data, which is later transformed into Modules and Features, provided within the application.

Using standardized symbols and shapes, the workflow shows step by step how your work is completed from start to finish.

3.1 System Workflow

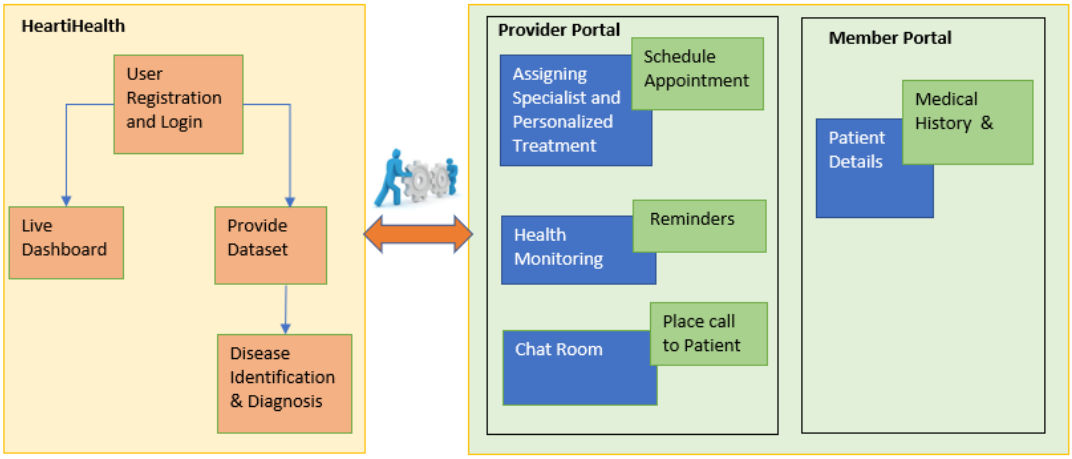

Figure 01: System Workflow

4. Specification

4.1 Functional Specifications

Sl. No.	Module	Feature	User Stories
1	User Authentication	User Login	User should be able to login to the HealthiHeart application, so that user can perform actions on application
2	User Authentication	User Logout	User should be able to logout from the HealthiHeart application, so that user can successfully come out of the application when it is not in use.
3	Dashboard	View total predicted vs cured patient	User should be able to view the Number of people predicted may have heart attack vs Number of people have been cured, so that user can view the total statistics
4	Dashboard	View live data for the current date	User should be able to view the Live data of how many patients were predicted who can have heart attack for current date, so that user can view the total statistics on a daily basis
5	Dashboard	Filter live data based on age and gender	User should be able to filter the live data based on age and gender of the patient who can have heart attack. Reports will be shown for current date and the most updated data, so that user can see every day' s updated data
6	Dashboard	View total predicted heart patients age wise for a week	User should be able to view the Number of people predicted may have heart attack age wise for a week , so that user can see week wise report
7	Dashboard	Filter total predicted patients on a weekly/monthly/yearly basis	User should be able to filter the live data of the patient who can have heart attack . Report can be filtered by weekly/monthly/yearly on dashboard, so that user can customize the report as per their need.
8	Dashboard	View total predicted heart patients gender wise for a weekly basis	User should be able to view the Number of people predicted may have heart attack gender wise for a week , so that user can see week wise report

9	Dashboard	Filter total predicted heart patients gender wise on a weekly/monthly/yearly basis	User should be able to filter the gender wise data of the patient who can have heart attack . Report can be filtered week/month/year wise , so that user can see the report for the selected time span and categorized by gender.
10	Dashboard	View total predicted heart patients age wise on a weekly basis	User should be able to view the Number of people predicted may have heart attack age wise on a weekly basis
11	Dashboard	Filter total predicted heart patients age wise on a weekly/monthly/yearly basis	User should be able to filter the age wise data of the patient who can have heart attack . Report can be filtered week/month/year wise , so that user can see the report for the selected time span and categorized by age.
12	Health Predictors	Provide the data in health predictor form and calculate the result on heart condition	User should be able to provide the details on the health predictor form and click on calculate to get the result , so that user can view his heart condition and get cured if result says "you may have a chance of getting heart attack in future.
13	Health Predictors	View health predictors form details and the result which is already added in the system	User should be able to view health predictor form details and the result, which is already added in the system, so that user will have the history of data added in the system

4.2 Non-Functional Requirement

The Key Security and Compliance features of the HeartiHealth system is mentioned below. Periodically additional security measures and features will be incorporated into the system raising the bar for security for all applications in the system. Subsequently document would be updated of the same.

1. Compatibility

1.1 Web Application

1.1.1 Browser

The web application works seamlessly in the following browsers

1. Google Chrome: version 70.0 and above
2. Safari: version 70.0 and above

Screen Size The web application is compatible for the below mentioned screen sizes.

1. 1280 x 1024
2. 1920 x 1080

1.2 Mobile Application

1.2.1 Device

HeartiHealth mobile application is compatible with following devices

1. Mobile
2. Tablet

1.2.2 Platform

HeartiHealth v1.0 application is available for both Android and iOS platforms.

1.2.3 OS Version

The application is compatible with latest OS version of Android and iOS

1. Android: Marshmallow (6.0) to Oreo (8.1)
2. iOS: version 10 to 12.2.

2 Performance

2.1 Network Support

The features of the application are also accessible when there is no internet connection. To synch data to server and download the content a minimum bandwidth of 200 kbps is required. The application works best with 3G, 4G and Wi-Fi connectivity.

2.1.1 Capacity

The HeartiHealth v1.0 is capable of seamlessly handling 300 concurrent users

2.1.2 Response Time

1. Dashboard: The maximum time taken to view dashboard with 10 concurrent users will not exceed 2 sec.
2. Heart Predictor: The maximum time taken to view dashboard with 10 concurrent users will not exceed 3 sec.

3 Security

The Key Security and Compliance features of the HeartiHealth v1.0 system is mentioned below. Periodically additional security measures and features will be incorporated into the system raising the bar for security for all applications in the system and would be updated accordingly.

1. Unique User Identification Any user in the system is uniquely identified. Unique user Id is given to track the users when they switch applications within the eco system and enabling single sign on feature that would restrict user from having multiple active session at a time
2. Logout User has to login to the application to perform any kind of operations. Once user finishes his/her tasks, they can log their credentials out of the application. This would ensure if any other user tries to access the same URL, system will not be able to access using other users' credentials.
3. Restricted and Authenticated Database Access to databases used for the applications are via usernames and passwords. They must be mapped and authenticated when a call from an application is made ensuring database security.
4. Blockchain based user authentication where verification and encryption keys are stored on the blockchain which protects against critical cyber-attacks.

4. Usability

1. Simple Navigation: Side navbar will let you move from one screen to another. Not too many buttons to confuse user for options available.
2. Clear & Concise Content: The application is designed to show only the most relevant information to the user at any given instance. This enhances the user experience by reducing redundant actions by user.
3. Minimize the Number of Steps: No unnecessary buttons, workflows, pages and fields are included during the design of the screen.

5. Conclusion

HeartiHealth is one of the applications in the healthcare developed for the 'Heart Attack Predication'. This document provides all the necessary information regarding the technical specifications and features provided in the application.

This document would be updated upon every major and minor release to customers, Given the growing needs of the system.