We Care

The Disease Tracker System
Software Requirements Specification

Version 1.1

Revision History

Date	Version	Description	Author
06/04/2016	1.0	Initial Edition	K.N.A. Jayatissa
02/05/2016	1.1	Updated Edition	K.N.A. Jayatissa

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Software Requirements Specification

1. Introduction

This Software Requirement Specification document captures the complete software requirements for the "Disease Tracker System". This document is open to both developers and stakeholders

1.1 Purpose

The SRS fully describes the external behavior of the "Disease Tracker System". It also describes nonfunctional requirements, design constraints, and other factors necessary to provide a complete and comprehensive description of the requirements for the "Disease Tracker System".

1.2 Scope

The "Disease Tracker System" provides an interface for web to ease the process of diagnosis. The system provides the best matching disease and the consultant doctors and their details for the symptoms the user provides. Moreover the users can suggests new information to be added in the system which will be added to the system database after subjecting to a manual process of reliability check.

1.3 Definitions, Acronyms, and Abbreviations

Term	Description
User	Someone who interacts with the web application
Patient	Someone who uses the system to diagnose a disease, to find doctors.
Admin/ Administrator	System administrator who has given specific permission to manage and control the system [1]

1.4 References

[1] IEEE Software Engineering Standard Committee, "IEEE Std 830-1998, IEEE Recommended Practice for Software Requirement Specification," October 20, 1998.

1.5 Overview

The remainder of this document includes two chapters and appendixes. The second one provides an overview of the system functionality and system interaction with other systems. Moreover it introduces different types of stakeholders and their interaction with the system and it mentions the system constraints and assumptions about the product.

The third chapter provides the requirements specification in detailed terms and a description of the different system interfaces. Different specification techniques are used in order to specify the requirements more precisely for different audiences.

The fourth chapter deals with the table of contents, index and appendixes. Appendixes in the end of the document include all the results of the requirement prioritization and a Release plan based on them.

2. Overall Description

This section of the SRS describes the general factors that affect the product and its requirements. This provides a background for those requirements, which are defined in detail in Section 3.

2.1 Product Perspective

The system will consist of a web application which will ease the process of diagnosis. This will provide the users with option of finding the possible diseases for the provided symptoms and find the consultant doctors who will be treating for those diseases. Moreover the system will provide information about the disease severity and some remedies to lower the severity of the disease (if any).

Furthermore, those users who have information about new diseases, via the system they can suggest those to be included in the system database. Admin will use that information after a manual process of accuracy check. Those users will be sent a response email stating the success of their attempt.

2.2 Product Functions

- Users should be able to register in the system
- Users should be able to login to the system
- System should give information about the best matching disease for the user provided symptoms
- System should provide the details of the consultant doctors treating for a particular disease.
- System should be able to provide users with the details about diseases
- System should be able to accept user suggesting information.
- New data should able to be updated in the system by the admin
- Users those who provided information should be sent a response email.

2.3 User Characteristics

There are two types of users that interact with the system: patients and administrators. Each of them has different requirements.
Admin needs to login to the system, update the available information, add new information, check suggested information and respond to the information providers.
Patients need to diagnose the disease and get to know the information about doctors to be consulted.

2.4 Constraints

- Only the registered users have the authority to access the system and prior to using the system, users should logged into the system.
- Only beneficial for Sri Lankan users since the system provides information regarding only Sri Lankan doctors.

2.5 Assumptions and Dependencies

- Administrator is created in the system already.
- Roles and tasks are predefined.

3. Specific Requirements

3.1 Functionality

This section defines all the functional requirements in detail

USER TYPE: PATIENT

3.1.1 Identify the disease by the provided symptoms

3.1.1.1 Introduction

The patient shall provide the symptoms to the system and then will suggest the best matching disease for those user provided symptoms.

3.1.1.2 Inputs

- Symptoms he/she has got

3.1.1.3 Processing

The provided symptoms will be compared with the stored information in the system and decide the best matching diseases.

3.1.1.4 Outputs

Will display the best matching diseases for the provided symptoms.

3.1.2 View consultant doctor details for a disease

3.1.2.1 Introduction

User can either search by the disease to find doctors to be consulted for that disease or else they can view the related doctors' details for the disease they are diagnosed as when provided the symptoms.

3.1.2.2 Inputs

- Name of the disease

3.1.2.3 Processing

Details related to the appropriate doctors will be fetched from the database for the given disease

3.1.2.4 Outputs

Will display the name, specialty, hospital and its address related to the appropriate doctors

3.1.3 Suggest new data to the system

3.1.3.1 Introduction

Users can provide new data about diseases like their symptoms and doctors to be consulted if they are not already in the system. System new store them as user provided details and after a thorough accuracy check done manually by the admin those information will be added to the system.

3.1.3.2 Inputs

- Name of the disease which the information is related to
- Type of information (symptoms of a disease, doctors for a disease, information regarding doctors, information regarding a hospital)
- Particular information

3.1.3.3 Processing

Provided information will be stored in the database so that the system admin can look up for them.

3.1.3.4 Output

Confirmation of successfully submitting the information or if the process was halted due to the some reason an error message will be displayed to the user.

USER TYPE: ADMIN

3.1.4 Record the accuracy of the information provided by the user.

3.1.4.1 Introduction

Once the user provided information are checked for accuracy, the result will be recorded in the system. Then the corresponding users will be sent a response e-mail by the system stating how accurate their information and how successful they are with providing those information.

3.1.4.2 Inputs

Success of the user provided information with the corresponding user. (Valid, invalid)

3.1.4.3 Processing

After manually checked for accuracy of the information, the state of accuracy will be input to the system with the corresponding user email. Then the system will sent an auto generated email for the user based on the state of accuracy of the provided information b that particular user.

3.1.4.4 Output

An auto generated email will be sent to the corresponding user.

3.1.5 Add new data to the system

3.1.5.1 Introduction

System Admin has the authority to add new data to the system. The data either provided by the users or confirmed to be accurate or else system admin has found through researches or any other reliable sources.

3.1.5.2 Input

Information to be updated

3.1.5.3 Processing

Updated information will be stored persistently in appropriate tables of the database

3.1.5.4 Output

Success of the update process.

3.2 Usability

3.2.1 Understandable and matching UI elements

The user interface elements that will be used for the system implementation should be compatible with look and feel requirements in order to ensure that the user shall be able to easily understand what they mean and the user tends to use them without refusing due to other reasons.

3.2.2 User Learning

A normal user should be able to use the system at a productive rate after a maximum time of 1 minutes. A power user should be capable of using the system at a fully productive rate after 5minutes or less time of learning.

3.3 Reliability

3.3.1 Accuracy of the information providing

Since the system deals with a process of diagnosing diseases, the accuracy of the information given to the user is critical.

3.3.2 Availability

The system should be 100% available

3.4 Performance and Security

3.4.1 Minimum Response Time

Response time for any action must be less than 2 seconds.

3.4.2 Minimum Network Bandwidth Usage

The network bandwidth usage for the application should be minimum.

3.4.3 Communication Security between System and Server

The communication messages in the log-in session should be encrypted so others cannot get username, password from those messages.

3.4.4 User Account Log-in Security

If an admin or patient tries to log-in with a non-existing account, it should be banned.

3.5 Supportability

3.5.1 Application Extendibility

The application should be easy to extend. The code should be written in a way it favors implementation of new functions.

3.5.2 Application Maintainability

The coding style should favors maintaining the system without any hassle.

3.5.3 Application Testability

Test environments should be built for the application to allow testing of the applications different functions.

3.6 Design Constraints

- GUI will only be in English
- Information regarding any disease cannot be provided. Limited to the diseases in the system database.
- Details provided by the patients during their sign up should be stored in database.
- The accuracy of the user provided details is checked manually.

3.7 Interfaces

3.7.1 User Interfaces

A user should see the log-in page when he/she opens the application. If the user has not registered, he/she should be able to do that on the log-in page. Once logged in, the user will be directed to the home page.

If the user has logged in as a patient he/she can then select either to diagnose the disease by giving symptoms, to find doctors or to suggest information to the system.

In the "Disease Diagnose" page, patient can provide symptoms and get the disease diagnose to a significant level of accuracy. From their itself they can find the doctors whom should be consulted for that particular disease.

When the patients just need to find the doctors to consult for a particular disease, they should go to the "Find Doctors" page and search by the name of the disease.

If the user has logged into the system to provide information, they should go to the "Provide Information" page and there they need to provide the details in the given format.

An administrator should also be able to log in to the web-portal where he/she can administer the system by for instance adding new information, checking user provided information, sending response emails to users who provided information.

3.7.2 Hardware Interfaces

Since the web application does not have any designated hardware, it does not have any direct hardware interfaces.

3.7.3 Software Interfaces

The communication between the database and the web application consists of operation concerning both reading and modifying the data. The communication between the database and the web application is managed by the underlying operating system on the web server.

3.7.4 Communications Interfaces

The system sends response emails to information provided users stating the success of their attempt in providing information.

3.8 Database Requirements

User details, information related to diseases are frequently accessing information in the system. The database should be designed in a way that the accessing data from the database does not hinder the performance of the application. The defined integrity constraints should be ensured. Furthermore the database should be adaptable, scalable and manageable.

3.9 Applicable Standards

None