We Care

SRS Document

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Disclaimer

This Software Requirements Specification document is a guideline. The document details all the high level requirements. The document should be used as a guideline by the students to design the Solution Architecture for the project. The document also describes the broad scope of the project and high level logical object model. But while developing the solution if the developer has a valid point to add more details being within the scope specified then it can be accommodated after consultation.

We Care - For Health of Women

Introduction

The purpose of this document is to define scope and requirements of health care community portal for women in particular - We Care that will : a) aid development of knowledge inputs and e-services of relevance to women in India, b) encourage active involvement in Events and happenings in their areas, c) the broad aim is to enable women to be aware of the health issues their generation faces and how to cope with it by engaging Medical Practitioners in the respective fields.

This document should be used by the development team to architect the solution the project.

Management Summary

The lower and middle class women are dependent on male members of the family to take them to doctors. Majority of them do not understand why medicines are being prescribe, what should they be doing to keep in good health, what are the signs of alarm, and much more They lack in awareness and education and often depend on half baked knowledge of their friends or relations for advice.

The objective is to take the latest information and knowledge inputs to women so that they can begin to understand the importance of being aware of one's health condition and remedial actions if required where and how to pursue.

1. Register women as members into We Care portal. They can access to the information on various Disease Categories of the We Care initiative.

2. Engage medical practitioners to pool in information on the diseases commonly suffered by women, resolve queries in the system.

3. The medical practitioners and other health care centers keep updating Tips and Articles in the system.

4. The assistance provided are stored and are accessible using search on Disease Category, Location.

The proposed solution will be designed & developed to run on IBM WebSphere Application Server and IBM DB2 Universal Database in a 2-tier architecture.
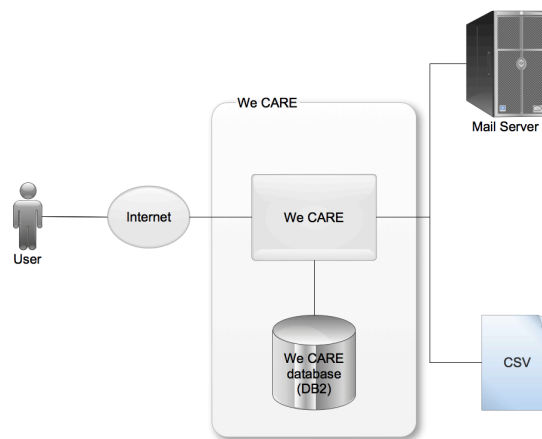
Key Assumptions

1. The system is ideally meant for women having mobiles for receiving SMS of the information they have subscribed to. For project scope, email id is being used for communicating.

2. The Project owner is familiar with medical aids and initiatives taken by various organizations for health care. They are eye openers from the technology point of view.

High Level Architecture

We Care high level architecture is illustrated through the context diagram shown below. It will have following categories of users:

1.   Members

2.   Medical Practitioners (Doctor/Hospitals)

3.   Volunteers (Providers of We Care)

4.   Administrator

We Care Context Diagram

|	
We Care	Maintain Members profile by uploading their basic contact, geographical details along with any medical history they may have. Volunteers cater to information needs for Members in their location. Maintain an Expert Panel as Medical Practitioners for handling queries received from Members. Create a subscription based model for information services offered by We Care.
We Care Database	Designed to store Members profile, locations, Mapping of Disease categories, Experts are mapped to Categories. Services Members subscription to queries on Disease categories.
CSV	Masters like locations, Members, Categories, Medical Practitioners are uploaded via CSV
Mail Server	All notifications are routed through the Mail Server

Functional Requirements

The high level functional requirements for the We Care are outlined in the Use Case diagram described in this section.

We Care will provide a secure user-id/password based secured login mechanism to access its services. The details of this are not outlined here. The development team is expected to create these keeping in mind the general practices followed by the web applications. Login will be a prerequisite to use We Care. Internal users will be provided user id/password pair separately.

Once user logs in, s/he can view the dashboard with sections on 1) Member queries & Solution, 2)Latest Tips, 3) Articles added by Medical Practitioners are displayed. A section on Events happening around is displayed for the members location. This menu options shall primarily come from the use case of the role player.

Use Case Diagrams

The following figure illustrates the Use Case diagram for the system. The MIS use cases are not detailed here.
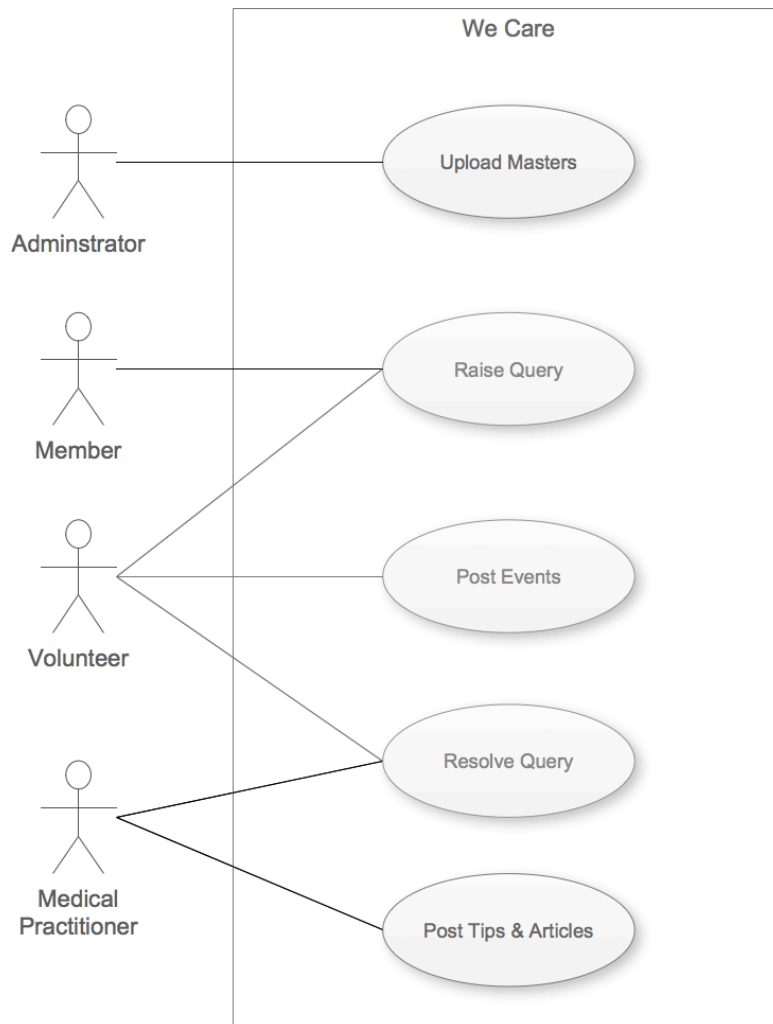
Use Case Diagram

Use Cases

Upload Masters

Use Case Element	Description
Number	UC.01

Use Case Element	Description
Application	Masters in We Care are uploaded using CSV Format
	State Master contains State id, State Name
	Location Master contains Location id, Location Name, State id
	Category Master contains Category id, Category Name (Though categories are hierarchical, for simplicity, its a flat structure for this project)
	Medical Practitioners Master contains Medical Practitioners Id, Medical Practitioners Name, e-mail id
	Medical Practitioners Category contains Medical Practitioners id, Category id (Medical Practitioners can have multiple categories expertise, thus a one to one mapping is required for each category id)
Use Case Name	Maintain Masters
Primary Actor	Administrator
Secondary Actor	None
Pre-condition	None
Trigger	User clicks on the **Upload Masters** menu item on the landing page
Basic Flow	System prompts for the file name to be uploaded. Standard file upload dialog is presented to select a file from the local system.
	• The selected file data is uploaded in the related tables; if an existing record is encountered, the old details are replaced with the new details.
Alternate Flow	• In event of incorrect CSV format, system gives an error and NO data is uploaded.
	• Operation is cancelled
Output	System displays the number of records uploaded. It also highlights the number of records updated (i.e. already existing ones being replaced)

Raise Query

Use Case Element	Description
Number	UC.02
Application	Members visit the website or contact the volunteers to seek information on various information categories. We Care's endeavor is to support Members with contextual information so that they reap immediate benefits and are not lost in figuring out what to do.
	To make information being given relevant and crisp, the system uses the knowledge acquired over a period of time and has significant value in terms of being referenced in providing solutions to Members.
Use Case Name	Raise Query
Primary Actor	Members
Secondary Actor	Volunteer
Pre-condition	Authorized user is logged in to the system

Use Case Element	Description
Trigger	User clicks on the **Raise Query** link on the landing page
Basic Flow	• The system displays member's information like name, location, mobile number etc. if the member has logged in to the system. • In case of the volunteer login, user has to enter the member's mobile number for the system to pull the data automatically. • If data does not exist, Volunteer enters the Mobile #, Name of the Member, State (Picker), Location(Picker - filtered list for the State) • If existing in database then any open or unresolved query is displayed on the top clearly highlighting the status. • In addition last few resolved queries are also displayed. • The Query asked by the Member is entered in the query box. • User selects the Disease Category in which query falls. • View count goes up by 1 for the information being clicked and viewed.
	• System automatically lists various relevant content on the basis of query categorization to help rapid resolution of query. • Queries Resolved in the queried category are displayed as line items. • The order of display is Query with maximum reference is displayed on the top and so on. • Tips on Category: Recently added tips and articles on the category and Member's location are displayed. • Favorite in Category, All Queries that have been bookmarked are displayed for reference. It displays the Information on the basis of (a) recently added Tips, (b) most referenced for Members state. • The reference count goes up by 1 for the information being included as referenced for the solution to member. View count goes up by 1 for the information being clicked and viewed. • The overall solution from the references used is pasted in the solution text box. • Submit saves the query and solution appears along with the member's query on the web site. • Query moves into Resolved in case Volunteer gives the solution or it moves into Pending for Resolution state for the Medical Practitioner to resolve it.
Alternate Flow	None
Output	Notification to Medical Practitioner for resolving query.

Resolve Pending Query

Use Case Element	Description
Number	UC.03
Application	Some Queries require Expert advise to resolve
Use Case Name	Resolve Pending Query
Primary Actor	Medical Practitioners
Secondary Actor	Volunteer
Pre-condition	None
Trigger	The user clicks on the **Resolve Query** link on the landing page
Basic Flow	• Any open or unresolved query is displayed on the top clearly highlighting the status for the logged in Medical Practitioners or volunteer who created the query in the system. • The Medical Practitioners user reads the query posted by member and enters the solution to be communicated to customer. • Medical Practitioners Clicks on Communicate. • An email for the same is sent form the system. • The Query moves to Communicated State • Volunteer can access the query and the solution provided by Medical Practitioners • The reference count goes up by 1 for the information being included as referenced for the solution to member. • View count goes up by 1 for the information being clicked and viewed • The query is closed.
Alternate Flow	None
Output	Email to member for solution provided by Medical Practitioners

Post Events

| Use Case Element	Description
Number	UC.04
Application	The volunteers collate information on the camps or discourses on healthcare categories related to members. They post the same on We care portal for the benefit of community.
Use Case Name	Post Events
Primary Actor	Volunteer
Secondary Actor	None
Pre-condition	User is an authorized role in the system
Trigger	The user clicks on the **Post Events** link on the landing page.

Use Case Element	Description
Basic Flow	The system displays list of Disease Categories to select from.(Multi-select is possible) A form is displayed to capture the event details such as: Date, Event Name, Sponsored by, Venue, Location, Start Time, End Time The entries are saved as events for the Member to visit in their respective locations.
Alternate Flow	Pressing Cancel abandons operation, no database gets affected
Output	None

Post Articles & Tips

Use Case Element	Description
Number	UC.05
Application	The Medical Practitioners keep bouncing useful tips that Volunteers pass on to the Members who either come asking or subscribe to Information categories of Health Care.
Use Case Name	Post Articles & Tips
Primary Actor	Medical Practitioners
Secondary Actor	None
Pre-condition	Medical Practitioner is an authorized user of the system
Trigger	The user clicks on the **Post Articles & Tips** link on the landing page.

Basic Flow	• System displays a list view of the Tips already created for the domain Medical Practitioners belongs to. The Tips also display the Count for the tip being referenced while resolving a query.
	
	• The user can select a tip to modify. The Tip details open up in a form for the user view edit.
	
	• The user creates a new Tip by clicking on Add Tip, a blank form appears with the following fields.
	
	    • Tip
	
	    • Effective Month for Communication: Month picker
	
	• The system saves Tip along with its Information Category selected by user and Communication Month
	
	For Article the Medical practitioner copy pastes the content in the text box provided and saves the article with its information category selected by the user along with the communication month.

Alternate Flow	Pressing Cancel abandons operation, no database gets affected
Output	None

Logical Object Model

A high level logical object model of the system is shown below. During technical design it will be transformed into a physical model covering all system entities. Such a diagram will include their relationship and its cardinality.
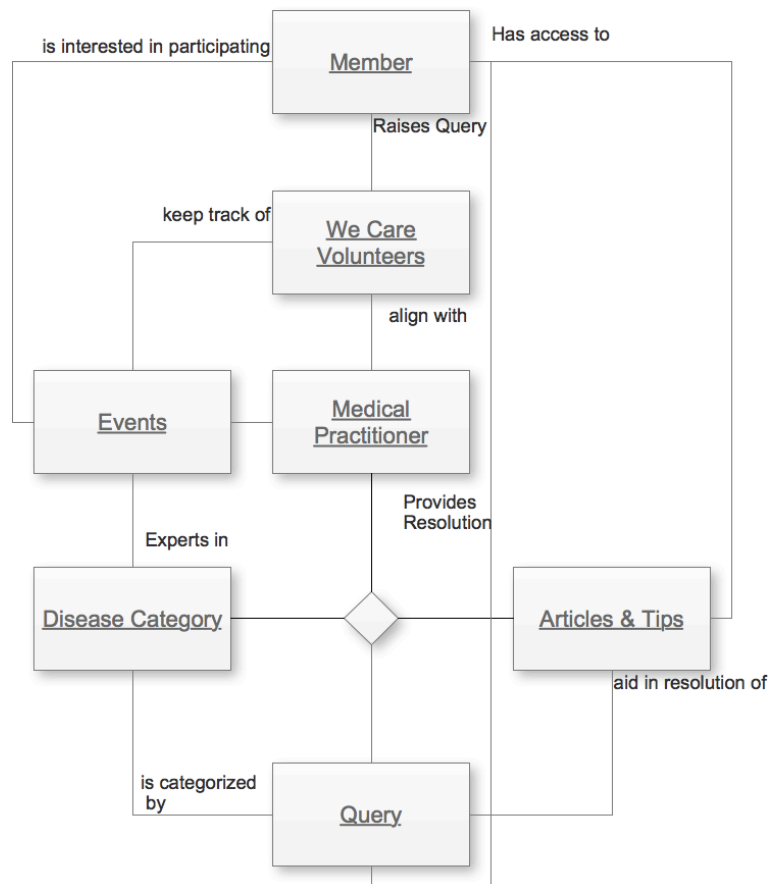
Logical Object Model

1. Community Member is the customer for the We Care System.

2. Members from various locations contact the We Care Volunteers enquiring for assistance.

3. The We Care system maintains information Categories and associates all the content of query to these pre-defined category (Reproductive, Cancers, Infectious, Parasitic, Neuro etc.)

4. We Care posts information about health care camps or other such initiatives on the site for members to access.

5. The queries are recorded by volunteers or the members themselves and resolved based on the information displayed by the system for a similar query(s) in the past.

6. There are Medical Practitioners who resolve queries for a category.

7. The Medical Practitioners also posts articles containing tip and advisories that are useful for solving the query.

Database Design Guidelines

This involves the transformation of the use cases, state diagrams, and logical object model into detailed and optimized physical database table designs.

Typically persistent classes will map to table(s) with their attributes as columns of the table. In some cases a high level object may map in to a master-child table. Invoice is one such example where it maps in to "invoice_header" and "invoice_line_item" table.

Associations between two persistent objects are realized as foreign keys to the associated objects. A foreign key is a column in one table that contains the primary key value of the associated object.

Similarly, a standard technique in relational modeling is to use an intersection entity to represent many-to-many associations. Following is a broad checklist for physical database database design:

1. Database must be properly normalized except those instances where de-normalization help improves performance. This option must be used with special care.

2. All persistent classes that use the database for persistency must map to database structures.

3. Many-to-many relationships must have an intersecting table.

4. Primary keys should be defined for each table, unless there is a performance reason not to define a primary key.

5. Indexes should be defined to optimize access.

6. Data and referential integrity constraints should be defined.

Testing Approach

Quality of the software can be achieved with basic hygiene and consistency followed during design and development of User Interface(UI), Navigation, Validations as per the business process requirement.

To ensure the project delivers acceptable quality to the customer, its important to create a checklist of the conventions to be followed across. Common checks as below are for your reference during design and development:

Common Checks	Validation Type
Page Title is valid for the feature being provided on the page	UI
Order of the Data Entry Fields is logical as per the functionality being provided by the feature	UI
Order of the Display only Fields makes viewing and understanding easy for the user	UI
Spellings and Correctness of Label for the Data Entry and Display fields	UI
The labels are not wrapping onto another row thereby adding a blank row on the page	UI
The fields with drop down are displayed in single row instead of drop down coming on the next row	UI
Data Entry field basic validations are working i.e Text field /Numbers / Dates allow data for their type only	Functional
The dates are following a standard format dd/mmm/yyyy on all forms	UI
The color scheme of all forms i.e headers labels , alerts, entry fields are uniform throughout the application	UI
The action buttons for a New Data Entry Form are uniform for all forms that is allowing data entry	UI

Common Checks	Validation Type
The action buttons are performing the desired action e.g. "submit" is creating a new record if there are no errors and recording all the input fields, whereas 'cancel' is not creating a new record in the database	Functional
The links provided on the forms are opening correctly.	Functional
The data feed mechanism for Read and Write files is generating a log with count of entries.	Navigation

Suggested Technical Reading

The project is aimed at making the student understand concepts of Design and Development using IBM Rational tools, Web Sphere Application Server and DB2 Database. The following reading reference is easy to understand and should be read to get a clear understanding of capabilities of the tools and how you would leverage them to execute a project.

Technical Reference	URL to access
RAD - Tackling challenges of software development with Rational Application Developer for WebSphere Software	http://www.ibm.com/developerworks/rational/library/08/0926_ackerman-mahate/index.html
IBM Education Assistant - Rational Application Developer 7.5	http://publib.boulder.ibm.com/infocenter/ieduasst/rtnv1r0/index.jsp?topic=/com.ibm.iea.rad_v7/rad/rad75.html
RSA-Overview of Rational Software Architect for WebSphere Software Version 7.5	http://www.ibm.com/developerworks/rational/library/08/0926_arnold/index.html
Using the new features of UML Modeler in IBM Rational Software Architect Version 7.5	http://www.ibm.com/developerworks/rational/library/08/0926_diu/index.html
Rational Technical Library	http://www.ibm.com/developerworks/rational/library/