

CS 319

Team 7

Team Se7en

Options Community Services

Software Requirement Specification

Document

Table of
Contents

1. Introduction	4
<i>1.1 Purpose</i>	<i>4</i>
<i>1.2 Scope</i>	<i>4</i>
<i>1.2.1 Name of Software</i>	<i>4</i>
<i>1.2.2 Software Capabilities</i>	<i>4</i>
<i>1.2.3 Software objectives, benefits, and goals</i>	<i>4</i>
<i>1.3 Definitions, Acronyms, and Abbreviations</i>	<i>5</i>
<i>1.4 References</i>	<i>5</i>
<i>1.4.1 External Documents Provided</i>	<i>5</i>
<i>1.4.2 External Source</i>	<i>5</i>
<i>1.5 Overview</i>	<i>5</i>
 2. The Overall Description	 6
<i>2.1 Product Perspective</i>	<i>6</i>
<i>2.1.1 System Interface</i>	<i>7</i>
<i>2.1.2 User Interface</i>	<i>7</i>
<i>2.1.3 Hardware Interface</i>	<i>7</i>
<i>2.1.4 Software Interface</i>	<i>7</i>
<i>2.2 Product Functions</i>	<i>7</i>
<i>2.2.1 Staff User Functionality Requirements</i>	<i>7</i>
<i>2.2.2 Staff User Library Functionality Requirements</i>	<i>8</i>
<i>2.2.3 Admin User Functionality Requirements</i>	<i>8</i>
<i>2.3 User Characteristics</i>	<i>9</i>
<i>2.3.1 Staff Users</i>	<i>9</i>
<i>2.3.2 Admin Users</i>	<i>9</i>
<i>2.4 Constraints</i>	<i>9</i>
<i>2.5 Assumptions and Dependencies</i>	<i>9</i>
 3. Specific Requirements	 9
<i>3.1 External interfaces</i>	<i>9</i>

3.1.1 <i>User Interface</i>	10
3.1.2 <i>Admin Interface</i>	11
3.2 <i>Functions</i>	11
3.2.1 <i>Main Program</i>	11
3.2.2 <i>Library Program</i>	12
3.2.3 <i>Admin</i>	12
3.3 <i>Performance Requirements</i>	13
3.4 <i>Logical Database Requirements</i>	13
3.5 <i>Software System Attributes</i>	14
3.5.1 <i>Reliability</i>	14
3.5.2 <i>Availability</i>	14
3.5.3 <i>Security</i>	14
3.5.4 <i>Maintainability</i>	14
3.5.5 <i>Portability</i>	14
4. Change Management Process	14
5. Document Approvals	15
6. Supporting Information	15
6.1 <i>Appendix A: Log of Requirement Changes</i>	15

1. Introduction

1.1 Purpose

This document is written for these parties with the following intent:

- Options Family B.C Organization
 - Provide a comprehensive document stating all of the features that will be included in the system's implementation.
- The software development team from the University of British Columbia's CPSC 319
 - Provide the development team with a guideline of the features that will be delivered in the system's implementation.
- Any developers at Family B.C organization
 - Provide brief overview of the system functionality and requirements, so that developers have general idea of the project.

1.2 Scope

1.2.1 Name of the Software Product:

Options Family Resource Program Data Management System

1.2.2 The software product will do the following:

- Provide a centralized system for tracking individuals parents who attend programs offered by Options throughout greater Vancouver.
- Track assets such as toys, books, video, and pamphlets that have been given or lent to the customers (parents/guardians) and give staff quick access to information about the assets.
- The system will be hosted on the Microsoft Windows Server 2008 R2 operating system and accessible by client machines.

1.2.3 The software product will not do the following:

- The coordinator at Options mentioned there is the possibility of tablets, however, this system will not be guaranteed to work on Samsung tablets or any other tablets due to compatibility issues and the policies at Options which state that devices are not allowed to access their network through WIFI.
- The software will not contain features not specified in the SRS

1.2.4 The software's benefits, objectives, and goals:

This project is the Options Family Resource Program Data Management System. The main objective is to facilitate the input of client information into the software system, and be able to track and update the client information. It will also track assets that Family B.C Organization has lent to its clients. It will provide a centralized information system, so that the amount of work required by the staff at Options can be minimized, and manual work by pen and paper can be reduced.

1.3 Definitions, Acronyms, and Abbreviations.

FRP - Family Resource Program

Staff Users - An actual staff of FRP

Admin Users - The administrator/supervisor of all staffs in all locations of FRP

Entry - Table entry in database

Program - Any services offered by Options Community Services

Event - Special activities that happen on a specific day (ie Story Time)

Query - Functions that get information/data from the database

UI - User Interface, a medium for users to interact with the computer

SRS - Software Requirement Specification, A formal documentation of the requirements of the product specified by the client

SQL - Structured Query Language, a language for accessing the database

CSV - Comma-separated values, a type of file used to store tabular data in text form

OFRPDMS - Options Family Resource Program Data Management System

VPN - Virtual Private Network, a private network that can access Options' servers

1.4 References

1.4.1 All documents provided by the coordinator at Options are:

1. Annual Report
2. Outcome Report
3. Sign-in sheet
4. Quarter Report
5. Participation Card

1.4.2 All reports were received and published from Options Family B.C Organization from 2011-2012.

1.4.3 Most of documents and information are located in the website:

<http://www.options.bc.ca/>

Additionally, other documents and references can be obtained from the coordinator or the IT professionals at Options

1.5 Overview

Section 1 of the SRS provides a brief overview of the rest of the document, as well as a basic

understanding of the objective, goal, and purpose of the project.

Section 2 of the SRS provides a general description of the project, including a summary of the problems currently facing the customer, and other factors that may affect customer requirements. This section will be of interest to the customer, users of the system, and system designers.

Section 3 of the SRS provides a detailed description of the project and contains the software requirements. These requirements will ensure that all design structure and implementations meet the expected criteria of the project, as well as address the customer's problems and needs. This section is mainly for the system designers and developers who will be designing and implementing the system.

Section 4 of the SRS, it provides supplemental material which may help to understand how project scope and requirements are formed/changed.

Section 5 of the SRS is the document approval signatures, where all the stakeholders sign to verify that they read and agreed on the contents within the SRS.

2. The Overall Description

The current problem faced at Options Family Resource Program is that their data is not managed properly. They currently use pen and paper, and Microsoft Excel. As a result, there is further manual labour required to gather and compile relevant data required to generate reports for their funders. Some examples of data includes tracking the number of parents, children, their visits, referrals and library items such as toys, books, and video items (for a complete list see section 2.2). This software will remove that intermediate step of manually compiling and inputting information into Microsoft Excel, as well as centralize the data into one convenient location such that it can be easily accessible.

The *OFRPDMS* is a system designed for two type of users. The primary user is the staff at Options. The system will let staff log in to the system for the purposes of accessing, adding, and updating their client information on the system. The detailed information for their clients are outlined in section three. The system will also let staff update information about lending out assets such as toys and books from the library. All data will be stored in a database. An interface will be provided to interact with the database and provide system features to authorized users.

The second type of user is the Administrator or Admin. The Admin has all the functionality available to staff and in addition will also have the ability to delete and edit family fields. They will also have the ability to generate specific queries for the purposes of tracking individual client progress in their programs and to generate monthly and annual reports about the programs. Lastly, the Admin can create and send a personalized e-mail to a person in the system.

2.1 Product Perspective

The *OFRPDMS* will be an application that will be used on the machines at Options Community Services. This system will run on Options' existing servers as that will be where the data is stored. The functionality is similar to other data management systems, however the data and the application is tailored to the Options' specific needs. This software will only be accessible by staff with a registered account from Options Community Service.

2.1.1 System Interface

The Options Community Services Data Management System will be integrated into Options existing servers.

2.1.2 User Interface

This system will have a graphical user interface and is expected to be intuitive. Furthermore, a User Manual written by the development team will be there to help users understand the system.

2.1.3 Hardware Interface

There are no hardware interface requirements

2.1.4 Software Interface

This software will not require additional software packages since the software will be designed to work on Microsoft server 2008 R2 and Microsoft SQL server which are already installed.

2.2 Product Functions

2.2.1 Staff Functionalities in Main Program:

- Log into the System
 - Staff Users are able to log into the system, where they are presented with menu that they can navigate to the features they are able to access
- Register Family
 - Staff Users are able to register the new participants to the system. They will have to input the necessary fields to complete a registration
- Update family
 - Staff can update family, adult, and children information.
- Update daily number of visits
 - Staff Users are able to update the number of visits for family, adults, and children
- Add/Remove event
 - Staff Users are allowed to add/remove events(see section 1.3 for definition) to the database.
- Add Resources
 - Staff Users are allowed to add new resources
- Record how many resources(pamphlets) were handed out
 - Staff Users are able to record the number and type of pamphlets(or other resources) are handed out per day.

- Record referrals
 - Staff Users are able to record referrals made
- Query guardian/child name
 - Staff Users are able to check if a participant is registered to the system or not
- Access limitation
 - Staff Users are only able to modify databases associated with the program/location he/she works for.

2.2.2 Staff Functionalities in Library Component:

- Register Borrower
 - Staff Users are able register parents to the system for borrowing toys, books, and videos.
- Add new Library Items
 - Staff Users are able to add new toys, books and videos to the database
- Remove a library item
- Update library items
 - Staff Users are able to update the status of item
- Check out Library Items
 - Staff Users are able to keep track of borrowers
- Check in Library Items
 - Staff Users are able to update the database when ever the borrower has returned the item

2.2.3 Admin Functionalities

Admin user would have access to all functions accessible by staff user plus the following:

- Generate/Export Information from Database
 - Admin users are able to query the database and export that information into CSV format to open in Excel
 - Queries consist of :
 - Tracking the number of daily visits
 - Tracking the number of new adults per program
 - Tracking the number of new children per program
 - Tracking the number of adults per program
 - Tracking the number of children per program
 - Tracking the number of parents per program per year, month, or week
 - Tracking the number of pamphlets handed out
 - Tracking the number of participants for an event
 - Tracking the number of books borrowed by parents
 - Tracking the number of videos borrowed by parents
 - Tracking the number of toys borrowed by parents
 - Tracking the number of workshops
 - Tracking the number of guest speakers
 - Tracking the number of volunteers
 - Tracking the number of referrals made
 - Tracking the languages spoken by participants
 - Tracking the participants' country of origin
- Create new Staff users
 - Admin users are able to create new Staff Users or give Staff level access to accounts

- Add a New Program To Database
 - Admin Users are able to create and add programs/location(ex. Newton Family Resource Program) to the database.
- Send out personalized emails
 - Admins Users are able to generate personalized emails

2.3 User Characteristics

Currently the staff, who works for Options Family Resource Program, are using sign in sheets and registration forms to track the participants. The client, who has requested this software, is presently using Microsoft Excel as a means to keep track of the families that drop into their program. Our software will have two types of users: Staff and Admin.

2.3.1 Staff Users are the staff that interact with the clients during registration and sign in. This type of user is assumed to have at least the basic knowledge of computers to be able to use the software to input data

2.3.2 Admin User are the workers that are responsible with filing reports and organizing events. This type of user is assumed to have moderate knowledge of computers and be able to learn and use functions more advanced than basic data input.

2.4 Constraints

- The software must be compatible with Microsoft 2008 R2 Server
- Company policy does not allow WIFI access to the servers
- This software and all of its data will only be accessible and stored on the servers at Options Family Resource Program
- The individual participants' data collected by Options will not be shared outside of the Options Family Resource Program
- Only the employees who have either a staff or admin account can interact with this software
- Options Family Resource Program will handle all future maintenance and updates as the development team will be disbanded as of April 4 2013

2.5 Assumptions and Dependencies

- We are assuming the users of this software will enter correct and valid data into the system.
- This software will be built and tested specifically on Microsoft 2008 R2 Server and Microsoft SQL Server 2008 R2. Any changes may cause incompatibility issues.
- We are assuming there will only be a maximum of 20 users simultaneously accessing the database.

3. Specific Requirements

3.1 External Interfaces

The system shall only take input from keyboard/mouse.

3.1.1 Interfaces Exposed to Both Staff and Admin users

- Main view:
 - The user should be able to navigate between New Patient Sign Up view, Old Patient Revisit view, Create User View, Log In view, Add Event view, Add library item view.
- Add User view:
 - The administrator should be able to add employee information into the system. The user should be able to input Name, Phone number, Email address, User name, Password, Working location.
- Edit user view:
 - The administrator should be able to edit the user's information, so the user should be able to input
 - Name, Phone number, Email address, User name, Password, Working location.
- Log in view:
 - The staff should be able to input User name and Password to log in.
- New parent sign up view:
 - When a new parent visit, the user should be able to input these fields: Parent/Guardian Name, Phone number, Email address, Partner info, Children's name and birth date, First language, Country born in, Allergies, Emergency contact info, First three digits of postal code, How have they been informed of this program, First visit time.
- Edit parent view:
 - The user should be able to edit these fields: Parent/Guardian Name, Phone number, Email address, Partner info, Children's name and birth date, First language, Country born in, Allergies, Emergency contact info, First three digits of postal code, How have they been informed of this program, First visit time. The user should also be able to add and edit new family members.
- Old parent revisit view:
 - When an old patient revisit, the user should be able to input the Parent/Guardian Name, Children's Name, Allergies, and Phone number
- Add event:
 - The user should be able to input Name of the event and Time of the event. The user should be able to see all the patient and select who is attending the event.
- Edit event:
 - The user should be able to input Name of the event, Time of the event and edit who is attending the event.
- Add library item:

- The user should be able to input Name of the item and select who is borrowing the item.
- Edit library item:
 - The user should be able to input Name of the item and select who is borrowing the item.

3.1.2 Admin Only Interfaces

- Add program/location:
 - The admin user should be able to input Name of the program/location(such as 'Newton Family Resource Program')
- View Statistics of all programs/locations:
 - The admin user should be able to view statistics of all program/locations. See section 3.2.3 for details.

3.2 Functions

Section 3.2.1 and 3.2.2 includes functionalities accessible by both admin and staffs. Staffs working for one location, however, are restricted to accessing/modifying data of the particular location. The admin user, on the other hand, can access/modify data of all locations.

Section 3.2.3 are functionalities accessible by only the admin user.

3.2.1 Main Program(Must Have Functionalities):

3.2.1.1 The system should allow the user to log-in using a username and password.

3.2.1.2 The system should allow the user to register a new family. It should be able to collect all fields in the Participation Card, excluding the signature. Only the full name is mandatory. Refer to external document #5(Participation Card) in section 1.4.1.

3.2.1.3 The system should allow the user to collect daily visits/sign-in info. It should be able to collect all fields in the Sign-In sheet. Only the highlighted fields(Full name) are mandatory. Refer to external document #3(Sign-in sheet) in section 1.4.1.

3.2.1.4 The system should allow user to add/remove events in a calendar. The name and time of the event are mandatory when adding.

3.2.1.5 The system should allow user to add resources/referrals. The name of the resource/referral is mandatory and it must not allow two resources/referrals to have the same name.

3.2.1.6 The system should allow user to track daily the number of resources handed out and referrals made.

3.2.1.7 The system should allow the user to check if a participant is registered to the system or not by providing full name and phone number

3.2.1.8 The system should allow the user to change his/her password.

3.2.1.9 The system should allow the user to log out from the System.

3.2.1.10 The system should not allow Staff user to directly access or modify databases belonging to another program/location.

3.2.2 Library(Additional Features):

3.2.2.1 The system should allow the user to register parents to the system for borrowing toys, books, and videos. The system must collect full name of the parent and record the fees paid. An expiration of 1 year is auto generated for each parent.

3.2.2.2 The system should allow the user to add new toys, books and videos to the database.

Data fields:

- Name(Mandatory)
- ID(Mandatory and unique)
- Picture
- Description
- Defective(true/false)
- Sanitized
- Cost(dollar amount)

3.2.2.3 The system should allow the user to update library item information.

3.2.2.4 The system should be able to display a list of all items available for check-out and allow the user to check out selected items only if:

- The user provides a the parent's full name and it's a valid borrower in the system
- The borrower is not already holding 2 items.
- The number of selected items + the number of items checked-out by the parent does not exceeds 2.

3.2.2.5 The system should be able to check-in items returned by parents.

3.2.3 Admin(Must Have Functionalities):

3.2.3.1 Given a time span, System should allow admin users to obtain statistics from each program/location:

- # of parents
- # new parents
- # children
- # new children
- # drop-in sessions
- # of hours of service
- # of field trips/events
- # Guest Speakers
- # of resources handed out
- # of referrals made

3.2.3.2 System should allow admin to create one user account for staff at each location

3.2.3.3 Admin can add a new program/location in the system given the following attributes:

- name of location
- name of program

3.3 Performance Requirements

Client Performance Requirement

- The number of simultaneous users to be supported.
 - 20 user shall be able to use the system simultaneously
- Time taken per transaction
 - any data query/modification transaction triggered by the user shall not take longer than 5 seconds to complete.

3.4 Logical Database Requirements

The system database shall contain the following tables:

- Primary_Guardian : table containing information of a parents/guardian's participation card; refer to section 1.1.4.
- Children : table containing information on a parent's child.
- Allergies_People : table containing information on allergies for parent/guardian or children.
- Toy : table containing information of toys available for lending.
- Video : table containing information of videos available for rent.
- Center : table containing information of the different centers of Options Community Service
- Event : table containing information of the events being help at Options Community Service
- Free_Reading_Material : table containing information on the reading materials handed out to clients at Options Community Service.
- Prim_Guardian_Borrow : table describing the relationship between the which toys were borrowed by which parent/guardian.
- Event_Participant : table describing the relationship between event and which children and/or parents who participated in those events.
- Free_Resources: table contains resources(like pamphlets) that can be handed out to parents.
- Referral: table contains referrals staffs can make.

3.5.1 Reliability

The system should be reliable so that when a crash occurs, only unsaved changes to the database may be lost. Unsaved changes includes the following:

- Adding new family/events/library items
- Modifying family/events/library items
- Daily visits entries

Users can recover from a crash by restarting/refreshing the application.

3.5.2 Availability

The system shall be running 24/7 and accessible to all users who have been assigned a user name and password.

3.5.3 Security

- Account will be access via either created accounts in the system
- System will automatically log out after 20 min of inactivity.
- VPN to the company server is required to access the application.

3.5.4 Maintainability

An installation package will be provided along with additional software packages if needed. There may be the possibility that this system will be used for a long period of time; every feature in the *OFRPDMS* will be well documented enough that if the client may want to modify or add to this system and interface, they will be able to. Changes will be made through a modification to the source code and redeployed. There will be no option to configure the application externally.

3.5.5 Portability

This software will not be cross-platform portable; it will be designed to run on Windows Server 2008 R2+IIS.

4. Change Management Process

Initial requirements were accepted in the first 3 weeks of the semester where they were given in writing or discussed at a meeting with Options and agreed upon by every team member that the requirement can be met. Any changes such as modifying or adding new requirements during the development cycle can be specified in e-mail, written, or verbal communication. Then the team will discuss and evaluate the risk in making this modification based on the amount of time and the difficulty of integration into the current state of the system. Based on those assessments, the team will decide whether to accept or reject the change. When such a change is accepted, Appendix A in **Section 6** of this document will be updated to document the request and the

relevant section of the SRS will be amended to reflect the change.

5. Document Approvals

Katherine MacIntyre	Date
Kurt Eiselt	Date
Deepak Azad	Date
Steven Liu	Date
Ante Zheng	Date
Tony Chiu	Date
Rufus Zhu	Date
Peter Moon	Date
Kevin Lau	Date

6. Supporting Information

The source code, documentations, and the installation packages which initializes the database tables will be given to the client. They must run the installation packages which will automatically set everything up. No additional software will be required to deploy our product.

6.1 Appendix A: Log of Requirement Changes