SOFTWARE REQUIREMENT SPECIFICATION

8/23/2013   Graduate Capstone

RECEIPT REWARDS

Table of Contents

1 Introduction

The purpose of this document is to provide a repository and description of all the requirements found in the system of the project. The document will be used by the development team to develop the functionality. Clients can also use this to verify the agreed upon functionality.

1.1 Intended Audience

This document is intended for individuals with a medium-high technical or business background.

1.2 References

- http://www.env.gov.bc.ca/csd/imb/3star/sdlc/3analysis/Software_Requirements_Specification_Standards.doc

1.3 Revision History

Managing the change history of this document will occur in this table.

Name	Date	Reason For Change	Version
Andy Bottom	04/05/2013	Began compiling information into SRS document;	0.1
Andy Bottom	04/16/2013	Continued to work a tad more in the document;	0.15
Andy Bottom	04/28/2013	Continued funneling information into the document;	0.2
Andy Bottom	05/07/2013	Finished finalizing the first version.	1.0

2.0 Overall Description

2.1 Product Perspective

The following are the requirements of the entire system. Even though the system itself contains several whole models including: Phone, Web Services, Database, Automation and Back-Office, all requirements will be specified in this entire document.

2.2 Product Functions

The following is a list of the high-level and more functions of each system.

2.2.1 Web Services

- Used to handle all database requests
- Utilized by all external interfaces (phone and web admin.)
- Kicks of the automated process.

2.2.2 Automation

- Web Driver to submit the user submissions into the Company Survey Websites.

2.2.3 Admin Back-Office Application

- Manage all data in the system and database

2.2.4 Phone Application

- Interfaces with the user for them to utilize the functionality of the system.

2.3 User Characteristics

- Administrators must be somewhat technical understanding of the system
- Users of the Phone Application must have a working knowledge of how to use Smart Phone Applications. Also, have an understanding of the purpose of the application.

2.4 General Constraints

The anticipated operating environment will be on a mobile device. Since this will be an application, the goal is to make the application available to the companies that already have the largest marketshares. Currently, we will be aiming to having our application developed for iOS, Android, and Windows Phone.

2.2.1 Hardware Constraints
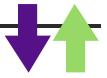
- Phone Screen Size
- GPS

2.2.2 Software Constraints

2.2.2.1 Local Caching

Caching is going to be used on the phones and the Web Services so that data can be sent quicker and relieve the need for constantly hitting the database or the Web Services. Depending on the hardware phone OS.

2.2.2.2 Miscellaneous

- Phone OS
- Xamarin Framework

2.2.3 Other Constraints

2.2.3.1 Company Survey Websites

We pretty much are at the mercy of how well we can utilize the surveys on the websites. If a company changes a survey such as questions, are application will fail and need to have a new revision made for that survey so that the automated process can continue.

2.5 Assumptions and Dependencies

2.5.1 Assumptions

- We are making the assumption that the load of the application will not surpass one individual per minute. We are making this assumption because there is only one server that is handling all the work. The assumption once the application has passed testing and will be released that the load will increase significantly.
- Those users of the Admin CMS have a medium-high technical background.

2.5.2 Dependencies

2.5.2.1 Hardware

- I will be using Windows 8 OS to perform most of the coding and testing on. I have it stored on an external hard drive that is bootable for the Carroll Computers. That way my settings and programs will be already configured each time I start up. Also, if time permits, a Macintosh computer will be needed to code and test the iOS app.

- I will be testing my phone application on my Windows 7.5 phone, and on my families Android Phones. If time permits, a iPhone will be used to test the iOS app.

- A Microsoft SQL Server Database will be used to store the data. The server is stored on the Carroll Network, provided for the CSC students.

- The Web Services will be hosted on a Java Server hosted on the Carroll Network provided for the CSC Students.

2.5.2.2 Software

- I will be programming the Windows Phone and Android Application in Visual Studio 2012. If time permits, another Mac IDE will be used to code the iOS App.

- For testing the applications, I will be using a Windows Phone, Android and iOS phone emulators.

- For coding the Web Services and Web Driver, I will be coding in NetBeans IDE.

- Tomcat will be running the Web Services.

- Microsoft SQL Server will be the database software.

- To test the Web Service, SoapUI will be used.

- Web Browsers will be used to use the Admin Website.

- Software Ideas Modeler will be the software used to make the diagrams.

3 Specific Requirements

3.0 Definitions

3.0.1 Types

F – Functional

NF – Non Functional

3.1.2 Categories

SECURITY – Required Security Features

INTERFACE – Required User Interface

CONFIGURATION – Required Configurable Behavior

CORE – Required Core Features of the System

3.1 External Interfaces

This section contains requirements relating to the inputs and outputs of the system. Specifically, relating to the Web Admin and the Phone Applications.

Functional Requirement ID	REQ-03: Anonymous Sign In Page
Description	Only an anonymous user can visit the Sign In page and log in. Users that are already signed in will not be allowed to view this page.
Origin	Log In Functionality
Priority	High
FIT Criterion	Anonymous Users can log in and Logged In users cannot.
Type	FUNCTIONAL
Category	CORE

Functional Requirement ID	REQ-05: Sign In Link Property
Description	When an anonymous user is using the application, they will see the sign in link. However, when a Logged in User uses the application, they will see the logout link.
Origin	Log In Functionality
Priority	High
FIT Criterion	Anonymous Users can only see Log In; Logged In Users can only see Log Out
Type	FUNCTIONAL
Category	INTERFACE

Functional Requirement ID	REQ-06: Any User Can Browse
Description	Any User can use the application and browse for companies
Origin	Browsing Functionality
Priority	Medium
FIT Criterion	Users can visit the browse company pages.
Type	FUNCTIONAL
Category	INTERFACE
Reference	UC-04;

Functional Requirement ID	REQ-07: Any User Can Search
Description	Any User can user the search functionality of the application
Origin	Browsing Functionality
Priority	Medium
FIT Criterion	Users can use the search page.
Type	FUNCTIONAL
Category	INTERFACE

Functional Requirement ID	REQ-08: Main Menu Functionality
Description	A Main Menu will be used to help the user navigate between different screens of the phone application
Origin	Phone Functionality
Priority	Medium
FIT Criterion	A Main Menu is created for the user to use and navigate
Type	FUNCTIONAL
Category	INTERFACE
Reference	UC-01;

3.2 Functions

These describe the fundamental actions that take place for processing the inputs and outputs.

Functional Requirement ID	REQ-01: Any User Can Use Application
Description	A user can use the application without needing to log in.
Origin	Log In Functionality
Priority	High
FIT Criterion	That a user will be able to anonymously fill out a survey and receive the reward without having to log in.
Type	FUNCTIONAL
Category	CORE

Functional Requirement ID	REQ-02: User Cookie Created
Description	When a user logs in, a cookie will be created on the phone to store their logged in user information.
Origin	Log In Functionality
Priority	High
FIT Criterion	When user logs in, they will be shown as being logged in via the cookie that is stored
Type	FUNCTIONAL
Category	CORE
Reference	UC-02;

Functional Requirement ID	REQ-04: Users Can Sign Out
Description	Only signed in users can sign out. Anonymous Users cannot.
Origin	Log In Functionality
Priority	High
FIT Criterion	Logged In Users can sign out.
Type	FUNCTIONAL
Category	CORE
Reference	UC-03;

Functional Requirement ID	REQ-09: Receive Take Survey
Description	When User Takes Survey, the first question should be displayed to the user.
Origin	Browsing Functionality
Priority	Medium
FIT Criterion	Users can use the search page.
Type	FUNCTIONAL
Category	INTERFACE
Reference	UC-07;

Functional Requirement ID	REQ-10: Answer Question
Description	When Upon a User Answers a Question from a Survey, the phone application shall perform any required validation on the form element that may be tied to the field. If it fails, then it won't make a request to the Web Service;
Origin	Take Survey
Priority	High
FIT Criterion	Inputting an incorrect value for a form_element that has validation associated to it shall display an error message to the user about the value; The user will not be able to continue to the next question if a required validation specific form element has an invalid field in it.
Type	FUNCTIONAL
Category	CORE;
Reference	UC-08;

3.3 Performance Requirements

Contain requirements specifying numerical requirements placed on the software system.

Functional Requirement ID	REQ-18: Response Time of Automation Run
Description	The response time of an automation process to run and return with a response shall not exceed 15 seconds.
Origin	Form Answer Submission;
Priority	LOW;
FIT Criterion	Ensure that the duration of a answer submission of a form does not exceed 15seconds from the phone interface.
Type	NON-FUNCTIONAL;
Category	CORE;

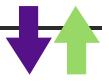| Functional Requirement ID	REQ-19: Automation Work Load
Description	The automation should response within 15 seconds with 10 simultaneous calls
Origin	Web Driver
Priority	Medium
FIT Criterion	When there is 10 simultaneous calls, the automated process should return within 15 seconds.
Type	FUNCTIONAL
Category	CONFIGURATION

3.4 Logical Database Requirements

Contains logical requirements for information inserted into the database.

Functional Requirement ID	REQ-17: Active Revisions
Description	Only one revision of a survey can be active.
Origin	Revisions;
Priority	High
FIT Criterion	Ensure that through the Back-Office Application, that there is no way to set two revisions as active.
Type	FUNCTIONAL
Category	DATABASE;

3.5 Design Constraints

Specific requirements imposing standards or limitations on the system.

There are no requirements at this time.

3.6 Software System Attributes

3.6.1 Reliability

There are no requirements at this time.

3.6.2 Availability

Functional Requirement ID	FR–14: Web Service Down–Time
Description	The Web Services Down-Time shall not exceed 5%
Origin	WEB-SERVICES;
Priority	Low
FIT Criterion	The down-time of the Web Services should fit within the specified percentage range
Type	NON-FUNCTIONAL;
Category	SYSTEM;

3.6.3 Security

Functional Requirement ID	FR-15: Web Service Request Security
Description	The Web Service Requests shall contain security to ensure that the security code of that is sent along with the request matches a trusted application.
Origin	WEB-SERVICES;
Priority	Low
FIT Criterion	None;
Type	NON-FUNCTIONAL;
Category	SYSTEM;

Functional Requirement ID	FR-16: Encrypted Requests and Responses
Description	All Sensitive Information Shall be Encrypted when sent to and from the web services
Origin	WEB-SERVICES;
Priority	Low
FIT Criterion	Check that the request and response strings are encrypted.
Type	NON-FUNCTIONAL;
Category	SYSTEM;

3.6.4 Maintainability

Functional Requirement ID	FR-11: Web Admin Data
Description	The use of the back office is to maintain the data in the system and database/
Origin	Back-Office;
Priority	Low
FIT Criterion	None
Type	NON-FUNCTIONAL;
Category	CORE;

Functional Requirement ID	FR–12: Test Automation CRON Job
Description	A CRON Job will be ran daily at 12:00am and will perform a test run on all automations to ensure that no updates have been performed on the Company Survey Sites.
Origin	CRON;
Priority	MEDIUM-HIGH;
FIT Criterion	A CRON Job is made that accomplishes this requirement and is successfully run at 12:00am daily.
Type	NON-FUNCTIONAL;
Category	SYSTEM;

Functional Requirement ID	FR–13: Test Automation CRON Job Failure
Description	If the Automation CRON Job finds a survey in which the Automation Process fails, the error will be logged and need of Administrator Assistance to look into the Failed Automation will be requested.
Origin	CRON;
Priority	MEDIUM-HIGH;
FIT Criterion	A failed automation note should be added to the CRON log. And message to the Administrator shall be sent.
Type	NON-FUNCTIONAL;
Category	SYSTEM;