SMART Company

Geo location based Service finder for User Needs (GSUN)
Software Requirements Specification

Version 1.0

Revision History

Date	Version	Description	Author
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Software Requirements Specification

1. Introduction

1.1 Purpose

In Sri Lanka business sector has less exposed to new technologies. So people have to face lots of inconveniences in finding the closest business point to get the service they want. In order to cope with that problem I have decided to come up with a solution, GSUN. GSUN as it name says, it's a Geo location based Service finder for User Needs. It has the capability of finding the closest shop for user needs according to user's current location. Therefore purpose of the system is to provide the closest information about services according to their needs with the consideration of their geo location.

1.2 Scope

The software requirement specification covers the high-level description about overall system. In addition to that this provides the initial that are related to the project GSUN and abstract information about the functionalities of this system.

1.3 Definitions, Acronyms, and Abbreviations

GSUN - Geo location based Service finder for User Needs

WSDL – Web Service Definition Language

SOAP – Simple Object Access Protocol

RUP – Rational Unified Process

IDE – Integrated Development Environment

SDK – Standard Development Kit

WS-BPEL - Web Services Business Process Execution Language

SOA – Service Oriented Architecture

1.4 References

Project Vision, version 1, 2011
This report contains product overview, stakeholder description and features of the product.

Project Feasibility Document, version 1, 2011
This report provides the feasibility study about the implementation of the project.

Project Development Case, version 1, 2011
This report express how the project adhere to the RUP disciplines.

Project Schedule, 2011
This document shows how the project is to be carried on with in the given time constrain and milestones that will meet.

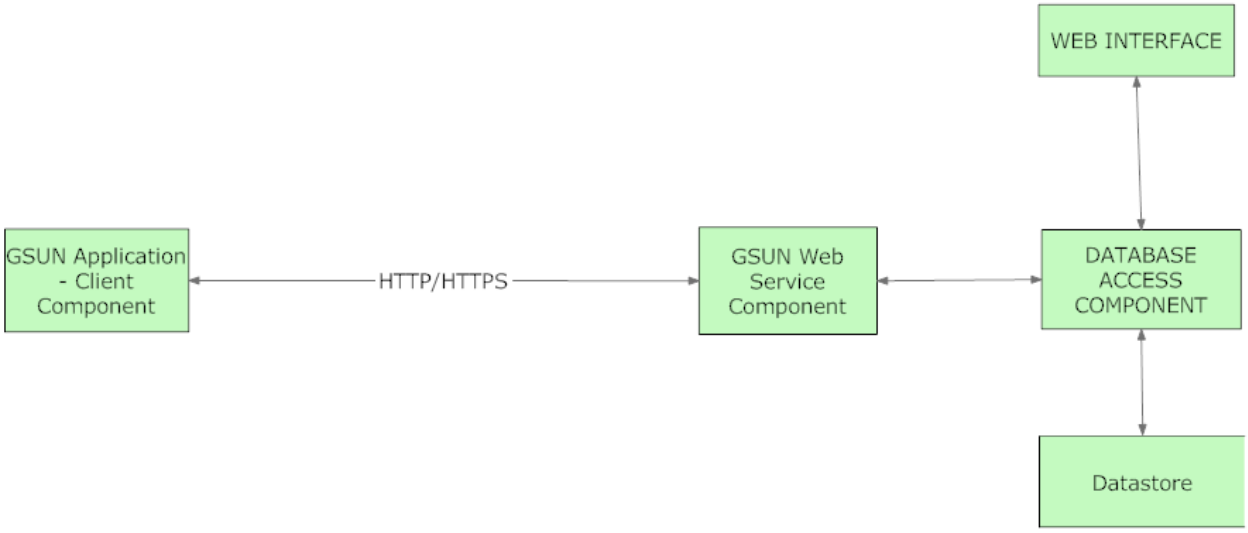
1.5 Overview

This report describe about various aspects of the GSUN system. In early section there is a brief description about the system, purpose and the scope of the system. In latter parts this describes about the requirements in terms of various aspects and other supporting information about the system.

2. Overall Description

2.1 Product Perspective

GSUN project consists of two independent parts. Client component runs on Android platform with support of platform infrastructure. Service component runs on a server and provide services to requests. There is a web interface associated with the server part which is use to provide information to the web service, and will be added after the approval of the system administrator.



2.2 Product Functions

- User can speak to tell or use touch sensitive keyboard to express what he want
- Application provides a list of exact palaces that provide the service user need
- In addition application provides a list of suggestion that the service might be available with distances
- Application can be customized to adjust the range of searching area
- User can contact the service providing places simply by a phone call
- People who are interested can provide data to the data base through web interface
- Administrator can approve or reject information provided by people
- External parties can use the web service with the permission given by administrator

2.3 User Characteristics

- Android phone user

  This user uses the GSUN client component to find the services. He has fair knowledge about the steps to be followed in this application and good knowledge in using Android phone basic functionalities.

- Business Community

  These people want to add their service location to the GSUN application through web interface. Therefore they have to have a fair knowledge in working with web based forms and services offered by their businesses.

- Administrator

  This user has a good knowledge about the functionality of the system and does necessary modifications to the system.

2.4 Constrains

- Availability of the smart phones is a limitation for usage
- Mobile service in Sri Lanka affect the quality of service
- Since this is the first time such web service is setting up, database contains less amount of data
- User has to follow correct sequence of steps
- Project should be within the given time period

2.5 Assumptions and Dependencies

- The application requires certain features in Android platform, so platform that application runs should have those features (eg: GPS)
- Geo location calculation in the phone is accurate
- User need should be expressed in generic form
- User has a fairly good mobile connection within that area
- User knows to use the basic functionalities of a map
- System assume the service is available in any day of the week
- Server is large enough to handle reasonable amount of requests
- External parties would consume the web service according to the rules and guide lines

2.6 Requirement Subsets

This report consists of following types of requirements

- Functionality
- Usability
- Reliability
- Performance
- Supportability

3. Specific Requirements

3.1 Functionality

- Input the user need through voice recognition or keyboard
- Setting the searching range thorough settings view
- Get a list of services that exactly matches user needs
- Additionally list of suggestions that the service might be available
- Examine further details about a particular service place
- Contact a service place through a phone call
- Provide a map view of available services
- Web interface for business community to add data about their services

3.2 Usability

- Application should not be too complex
- Application should provide essential information to user
- Application should provide a familiar environment to the user
- Commands in the application should adhere to the generic meaning
- Appropriate images and font colors should be used
- Functionalities should be easily understandable to users
- Application has to use simple methods to take inputs
- System should allow error recovery

3.3 Reliability

- System should be available throughout the day
- Mean Time Between Failure(MTBF) should be greater than 5 months
- Mean Time To Repair (MTTR) should be less than 3 hours
- The system should be 100% accurate as expected
- Software codes should have lesser number of bugs as possible
- Database must always keep the valid data with the approval of system administrator
- Enhanced security should be provided to server database and connections made by external parties
- Web server should have the capability of facing cyber attacks

3.4 Performance

- System should response within 5 seconds with the maximum of 10 seconds
- System should able to handle at least 100 requests per second
- Updates to the system should be applied immediately
- Transactions between client side and server side should be fast
- System should be optimized to find the closest place that user can get the service
- System should use the infrastructures provided by the phone and server optimally

3.5 Supportability

- System is built on top of Android SDK, Java SDK
- Client side component uses Google maps and Android Location libraries
- Adhere to Android UI design and best coding practices
- Use of Axis2 to handle web services
- Avoid memory leaks and stack overflows
- Using SOA along with WS-BPEL programming language standard

3.6 Design Constraints

- Adhere to the SOA design constrains
- Application interfaces should be simple and self-understandable
- Server web application should handle large number of requests
- Get the maximum support of the available GPS and internet connections

3.7 On-line User Documentation and Help System Requirements

- Well-structured online user guide should be created
- Quick guide to users should be provided along with the GSUN client component
- Online contact system with system administrators should be created

3.8 Purchased Components

This GSUN project completely depends on open source free products. Therefore need not to purchase components.

3.9 Interfaces

3.9.1 User Interfaces

- Client side 1st interface to say or type the thing user needs, with the aid of spell checker and suggestion list
- As the result of searching, user receives a list of places that provides the service for his need and list of suggested places where that service might be available
- After selecting a place, all the details related to that service is shown with a map view and give opportunity to contact that place.
- Additional settings interface to change the range user wants to search
- Web interface allows business community to add their services to the GSUN application

3.9.2 Hardware Interfaces

- Android phone with all required features

3.9.3 Software Interfaces

- GSUN client component provides an interface to server component
- GSUN server component provides an interface to access web service
- Database access component provides an interface to web application and web interface to access database

3.9.4 Communications Interfaces

- Client application has to access web component remotely. For that HTTP/HTTPS protocols are used
- To communicate with the web services SOAP is going to use

3.10 Applicable Standards

- SOAP – this is the message interchanging standard that supports communication between web services. It defines the essential and optional components of messages passed between services
- WSDL – This standard defines the way in which service providers should define the interface to these services. Therefore it allows the interface of a service and its bindings to be defined in a standard way
- WS-BPEL – This is the standard for a workflow language that is used to define process programs involving several different services.

4. Supporting Information

Not relevant at this stage