Business Process Automation
(BPA)

CE416

(PRJ2018CE009)

(Varshkumar K. Patel)

Software Requirements Specification

Document

Version: (1) **Date: (09/02/2018)**

Table of Contents

Introduction

This section gives a scope description and overview of everything included in this SRS document. Also, the purpose for this document is described and a list of abbreviations and definitions is provided.

1.1 Purpose

The purpose of this document is to give a detailed description of the requirements for the "Business Process Automation (BPA)" portal. It will illustrate the purpose and complete declaration for the development of system. It will also explain system constraints, interface and interactions with other external applications.
This document is primarily intended to be proposed to a customer for its approval and a reference for developing the first version of the system for the development team.

1.2 Scope

The project, Business Process Automation (BPA), is for Azure Knowledge Corp.
It is a web-application that utomates the process which can generate Daily/Monthly/Quarterly/Yearly revenue report and other reports to give detail insight to the multiple stakeholders.

Furthermore, it has role base & rule base access levels. Application which will require to create multiple masters. In addition to it, a reporting module which can generate different type of reports in real time basis.

1.3 Definitions, Acronyms, and Abbreviations.

Term	**Definition**
BPA	Business Process Automation
SMS Portal	System Management Server – Company's intranet site for communication purposes and e-mail integration.
SQL	Structured Query Language – for backend database purposes.
Azure B+	Azure B+ OS running on 64-bit system with 6GB RAM
BTR	Board Target Revenue
CPI	Consumer Price Index
CCPI	Client Consumer Price Index
PCPI	Partner Consumer Price Index
DESC	Description
RAT	Rational
DEP	Dependencies

1.4 Overview

The remainder of this document includes three chapters and appendixes. The second one provides an overview of the system functionality and system interaction with other systems. This chapter also introduces different types of user, property-terms and their interaction with the system. Further, the chapter also 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 Appendixes in the end of the document include the all results of the requirement prioritization and a release plan based on them.

The General Description

This section will give an overview of the whole system. The system will be explained in its context to show how the system interacts with other systems and introduce the basic functionality of it. At last, the constraints and assumptions for the system will be presented.

2.1 Product Perspective

This web based portal can be used on-premise from any web browser for company related work. The website is build with .NET framework 2.5 to support present systems in the company. Web portal is build in C# programming language.

2.1.1 System Interfaces

The website is build in C# programming language with the help of Microsoft Visual Studio 2013 ultimate IDE. For database on the backend SQL workbench is used. External services and protocols for sending email is also been integrated in this system.

2.1.2 Interfaces

There is a user specific GUI using which the company employees can use the portal very easily.

2.1.3 Hardware Interfaces

Since the web portal have no designated hardware, it does not have any direct hardware interfaces. The hardware connection to the database server is managed by the underlying operating system on the mobile phone and the web server.

2.1.4 Software Interfaces

The web application communicates with the database in order to get the information about the properties. The communication between the database and the web application consists of operation concerning both reading and modifying the data.

2.1.5 Communications Interfaces

The communication between the different parts of the system is important since they depend on each other. However, in what way the communication is achieved is not important for the system and is therefore handled by the underlying operating systems for the web portal. Email transfers is managed by the email services in SMS Portal of the company.

2.1.6 Memory Constraints

There is no specific memory constraint in order to run and integrate the web based portal. However, some features in database may need to be modified in order to perfectly match the configuration as per the requirement.

2.1.7 Operations

The website will require backup of the database periodically to maintain accuracy and for recovery.

2.1.8 Site Adaptation Requirements

Not applicable

2.2 Product Functions

From this application any employee from Azure Knowledge Corp. can easily use the following functions,

- Create a new project entry.
- Feed in daily work online.
- Feed in new project details.
- Edit project details.
- Use Excel2DB module.
- Generation of 21 different types of reports.
- Save reports that are generated.
- Email the reports via SMS Portal.

2.3 User Characteristics

Users of this web based integrated development environment will mainly be software developers for development and maintainence purpose. Since it is reasonable to assume that an average developer has knowledge about functionalities and usage of any IDE. The other users of this web application will be the client – Azure Knowledge Corp.
We assume that our users will already be informed about basic functionality of the product. Also clear documentation and tutorials about the product feature will be provided.

2.4 Constraints

Developers of the product should be aware that main feature of the intended product is portability. So they should use common libraries and tools that can work with all the well-known internet browser application with no problem. Reusabilty of the code be must while developing the application. Coding standards should strictly be followed.
Developers should also be careful about the privacy of users. Since product will be consisting sensitive data relating to the live projects running in the company, their legal documentations,their owners, and their net-worth, necessary precautions should be taken to protect user data.
Developers should also be careful about the E-mail sending protocols used in the application – SMTP connection and Internet availability for secure E-mail delivery.

Developer should also be made aware about the functioning of SMS Portal within the company.

2.5 Assumptions and Dependencies

One assumption about the product is that it will always be used on-premise device within the company's intranet network with enough system configurations. If the device does not have enough hardware resources available for the application, for example the users might have allocated them with other applications, there may be scenarios where the application does not work as intended or even at all. Without permission to SMS portal the user might not be able to avail email forwarding services however they might be able to save the report generated to their device offline.

Specific Requirements

With this section and later, we will describe the requirements of the software in detail. Basically, we will categorize requirements in 3 which are namely external interface requirements, functional requirements and non-functional requirements. Except non-functional requirements, requirements of the product will be detailed under this section with brief information and later sample input-output sequence and low of events will be given.

3.1 External Interfaces

The purpose of this section is to identify and document this interfaces and interaction of the software with external entities in detail.

Visual Studio 2013 Ultimate IDE is going to provide a communication interface to external services i.e DataBase(MySQL WorkBench). It will allow graphically create, edit and delete files, running and debugging their programs and other basic feature that and average integrated development environment provided.

A web browser interface will be the main graphical user interface where developers will interact with their workspace.

.NET framework 2.5 will provide the basic structure and framework to built the application based upon it.

With SMS portal support, the user will able to send and receive emails within the company for communication purposes.

3.2 Functions

This section includes the requirements that specify all the fundamental actions of the software system.

3.2.1 User Class 1 – All Employees

ID: FR1
TITLE: New Entry
DESC: Whenever a new project comes to company's doorsteps than with the help of this module the details relating to the management of the project and cost estimation can be carried out.
DEP: None.

ID: FR2
TITLE: Daily Entry
DESC: Employees can feed in their daily work via the portal to the system so that efficiency and progress of the employee via department can be maintained and project logs auto update with this for tracking project and scheduling.
DEP: None.

ID:FR3
TITLE: New Project Details
DESC: User can insert all the details relating to the project via this module to the system.
DEP: FR1

ID: FR4

TITLE: Edit Project Details
DESC: User can edit any of the details relating to the project via this module to the system.
DEP: FR1, FR3

ID: FR5
TITLE: Excel2DB
DESC: With the help of this module the user can update old excel files(i.e. there current process of working offline) to the system so we won't need to insert everything manually.
DEP: None.

ID: FR6
TITLE: Report Generation
DESC: User can ask for upto 21 different reports on real time basis from this module. Reports can be later used by the management for various purposes. Efficency of the work by the company can be easily found out by these reports.
DEP: None.

ID: FR7
TITLE: Save Report
DESC: Reports so generated can be saved to the system in pdf format.
DEP: FR6.

ID: FR8
TITLE: Email Report
DESC: Reports so generated can be shared via email with the help of SMS Portal.
DEP: FR6.

3.3 Performance Requirements

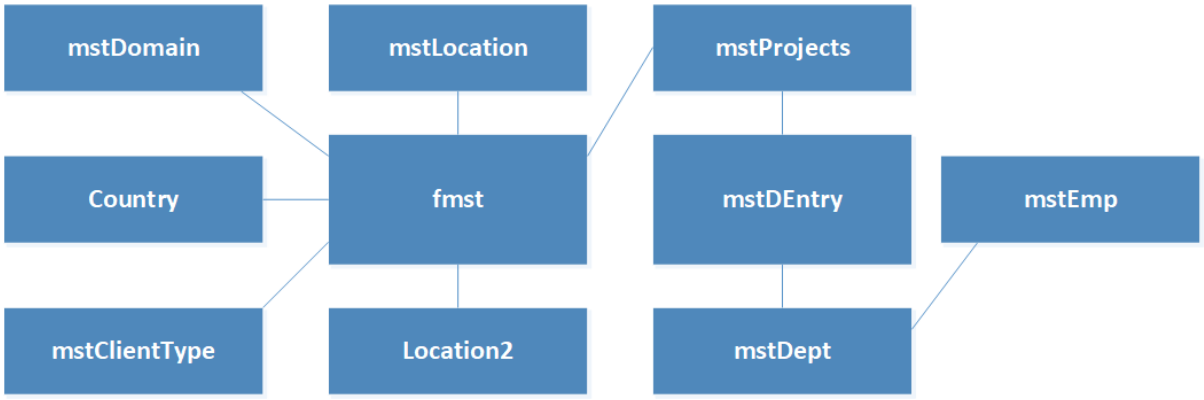
Opening and loading of any webpage will not take more than 1 second which is pretty efficient as it contains mainly the form in table and textboxes for data entry.

While submitting this information to the server will take upto 4 to 5 seconds as it will check for errors and validate the data before storing to the databse on the backend. Though this process is efficient upto 89%.

Efficiency of generating reports module will depend on the wide interests of fields you wish to include in the report. More field you select may require merging of multiple databases which can be tedious task for software on the backend and may take sometime.

3.4 Logical Database Requirements

Logical ER diagram is somewhat like mentioned below



Original ER may defer than this as the software is still under constant updation. Please note that above mentioned entity are the table name and the fields and relating data is not mentioned in this particular image.

3.5 Design Constraints

3.5.1 Standards Compliance

Standard naming convention in used throughtout, both in database and project coding.

3.6 Software System Attributes

The requirements in this section specify the required reliability, availability, security and maintainability of the software system.

3.6.1 Reliability

GIST: The reliability of the system.

SCALE: The reliability that the system gives the right result on a search.

METER: Measurements obtained from 275 searches during testing.

MUST: More than 98% of the searches.

PLAN: More than 99% of the searches.

WISH: 100% of the searches.

3.6.2 Availability

The system will be available to users 24/7 and will not have any down time.

3.6.3 Security

GIST: Security of the communication between the system and server.

SCALE: The messages should be encrypted for log-in communications, so others cannot get user-name and password from those messages.

MUST: 100% of the Communication Messages in the communication of a log-in session should be encrypted with MD5 algorithm.

3.6.4 Maintainability

The system should be having high maintainability in terms of correctness, adding new functionalities and should be highly adaptive.

3.6.5 Portability

The system so developed is very portable and is build to support multiple browsers on real time basis. No special permission is required by the system to implement in any devices. This system uses email forwarding feature which is not mandatory but if you seek to use it, appropriate resourses from the device will be utilized on fair share basis.