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Department of Computer Science and Engineering

Software Requirements Specification for ONLINE FOOD DELIVERY SYSTEM

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version

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Introduction

Purpose

The purpose of this SRS is to outline the functional and nonfunctional requirements of the product theme of online food delivery systems. The document also details the external interface, performance considerations, and design constraints imposed on subsequent implementations. This document should serve as the basis for efficient and well-managed project completion and as an accurate reference for the future.

Intended Audience

The primary audience for this SRS document is the development team involved in implementing the specified Online food delivery system. It will provide full capabilities for project planning and progress assessment, but it will also facilitate stakeholder interaction. The target group for secondary documents includes project stakeholders, ie. Restaurateurs and related staff. This SRS should communicate and identify the required functionality to this target group

Product Scope

This system allows the customers to maintain their cart to add or remove the product over the internet .This online application enables the end users to register online, select the food from the e-menu card, read the E-menu card and order food online. By just selecting the food that the user wants to have. The results after selecting the food from the E-menu card will directly appear in the nearby restaurant and the food is prepared and delivered to the location provided.

References

C. Larman, APPLYING UML AND PATTERNS An Introduction to Object-Oriented Analysis and Design and Iterative Development, 3rd ed., Massachusetts: Pearson Education, 2005.

D. Carrington, CSSE3002 Course Notes, School of ITEE University of Queensland, 2008

IEEE Recommended Practice for Software Requirements Specifications, IEEE Standard 830, 1998

Overall Description

Product Perspective

The software described in this SRS is the software for a complete online food delivery system. The system brings together various hardware and software elements and other interfaces to external systems. It relies on many external interfaces for persistence and unfinished tasks, as well as physical interfaces with humans.

Product Functions

The Online food delivery system interfaces with an existing payment system, and software accessible credit system, in order to quickly and easily handle customer billing. The payment system should be operable such that it can return information to the restaurants to whether

payment was successful or failed.It also handles the tracking and safely ensuring the delivery of food in an appropriate amount of time.

User Classes and Characteristics

The user classes are mainly of four types namely the restaurateurs , delivery people and end users There are separate user interfaces used by the user classes, each related to an interfaced physical hardware device and functionalities required by that specific class

Operating Environment

The Computer UI is the interface used by restaurant customers. This interface users interact with the system by dragging 'objects' around on the flat-screen touch-sensitive display.
The Tablet UI is designed to run on a small, wireless-enabled touch-screen tablet PC, to be used by restaurants to accommodate customer food orders with simple functionality related to ordered items.
The Display UI provides delivery staff with simple functionality related to the information about the delivery of the food.

Design and Implementation Constraints

The system should be written in a language with strong GUI links and a simple, accessible network API. The primary candidate tool chains are MERN stack and Python/Qt. The system must provide a capacity for parallel operation and system design should not introduce scalability issues with regard to the number of surface computers, tablets or displays connected at any one time
The system must be reliable enough to run crash and glitch free more or less indefinitely, or facilitate error recovery strong enough such that glitches are never revealed to its end-users.

2.6 Assumptions and Dependencies

The SRS assumes that none of the constituent system components will be implemented as embedded applications.It is further assumed that tablet PCs of sufficient processing capability and battery life will be utilized

External Interface Requirements

User Interfaces

In this interface users interact with the system by dragging 'objects' around on the touch-sensitive display. For the system, users can manipulate objects such as items of food, dietary requirements, tips and menus on the surface of their table.Users will be able to access their restaurant menu, which is combined with a system/command menu, using an easy touch gesture, a double-tap on the touch surface, and dismiss it with a similar gesture or by tapping a close button GUI element.

Software Interfaces

The interface with a Database Management System (DBMS) that stores the information necessary for the RMOS to operate. The DBMS must be able to provide, on request and with low latency, data concerning the restaurant's menu, employees (and their passwords) and available dietary requirements.Additional data that include records of all orders and transactions (system states and state changes) should also be stored. The DBMS must store all data such that it can be used for accounting, as well as accountability

Communication Interface

All devices on the Local Area Network (LAN) are in constant communication thanks to the interface. It should use a reliable-type IP protocol such as TCP/IP or reliable-UDP/IP for maximum compatibility and stability. All devices it will interface with should contain standard Ethernet compatible, software accessible LAN cards to maintain communication between the server and the surface computers, tablets, displays and the external payment system. Devices that are wireless should also use Ethernet compatible cards, using the IEEE 802.11b/g standard and having support for WPA2-PSK encryption. The use of IEEE 802.11n transmission standard hardware is also acceptable if all other local hardware is conformant to the same standard.

Analysis Models

The use case diagram for the online food delivery system shows the sample behavior of the software. It includes the project functions using use cases, actors, and their connections. The UML use case diagram helps the developers and businesses with system management. It includes the procedures from the viewpoint of users. The diagram serves as the system analysis to identify, clarify, and organize the project needs.

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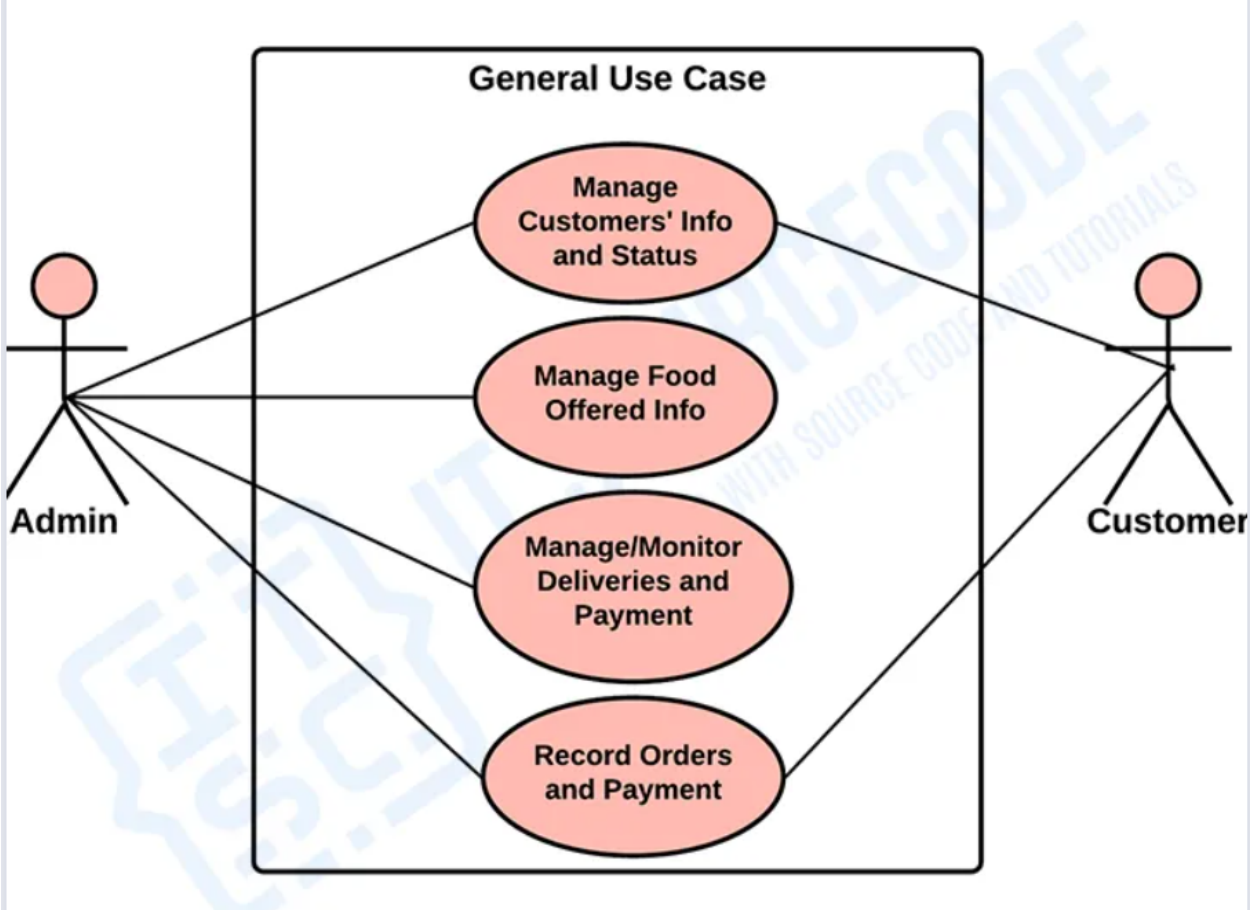

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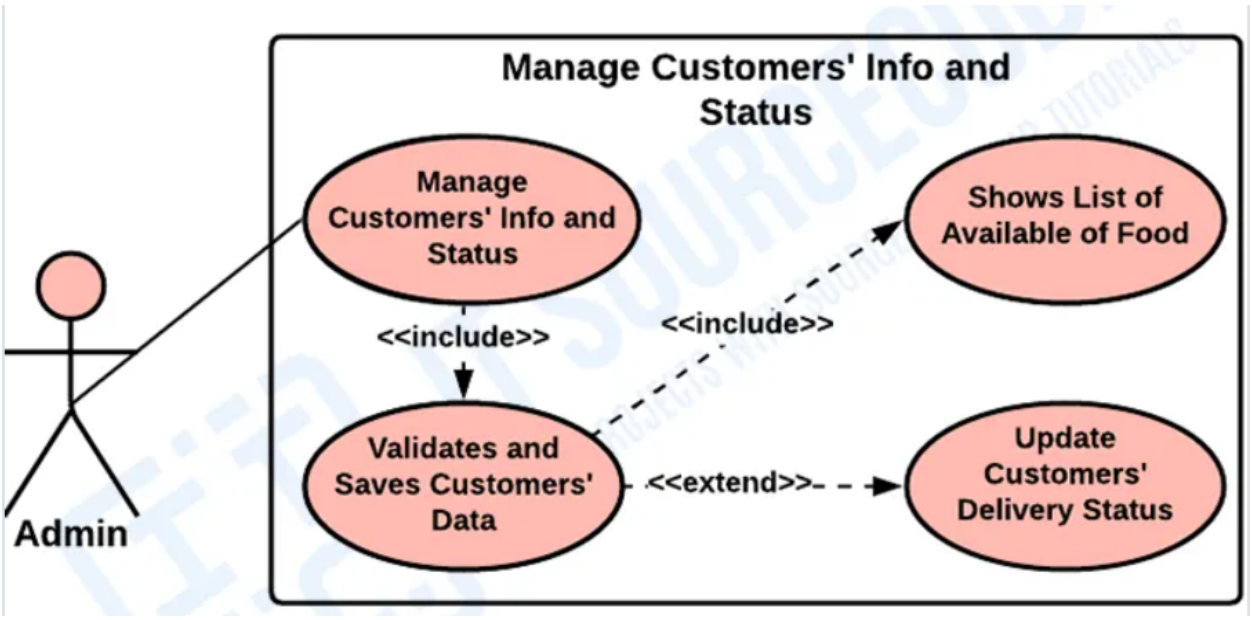

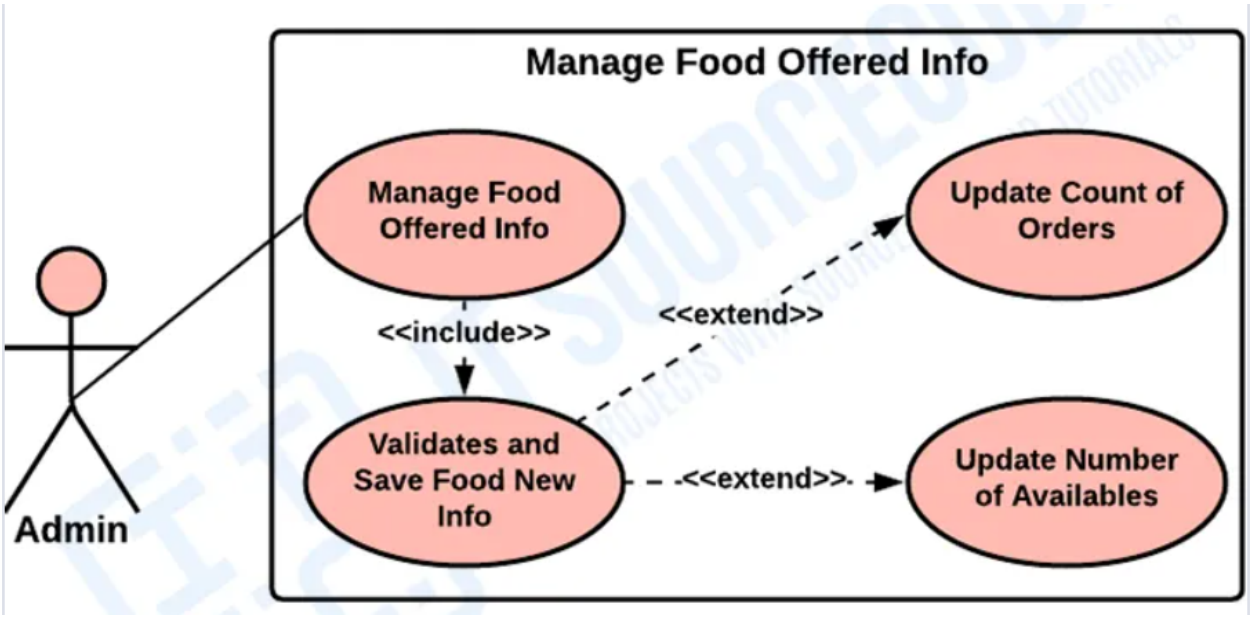

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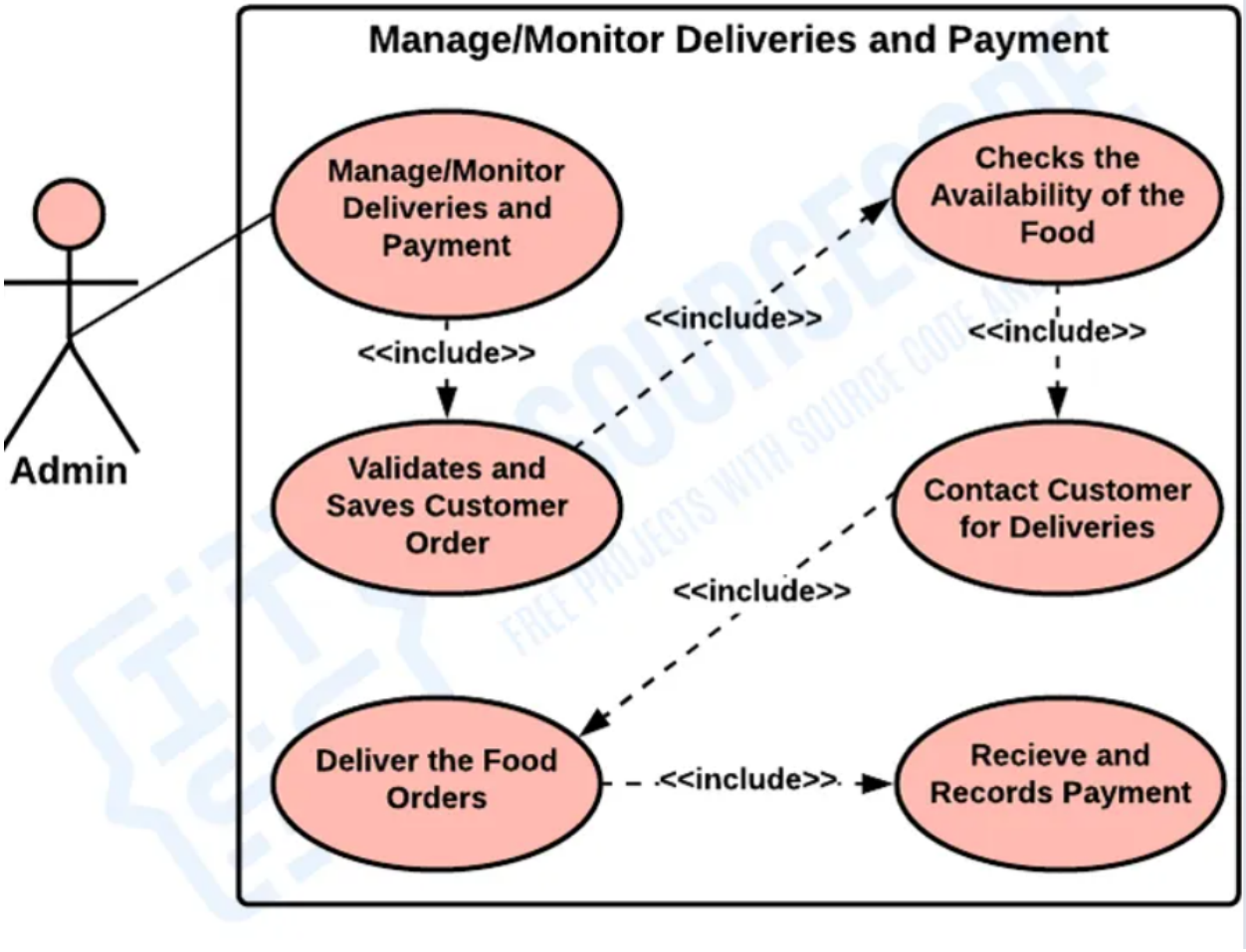

System Features

Sign up/Log in

5.1.1 Description and Priority

It is used to get the users details i.e. his/her e-mail ID and documents stored in the account under this email.

Priority: 7

5.1.2 Stimulus/Response Sequences

User should give his/her e-mail ID along with the password and so that the details can be stored in the DBMS for further use and transaction.

5.1.3 Functional Requirements

REQ-1: A DBMS to store all these details for further use and access.
REQ-2:A solid security system if the user decides to save the password.

Place Order

5.2.1 Description and Priority

The user can select the restaurant to order from by searching for it or by clicking on the dropdown box and then select the required food from that restaurant.

Priority: 9

5.2.2 Stimulus/Response Sequences

The user needs to enter the name of restaurant by searching for it or by using the drop down box and then place the order for the food he wants to.

5.2.3 Functional Requirements

REQ-1: A Cache memory to store the order as it is temporary

REQ-2: Cookies to store the user preference for the next time he/she logs in.

Transactions

5.3.1 Description and Priority

This module is written as card management and is used to handle all the transactions made to buy the food.

Priority: 8

5.3.2 Stimulus/Response Sequences

User needs to enter the method of pay, whether to card(and which card), or cash on delivery etc.

5.3.3 Functional Requirements

REQ-1: Strong connection as the site should not stop working in the middle of a transaction.

REQ-2: DBMS to store his card details in case he/she wants to permanently save them on company servers.

Order Report

5.4.1 Description and Priority

A description of all the items that the customer has ordered, item no: can be increased and items can be removed in this section.

Priority: 5

5.4.2 Stimulus/Response Sequences

User needs to re-check his/her order to make sure that they got his/her order right.

It also allows the user to edit his/her order if they need to.

5.4.3 Functional Requirements

REQ-1: Cache memory to store the order temporary in a stack for editing, incase the user does

Delivery Report:

5.5.1 Description and Priority

It is used to get users details like his/her name, age, mobile number and address, which is required to know where to deliver the food to.

Priority: 7

5.5.2 Stimulus/Response Sequences

User needs to enter his/her name, age, mobile number and address so that the food can be delivered to his/her address in 30 minutes.

5.5.3 Functional Requirements:

REQ-1: DBMS to store this address so that it can be remembered next time the user wants to order food to this location.

REQ-2: Strong connection as the site should not drop when entering these important details.

Order History:

5.6.1 Description and Priority

It contains all of the customers previous order and favorites so that it makes it easier for the user to order as he/she is likely to order the same order every single time.

Priority: 4

5.6.2 Stimulus/Response Sequences

Automatically needs to store in history no user stimulus / response required.

5.6.3 Functional Requirements:

REQ-1: DBMS to store all the details related to recent orders

REQ-2: Cookies to predict which is the users favorite

For Business:

5.7.1 Description and Priority

It contains the details for some person who wants to start their own restaurant on our online ordering system.

It also contains details on how he/she can commercialize his/her restaurant and how they can make profits.

Priority: 4

5.7.2 Stimulus/Response Sequences

User needs to enter details like location of his/her business, name, employee no of restaurant etc.

5.7.3 Functional Requirements:

REQ-1: DBMS to store these details

REQ-2: Check location using maps to see if the restaurants really exists

Track the Order:

5.8.1 Description and Priority

It can be used to check where the order is present and how far the delivery staff is from the user's location.

Priority: 6

5.8.2 Stimulus/Response Sequences

No user input or additional information/stimulus is required from the user.

5.8.3 Functional Requirements:

REQ-1: Maps to show the user the location of their order.

REQ-2 : Timer countdown for the user to be convinced the order will arrive in 30 minutes.

Other Non-functional Requirements

This subsection presents the identified non-functional requirements . The subcategories of non-functional requirements given are safety, security and requirements.

Performance Requirements

The server shall be capable of supporting an arbitrary number of active meals/orders, that is, no meals/orders shall be lost under any circumstances.
The server shall be capable of supporting an arbitrary number of surface computers, tablets and displays, that is, it shall provide no limit on how many devices are in the system.
The server shall be capable of supporting an arbitrary number of surface computers, tablets and displays, that is, it shall provide no limit on how many devices are in the system.

Safety Requirements

The system should log every state and state change of every surface computer, tablet and display to provision recovery from system failure
The system should be made capable of restoring itself to its previous state in case of a failure (e.g. a system crash or power loss).

The system should be able to display a menu at any time to facilitate manual order taking should the need arise.
The system shall utilize periodic 30-second keep-alive messages between tablets and the server to monitor tablet operational status.

Security Requirements

Wireless communication throughout the system will be made encrypted using SSLv3 at the application layer and WPA2-PSK at the data link layer.
The WPA2-PSK password which is used for wireless communication should have a bit strength of at least 80 bits
The WPA2-PSK password used for wireless communication must be changed every three months to increase the security.

Software Quality Attributes

The software should be capable of supporting an arbitrary number of surface computers, tablets and displays, that is, it should provide no limit on how many devices are in the system. It should be capable of supporting an arbitrary number of active meals/orders, that is, no meals/orders should be lost under any given circumstances.

Business Rules

All meals in a single order must be delivered to the same location.
All meals in single order must be paid using the same payment method.
Network transmissions that involve financial information or personally identifiable information require 128-bit encryption.

Other Requirements

The database should store the details of a customer's proper time. Admin should be able to update restaurant records.
Taking backup of the database and allowing it to create, modify and delete records.
Organizing member registration systems and monitoring transaction systems.
Allow customers to sign in and sign up, reset, create and change passwords.

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Appendix A: Glossary

SRS : It stands for Software Requirement Specification. It is used to refer to a document that completely describes all the constraints under which it must operate.

IEEE: Association for Electronic Engineering and Electrical Engineering.

UI: Industrial design field of human-computer interaction, a UI is the space where the Interactions between humans and machines occur.

DBMS: A Database Management System is essentially a computerized data-keeping system. Users of the system are given facilities to perform several kinds of operations on such systems.

LAN: It is a computer network that interconnects computers with limited area such as residences, school or office buildings.

TCP/IP: They are protocols used to interconnect network devices on the internet. It is also used as a communication protocol in private computer networks.

UDP/IP: Used by computer applications to send messages, in this case referred to as datagrams, to other hosts on an IP Network.

WPA2-PSK: It is a system of encryption used to authenticate users on wireless local area networks.

REQ: Used to declare a requirement that is needed to perform that functionality.

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Appendix B: Field Layouts

Field	Length	Data Type	Description	Is Mandatory
Account Number	16	Numeric		Y
ISFC code	11	Alphanumeric		Y
Status	25	Alphanumeric	Status of Registration	Y
Customer Name	60	String		Y
Food order	50	String		y
Reject Reason Code	4	String	Reject Reason code in case mandate is rejected	N
Location address	60	String	Delivery location	Y

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Appendix C: Requirement Traceability Matrix

Sl. No	Requirement ID	Brief Description of Requirement	Architecture Reference	Design Reference	Code File Reference	Test Case ID	System Test Case ID