SRM University

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Development of an efficient billing portal with smart inventory named as Smart Retail POS.

Developed by

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Smart Retail POS

Project Objectives

- To develop core functionalities for merchant to manage inventory and POS.
- To provide several reports to help merchant to analyze sales
- To predict inventory based on previous sales
- To predict Demand and Supply
- To develop android app for merchant
- Password-less authentication.
- Paper-less invoicing.
- POS profit estimate for instant discount.
- Mobile based wireless barcode scanner.
- To create data visualization models though charts
- Order Grouping and Batch Delivery Modules
- Multi Vendor Systems

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Software Requirements Specification

1. Introduction

The introduction of the Software Requirements Specification (SRS) provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations, references and overview of the SRS. The aim of this document is to gather and analyze and give an in-depth insight of the complete **Smart Retail POS** by defining the problem statement in detail. Nevertheless, it also concentrates on the capabilities required by stakeholders and their needs while defining high-level product features. The detailed requirements of the **Smart Retail POS** are provided in this document.

1.1 Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to consumers. Also, we shall predict and sort out how we hope this product will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered, but may be discarded as the product develops.

In short, the purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements. It defines how our client, team and audience see the product and its functionality. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes.

1.2 Scope

Primarily, the scope pertains to the POS product features for making Smart Retail POS project live. It focuses on the company, the stakeholders and applications, which allow for online sales, distribution and marketing of goods.

This SRS is also aimed at specifying requirements of software to be developed but it can also be applied to assist in the selection of in-house and commercial software products. The standard can be used to create software requirements specifications directly or can be used as a model for defining a organization or project specific standard. It does not identify any specific method, nomenclature or tool for preparing an SRS.

1.3 Definitions, Acronyms, and Abbreviations

Configuration	It means a product which is available / Selected from a catalogue can be customized.
FAQ	Frequently Asked Questions
CRM	Customer Relationship Management
RAID 5	Redundant Array of Inexpensive Disk/Drives

1.4 References

The references are:

- ✓ POS Structural Model
- ✓ POS Behavioral Model
- ✓ POS NFR Model

1.5 Overview

The remaining sections of this document provide a general description, including characteristics of the users of this project, the product's hardware, and the functional and data requirements of the product. General description of the project is discussed in section 2 of this document. Section 3 gives the functional requirements, data requirements and constraints and assumptions made while designing the POS. It also gives the user viewpoint of product. Section 3 also gives the specific requirements of the product. Section 3 also discusses the external interface requirements and gives detailed description of functional requirements. Section 4 is for supporting information.

2. Overall Description

This document contains the problem statement that the current system is facing which is hampering the growth opportunities of the company. It further contains a list of the stakeholders and users of the proposed solution. It also illustrates the needs and wants of the stakeholders that were identified in the brainstorming exercise as part of the requirements workshop. It further lists and briefly describes the major features and a brief description of each of the proposed system.

The following SRS contains the detail product perspective from different stakeholders. It provides the detail product functions of POS with user characteristics permitted constraints, assumptions and dependencies and requirements subsets.

3. Specific Requirements

The specific requirements are –

3.1 Functionality

Introduction –

This subsection contains the requirements for the POS. These requirements are organized by the features discussed in the vision document. Features from vision documents are then refined into use case diagrams and to sequence diagram to best capture the functional requirements of the system. All these functional requirements can be traced using tractability matrix.

3.1.1 Sell Configured to Ordered Products.

3.1.1.1 The system shall display all the products that can be configured.

3.1.1.2 The system shall allow user to select the product to configure.

3.1.1.3 The system shall display all the available components of the product to configure

3.1.1.4 The system shall enable user to add one or more component to the configuration.

3.1.1.5 The system shall notify the user about any conflict in the current configuration.

3.1.1.6 The system shall allow user to update the configuration to resolve conflict in the current configuration.

3.1.1.7 The system shall allow user to confirm the completion of current configuration

3.1.2 Provide comprehensive product details.

3.1.2.1 The system shall display detailed information of the selected products.

3.1.2.2 The system shall provide browsing options to see product details.

3.1.3 Detailed product Categorizations

The system shall display detailed product categorization to the user.

3.1.4 Provide Search facility.

The system shall enable user to enter the search text on the screen.

The system shall enable user to select multiple options on the screen to search.

The system shall display all the matching products based on the search

3.1.5 Detailed invoice for customer.

The system shall display detailed invoice for current order once it is confirmed.

The system shall optionally allow user to print the invoice.

3.1.6 Allow multiple payment methods.

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The system shall display available payment methods for payment.

The system shall allow user to select the payment method for order.

3.1.7 Provide various reports & predict inventory.

Various sales-based report to understand customer needs.

Various inventory based predictions to fulfil customer demands.

3.2 Usability

3.2.1 Graphical User Interface

The system shall provide a uniform look and feel between all the web pages and apps.

The system shall provide a digital image for each product in the product catalog.

The system shall provide use of icons and toolbars.

3.2.2 Accessibility

The system shall provide handicap access.

The system shall provide multi language support.

3.3 Reliability & Availability

3.3.1 Back-end Internal Computers

The system shall provide storage of all databases on redundant computers with automatic switchover.

The system shall provide for replication of databases to off-site storage locations.

The system shall provide RAID V Disk Stripping on all database storage disks.

3.3.2 Internet Service Provider

The system shall provide a contractual agreement with an internet service provider for T3 access with 99.9999% availability.

The system shall provide a contractual agreement with an internet service provider who can provide 99.999% availability through their network facilities onto the internet.

3.4 Performance

The product shall be based on web and has to be run from a web server.

The product shall take initial load time depending on internet connection strength which also depends on the media from which the product is run.

The performance shall depend upon hardware components of the client/customer.

3.5 Security

3.5.1 Data Transfer

The system shall use secure sockets in all transactions that include any confidential customer information.

The system shall automatically log out all merchants after a period of inactivity.

The system shall confirm all transactions with the merchant's web browser.

The system shall not leave any cookies on the merchant's computer containing the user's password.

The system shall not leave any cookies on the merchant's computer containing any of the user's confidential information.

3.5.2 Data Storage

The merchant's web browser shall never display a merchant's password. It shall always be echoed with special characters representing typed characters.

The merchant's web browser shall never display a merchant's credit card number after retrieving from the database. It shall always be shown with just the last 4 digits of the credit card number.

The system's back-end servers shall never display a merchant's password. The merchant's password may be reset but never shown.

The system's back-end servers shall only be accessible to authenticated administrators.

The system's back-end databases shall be encrypted.

3.6 Supportability

3.6.1 Configuration Management Tool

The source code developed for this system shall be maintained in configuration management tool.

3.7 Design Constraints

3.7.1 Standard Development Tools

The system shall be built using a standard web page development tool that conforms to either IBM's CUA standards or Microsoft's GUI standards.

3.7.2 Web Based Product

There are no memory requirements

The computers must be equipped with web browsers such as Internet explorer.

The product must be stored in such a way that allows the client easy access to it.

Response time for loading the product should take no longer than five minutes.

A general knowledge of basic computer skills is required to use the product

3.8 On-line User Documentation and Help System Requirements

As the product is POS, On-line help system becomes a critical component of the system which shall provide –

It shall provide specific guidelines to a user for using the POS system and within the system.

To implement online user help, link and search fields shall be provided.

3.9 Purchased Components

Bar Code Scanner Required, but for project purpose we are using Mobile based wireless barcode scanning.

3.10 Interfaces

There are many types of interfaces as such supported by the POS software system namely; User Interface, Software Interface and Hardware Interface.

The protocol used shall be HTTP.

The Port number used will be 80.

There shall be logical address of the system in IPv4 format.

3.10.1 User Interfaces

The user interface for the software shall be compatible to any browser such as Internet Explorer, Mozilla or Netscape Navigator by which user can access to the system.

The user interface shall be implemented using any tool or software package like Java Applet, MS Front Page, EJB etc.

3.10.2 Hardware Interfaces

Since the application must run over the internet, all the hardware shall require to connect internet will be hardware interface for the system. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable, Bar code scanner.

3.10.3 Software Interfaces

1. The POS system shall communicate with the Configurator to identify all the available components to configure the product.
2. The POS shall communicate with the content manager to get the product specifications.
3. The POS system shall communicate with payment system to identify available payment methods , validate the payments and process payment.
4. The POS system shall communicate to credit management system for handling financing options.
5. The POS system shall communicate with CRM system to provide support.
6. The POS system shall communicate with Sales system for order management.

3.10.4 Communications Interfaces

The POS system shall use the HTTP protocol for communication over the internet and for the intranet communication will be through TCP/IP protocol suite.

3.11 Licensing Requirements

Not Applicable

3.12 Legal, Copyright, and Other Notices

POS should display the disclaimers, copyright, word mark, trademark and product warranties of the Smart Retail POS.

3.13 Applicable Standards

It shall be as per the industry standard.

4. Supporting Information

4.1 Technical Process

1) Front-end development:
   a) AJAX
   b) jQuery
   c) HTML
   d) CSS
   e) Bootstrap
   f) FancyBox
   g) JavaScript
   h) Chart JS
2) Back-end development:
   a) PHP Custom MVC
   b) MySQLi
3) For Android app:
   a) Java on Android SDK
4) Server
   a) Linux Hosting - Hostinger
   b) Apache
   c) PHP 7.0
   d) Phpmyadmin
5) Version Control
   a) GIT
   b) Code Bucket
6) Time Management
   a) Wakatime
7) Documentation
   a) Pages
   b) Keynote
8) Testing
   a) Paiza.io
9) Dummy Data Source
   a) ShantiFresh Retail
10) IDE
   a) ATOM – Web APP Development
   b) Android Studio – Android App Development
   c) Adobe XD - Prototyping

4.2 Scheduling & Estimate

Milestone	Description	Release Date	Release
M1	Application view and Design	1 week	R1
M2	Database for application	3 days	R1
M3	Integrating views and designs	3 days	R1
M4	Testing for initial release	1 week	R2
M5	Issue tracker, user reviews,	1 week	R2
M6	Final release	3 days	R3

4.3 Team Responsibilities

	Project management	Requirement Engineering	Modeling	Mock-up development
Biswa Bijaya Samal	√	√	√	√
Aditya Sachdeva	√	√	√	
Arunima Mor	√	√	√	
Ishmin Singh	√		√	√