Software Requirements Specification

for

Smart App

Release 1.0

Version 1.0 approved

Prepared by Group 5

Process Impact

July 18, 2021

Table of Contents

Revision History ii

1. Introduction 1

1.1 Purpose 1

1.2 Document Conventions 1

1.3 Project Scope and Product Features 1

1.4 References 1

2. Overall Description 1

2.1 Product Perspective 1

2.2 User Classes and Characteristics 2

2.3 Operating Environment 3

2.4 Design and Implementation Constraints 3

2.5 Assumptions and Dependencies 3

3. System Features 3

3.1 Order Meals from Cafeteria 3

3.1.1 Description 3

3.1.2 Functional Requirements 3

3.2 Order Meals from Restaurants 5

3.3 Create, View, Modify, and Delete Meal Subscriptions 5

3.4 Create, View, Modify, and Delete Cafeteria Menus 5

4. Data Requirements 6

4.1 Logical Data Model 6

4.2 Data Dictionary 6

4.3 Reports 9

4.3.1 Ordered Meal History Report 9

4.4 Data Integrity, Retention, and Disposal 9

5. External Interface Requirements 10

5.1 User Interfaces 10

5.2 Software Interfaces 10

5.3 Hardware Interfaces 10

5.4 Communications Interfaces 10

6. Quality Attributes 11

6.1 Usability Requirements 11

6.2 Performance Requirements 11

6.3 Security Requirements 11

6.4 Safety Requirements 11

6.5 Availability Requirements 11

6.6 Robustness Requirements 11

Appendix A: Analysis Models 12

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Tăng Minh Tín | 7/15/21 | Initial draft | 1.0 draft 1 |
| Trương Nhật Nam | 7/16/21 | Adding and editing content | 1.0 draft 2 |
| Phạm Quốc Nghị | 7/18/21 | Baseline following changes after inspection | 1.0 approved |

# Introduction

## Purpose

This SRS describes the functional and non-functional requirements for software release 1.0 of the Smart App. This document is intended to be used by the members of the project team who will implement and verify the correct functioning of the system. Unless otherwise noted, all requirements specified here are committed for release 1.0.

## Document Conventions

No special typographical conventions are used in this SRS.

## Project Scope and Product Features

The Smart App allows users to use their smartphone to view detailed information about the phone such as description, price, brand, configuration and has pictures taken from the product for users to choose from. The most suitable product for us. With user-friendly features when using the app such as viewing product information, adding products to the cart, choosing the quantity, which color you want to buy, making payment...

## References

None

# Overall Description

## Product Perspective

The Smart App system is a new software system that replaces the manual processes and uses the current phone to order and payment products. The context diagram in Figure 1 illustrates the external entities and system interfaces for release 1.0. The system is expected to evolve over several releases, ultimately connecting to the Internet ordering services for several local stores and to credit and debit card authorization services.

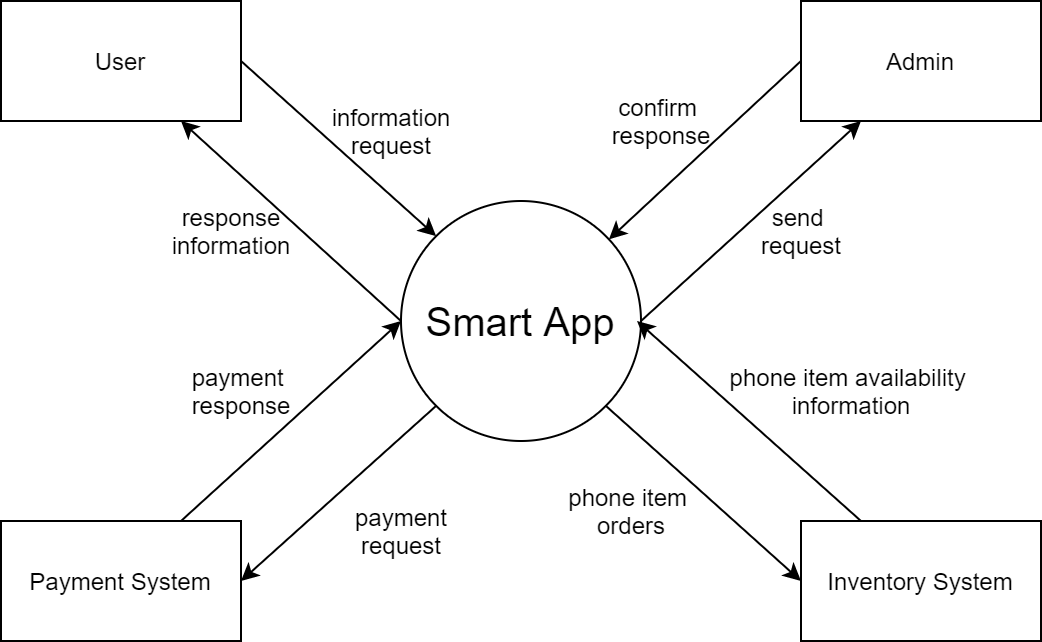


Figure 1. Context diagram for release 1.0 of the Cafeteria Ordering System.

## User Classes and Characteristics

|  |  |
| --- | --- |
| User | A user is someone who wants to order and pay for the company's phone products. There are about 1000 potential customers, of which about 600 customers are expected to use Smart App on average 5 times per week. Patrons will sometimes order many products or refer friends and relatives to the Smart App system. It is estimated that about 70% of orders will be made by the company's app, 30% of orders will be placed in the store. |
| Admin | Admin is the person who will receive information about orders from Smart App, to view and confirm these orders. Most admins will be trained on how to use hardware and software for Smart App. |

## Operating Environment

OE-1: The Smart App shall operate correctly with the following Android versions 21 through 30.

OE-2: The Smart App Server shall operate on a server running the current corporate-approved versions of Red Hat Linux and Apache HTTP Server.

## Design and Implementation Constraints

CO-1: The system’s design, code, and maintenance documents will be attached when submitting this file.

CO-2: The system shall use the current corporate standard MySQL database engine.

## Assumptions and Dependencies

AS-1: Smart App's server must work 24/7 to be ready to serve customers when accessing the system at any time.

DE-1: The operation of the Smart App depends on the changes made in the payment system to accept payment requests for mobile products when placing an order with the Smart App.

DE-2: The operation of the Smart App depends on the changes made in the inventory system to update the stock status of the products when the Smart App allows the acceptance of orders from the customer.

# System Features

## Buy products from Smart App

### Description

### A customer whose identity has been verified may order product either to be by using the app. Priority = High.

### Functional Requirements

|  |
| --- |
| **Product.ProductList: Viewing a list of products**  .Display: Smart App shall display all products in the store to customer who want to buy mobile phone in Smart App. Customer can choose the product they like to look that product’s description. |
| **Peoduct.Detail: Viewing a description of product**  .Display: When customer choose the product in product list, Smart App shall display that product’s description.  Response: The Customer can choose go to payment step to order this product at this time or add that product to their cart and continue to shopping |
| **Product.Cart: Viewing a customer’s cart**  Display: When the Customer want to check all product in their cart, the Smart App shall display the products ordered, the individual product prices, and the payment amount calculated per BR-12.  Response: The Customer can edit quantily of products, or remove products to their cart. |
| **Product.Confirm: Confirming an order**  .Display: When the Customer indicates that he does not wish to order any more products, the Smart App shall display the products ordered, the individual product prices, and the payment amount calculated per BR-12.  .Prompt: The Smart App shall prompt the Customer to confirm the order.  .Response: The Customer can confirm, edit, or cancel the order. |
| **Product.Pay: Meal order payment**  .Method: When the Customer indicates that he is done placing orders, the Smart App shall ask the user to select a payment method. |
| **Product.Done: When the Customer has confirmed the order, the Smart App shall do the following as a single transaction.**  . .Display: When the Customer confirmed, Smart App shall display their order code and order infomation |

## Create, View, Modify, and Delete Product Subscriptions

[Details are not provided in this example.]

# Data Requirements

## Logical Data Model

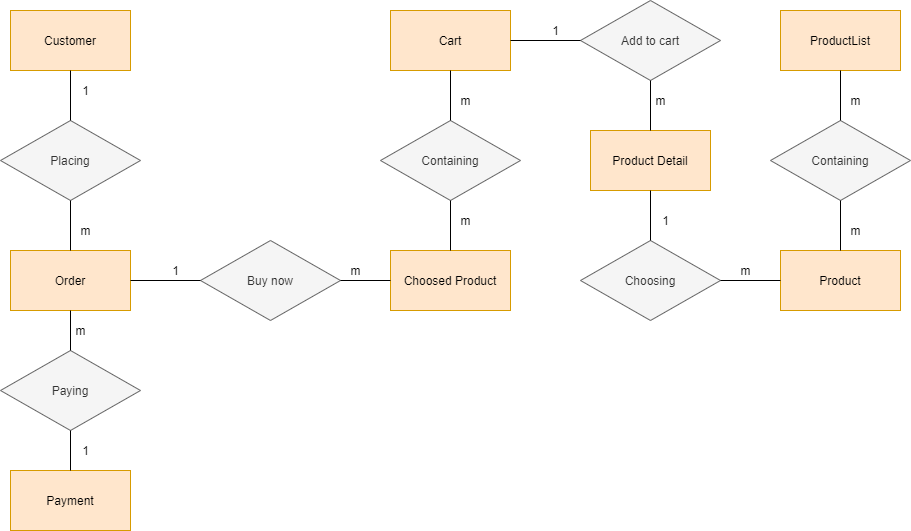


Figure . Partial data model for release 1.0 of the Smart App.

## Data Dictionary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data Element | Description | Composition or Data Type | Length | Values |
| product description | ext description of a product on a product list | alphabetic | 100 |  |
| product price | pre-tax cost of a single unit of a product desciption | numeric, VND | đ###,### |  |
| order | details about a Customer ordered | order number  + order date  + 1:m{ordered products}  + delivery instruction  + order status |  |  |
| order number | unique ID that Smart App assigns to each accepted order | integer | 7 | initial value is 1 |
| order status | status of a meal order that a Customer initiated | alphabetic | 16 | incomplete, accepted, prepared, pending delivery, delivered, canceled |
| payment | information about a payment Smart App accepted for a meal | payment amount  + payment method  + transaction number |  |  |
| product list | list of product available for Smart App store | product  + 1:m{product} |  |  |
| product | description of a product | product description  + product price |  |  |
| order date | the date on which a customer placed a order | date, MM/DD/YYYY | 10 |  |
| ordered product | one product that a Customer requested as part of a cart | Cart  + quantity ordered |  |  |
| customer | a user who is authorized to order a product | customer name  + customer code  + customer phone number  + customer address  + customer email |  |  |
| customer email | email address of the customer who placed a order | alphanumeric | 50 |  |
| customer address | Address of the customer who placed a order | alphanumeric | 50 | hyphens and commas permitted |
| customer name | name of the customer who placed a order | alphabetic | 30 |  |
| customer phone number | telephone number of the customer who placed a order | ########## | 10 |  |
| payment amount | total price of an order in VND, calculated per BR-12 | numeric, VND | đ###,### |  |
| quantity ordered | the number of units of each food item that the Customer is ordering in a single order | integer | 4 | default = 1; maximum = quantity presently in inventory |

# External Interface Requirements

## User Interfaces

UI-1: The Smart App screen displays shall conform to the Process Impact Mobile Application User Interface Standard.

UI-2: The system will design a friendly interface, easy for users to interact with the system.

UI-3: The screen shall permit complete navigation and item selection by using the touch alone.

## Software Interfaces

SI-1: Cafeteria Inventory System

SI-1.1: The COS shall transmit the quantities of food items ordered to the Cafeteria Inventory System through a programmatic interface.

SI-1.2: The COS shall poll the Cafeteria Inventory System to determine whether a requested food item is available.

SI-1.3: When the Cafeteria Inventory System notifies the COS that a specific food item is no longer available, the COS shall remove that food item from the menu for the current date.

SI-2: Payroll System

The COS shall communicate with the Payroll System through a programmatic interface for the following operations:

SI-2.1: To allow a Patron to register and unregister for payroll deduction.

SI-2.2: To inquire whether a Patron is registered for payroll deduction.

SI-2.3: To inquire whether a Patron is eligible to register for payroll deduction.

SI-2.4: To submit a payment request for a purchased meal.

SI-2.5: To reverse all or part of a previous charge because a patron rejected a meal or wasn’t satisfied with it, or because the meal was not delivered per the confirmed delivery instructions.

## Hardware Interfaces

No hardware interfaces have been identified.

## Communications Interfaces

CI-1: The Smart App shall send an email or text message (based on user account settings) to the system to confirm acceptance of an order, price, and delivery instructions.

CI-2: The Smart App shall send an email or text message (based on user account settings) to the system to report any problems with the order or delivery.

# Quality Attributes

## Usability Requirements

USE-1: The COS shall allow a Patron to retrieve the previous meal ordered with a single interaction.

USE-2: 95% of new users shall be able to successfully order a meal without errors on their first try.

## Performance Requirements

PER-1: The system shall accommodate a total of 400 users and a maximum of 100 concurrent users during the peak usage time window of 9:00 A.M. to 10:00 A.M. local time, with an estimated average session duration of 8 minutes.

PER-2: 95% of webpages generated by the COS shall download completely within 4 seconds from the time the user requests the page over a 20Mbps or faster Internet connection.

PER-3: The system shall display confirmation messages to users within an average of 3 seconds and a maximum of 6 seconds after the user submits information to the system.

## Security Requirements

SEC-1: All network transactions that involve financial information or personally identifiable information shall be encrypted per BR-33.

SEC-2: Users shall be required to log on to the COS for all operations except viewing a menu.

SEC-3: Only authorized Menu Managers shall be permitted to work with menus, per BR-24.

SEC-4: The system shall permit Patrons to view only orders that they placed.

## Safety Requirements

SAF-1: The user shall be able to see a list of all ingredients in any menu items, with ingredients highlighted that are known to cause allergic reactions in more than 0.5 percent of the North American population.

## Availability Requirements

AVL-1: The COS shall be available at least 98% of the time between 5:00 A.M. and midnight local time and at least 90% of the time between midnight and 5:00 A.M. local time, excluding scheduled maintenance windows.

## Robustness Requirements

ROB-1: If the connection between the user and the COS is broken prior to a new order being either confirmed or terminated, the COS shall enable the user to recover an incomplete order and continue working on it.

# Appendix A: Analysis Models

Figure 3 is a state-transition diagram that shows the possible meal order statuses and the allowed changes in status.

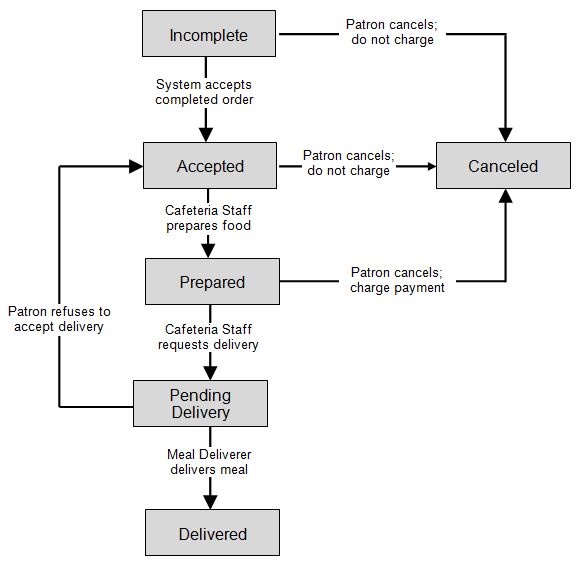
****

Figure 3. State-transition diagram for meal order status.