Software Requirements Specification

for

Cafeteria Ordering System

Version 1.1

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The Process Impact Company

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Revision History

Name	Date	Reason For Changes	Version
Karl Wiegers	10/21/2002	Initial draft	1.0 draft 1
Karl Wiegers	11/4/2002	Baseline following changes after inspection	1.0 approved
Sheldon Linker	12/19/2018	Modernized	1.1

Usage is correct here, but a common mistake is to start your document with multiple lines in this table. There should be 1 line in this table for each version submitted. In real life, that's 1 line per version distributed.

1. Introduction

1.1 Purpose

This SRS describes the software functional and nonfunctional requirements for release 1.0 of the Cafeteria Ordering System (COS). This document is intended to be used by the members of the project team that will implement and verify the correct functioning of the system. Unless otherwise noted, all requirements specified here are high priority and committed for release 1.0.

1.2 Document Conventions

The Cafeteria Ordering System will permit Process Impact employees to order meals from the company cafeteria on-line to be delivered to specified campus locations. A detailed project description is available in *the Cafeteria Ordering System Vision and Scope Document* [1]. The section in that document titled "Scope of Initial and Subsequent Releases" lists the features that are scheduled for full or partial implementation in this release.

1.3 Intended Audience and Reading Suggestions

This document is for the entire product team, especially the project manager, developers, and QA personnel.

1.4 References

1. Wiegers, Karl. *Cafeteria Ordering System Vision and Scope Document*, www.processimpact.com/projects/COS/COS_vision_and_scope.doc
2. Wiegers, Karl. *Process Impact Intranet Development Standard, Version 1.3*, www.processimpact.com/corporate/standards/PI_intranet_dev_std.doc
3. Zambito, Christine. *Process Impact Business Rules Catalog*, www.processimpact.com/corporate/policies/PI_business_rules.doc
4. Zambito, Christine. *Process Impact Internet Application User Interface Standard, Version 2.0*, www.processimpact.com/corporate/standards/PI_internet_ui_std.doc

Note that when you reference documents, I am going to check them. All of your references should be real, related, and accessible. There should be a reference to the initiating document. For our purposes, that's the class assignment link. In real life, that would be a PO or internal memorandum.

2. Overall Description

2.1 Product Perspective

The Cafeteria Ordering System is a new system that replaces the current manual and telephone processes for ordering and picking up lunches in the Process Impact cafeteria. 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 restaurants and to credit and debit card authorization services. Note that the capitalization here is exactly correct. The first words of sentences, proper names, and explicitly defined terms are capitalized, and nothing else.

2.2 Product Features

The following shows the product features in list form, and how they fit together.

- Order Meals
- Create, View, Modify, and Delete Meal Subscriptions
- Register for Meal Payment Options
- Request Meal Delivery
- Create, View, Modify, and Delete Cafeteria Menus
- Create, View, Modify, and Delete Inventory Values

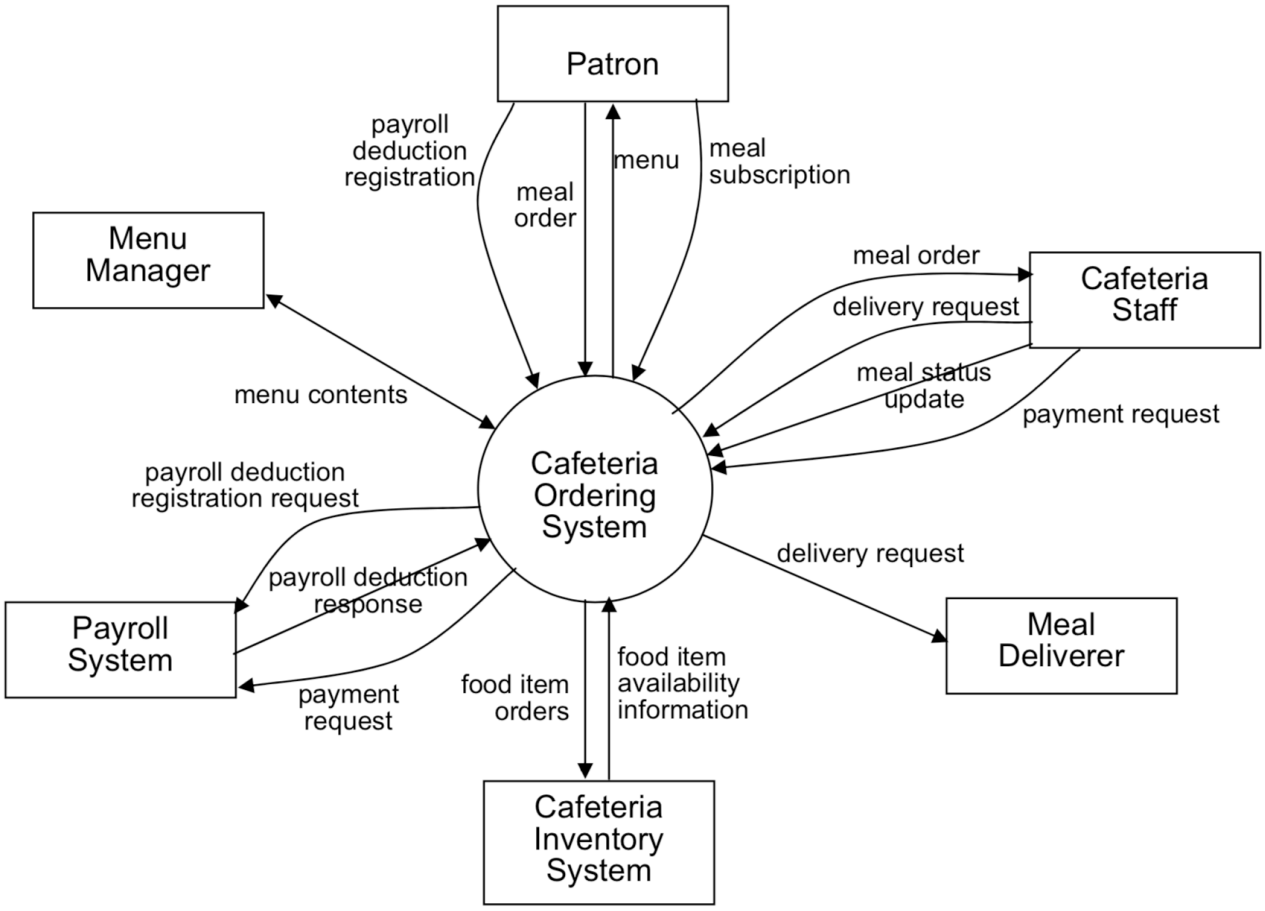

Figure 1

Here, the picture would have been a bit better if items representing people, functions, and external systems each had different shapes.

2.3 User Classes and Characteristics

Patron (favored) A Patron is a Process Impact employee at the corporate campus in Clackamas, Oregon, who wishes to order meals to be delivered from the company cafeteria. There are about 600 potential Patrons, of which an estimated 400 are expected to use the Cafeteria Ordering System an average of 4 times per week each (source: current cafeteria usage data). Patrons will sometimes order multiple meals for group events or guests. An estimated 90 percent of orders will be placed using the corporate Intranet, with 10 percent of orders being placed from home. All Patrons have Intranet access from their offices. Some Patrons will wish to set up meal subscriptions, either to have the same meal to be delivered every day or to have the day's meal special delivered automatically. A Patron must be able to override a subscription for a specific day.

Cafeteria Staff The Process Impact cafeteria currently employs about 20 Cafeteria Staff, who will receive orders from the Cafeteria Ordering System, prepare meals, package them for delivery, print delivery instructions, and request delivery. Most of the Cafeteria Staff will need to be trained in the use of the computer, the Web browser, and the Cafeteria Ordering System.

Menu Manager The Menu Manager is a cafeteria employee, perhaps the cafeteria manager, who is responsible for establishing and maintaining daily menus of the food items available from the cafeteria and the times of day that each item is available. Some menu items may not be available for delivery. The Menu Manager will also define the cafeteria's daily specials. The Menu Manager will need to edit the menus periodically to reflect planned food items that are not available or price changes.

Meal Deliverer As the Cafeteria Staff prepare orders for delivery, they will print delivery instructions and issue delivery requests to the Meal Deliverer, who is either another cafeteria employee or a contractor. The Meal Deliverer will pick up the food and delivery instructions for each meal and deliver it to the Patron. The Meal Deliverers' primary interactions with the system will be to reprint the delivery instructions on occasion and to confirm that a meal was (or was not) delivered.

2.4 Operating Environment

OE-1: The Cafeteria Ordering System shall operate with the following Web browsers: Microsoft Internet Explorer versions 5.0 and 6.0, Netscape Communicator version 4.7, and Netscape versions 6 and 7. Note that this document was done in 2002. This list, and a lot of what's presented in §2, is obsolete. I've left it this way as an example of things to be careful about when doing your research. A modern list would replace Netscape with Firefox, include Chrome and Safari, and update the version numbers. Similar obsolescence is true of some other items in §2. Check your facts and best practices before I do. **Don't blindly copy.**

OE-2: The Cafeteria Ordering System shall operate on a server running the current corporate approved versions of Red Hat Linux and Apache Web Server. Note that this is specific to the Process Impact company. If you include any OS or language criteria, I expect it to be specific to the company you're talking about, or have a reason stated as to why you're making such a restriction. The same is true for some of the other items in §2. **Don't blindly copy.**

OE-3: The Cafeteria Ordering System shall permit user access from the corporate Intranet and, if a user is authorized for outside access through the corporate firewall, from an Internet

connection at the user's home. Again, note that OE-3 is specific to the Process Impact company. If you have something like this, it should be specific to your customer or company. The same is true for some of the other items in §2. **Don't blindly copy.**

2.5 Design and Implementation Constraints

CO-1: The system's design, code, and maintenance documentation shall conform to *the Process Impact Intranet Development Standard, Version 1.3* [2]. (Real reference warning applies)
CO-2: The system shall use the current corporate standard Oracle database engine. (Company specific and need-to-state warnings apply)
CO-3: All HTML code shall conform to the HTML 4.0 standard. (Obsolescence warning applies)
CO-4: All scripts shall be written in Perl. (Company specific and need-to-state warnings apply)

2.6 User Documentation

UD-1: The system shall provide an online hierarchical and cross-linked help system in HTML that describes and illustrates all system functions.
UD-2: The first time a new user accesses the system and on user demand thereafter, the system shall provide an online tutorial to allow users to practice ordering meals using a static tutorial menu. The system shall not store meals ordered using this template in the database or place orders for such meals with the cafeteria.

2.7 Assumptions and Dependencies

AS-1: The cafeteria is open for breakfast, lunch, and dinner every company business day in which employees are expected to be on site.
DE-1: The operation of the COS depends on changes being made in the Payroll System to accept payment requests for meals ordered with the COS.
DE-2: The operation of the COS depends on changes being made in the Cafeteria Inventory System to update the availability of food items as COS orders are accepted.

3. System Features

3.1 Order Meals

Given that a user is already registered (see below) and menus are created (see below), this function allows a registered user to order from a menu, either for dine-in or delivery (see below).

3.2 Create, View, Modify, and Delete Meal Subscriptions

Details not provided in this example

3.3 Register for Meal Payment Options

Details not provided in this example

3.4 Request Meal Delivery

Details not provided in this example

3.5 Create, View, Modify, and Delete Cafeteria Menus

Details not provided in this example

3.6 Create, View, Modify, and Delete Inventory Values

Details not provided in this example

4. External Interface Requirements

4.1 User Interfaces Overview

UI-1: The Cafeteria Ordering System screen displays shall conform to *the Process Impact Internet Application User Interface Standard, Version 2.0* [4]. (Reference warning applies)

UI-2: The system shall provide a help link from each displayed HTML page to explain how to use that page.

4.2 Hardware Interfaces

No hardware interfaces have been identified. When you have a section that doesn't really apply, you have choices: (a) do it like this, (b) use "N/A", or (c) just leave the section out entirely, but make sure that you don't mess up your numbering.

4.3 Software Interfaces

4.3.1 Interface between the COS and the 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.

4.3.2 Interface between the COS and the 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 for payroll deduction.

SI-2.2: To allow a Patron to unregister for payroll deduction.
SI-2.3: To check whether a patron is registered 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.

4.4 Communications Interfaces

CI-1: The Cafeteria Ordering System shall send an eMail message to the Patron to confirm acceptance of an order, price, and delivery instructions.
CI-2: The Cafeteria Ordering System shall send an eMail message to the Patron to report any problems with the meal order or delivery after the order is accepted.

5. System Features/Modules

5.1 Order Meals

5.1.1 Description and Priority

A cafeteria Patron whose identity has been verified may order meals either to be delivered to a specified company location or to be picked up in the cafeteria. A Patron may cancel or change a meal order if preparation has not started on it. Priority = High.

5.1.2 Stimulus/Response Sequences

Stimulus: A logged-on patron clicks on "Place an Order".
Response: The system displays the current menu (see menu set-up section below), with fields for meal details, payment, and delivery options.

Stimulus: The user enters valid field data.
Response: The web page enables the "Order" button.

Stimulus: The user clicks on "Order".
Response: The system notifies a food preparer of the order, and notifies the patron that the order has been placed, and enables order cancellation and edit.

Stimulus: The food preparer accepts the order.
Response: The system shows the order on the to-be-prepared list, visible to the food preparers.

Stimulus: The food preparer rejects the order, including a rejection reason.
Response: The system notifies the patron, and disables the "Cancel" and "Edit" buttons.

Stimulus: The user clicks on "Cancel".
Response: The system notifies a food preparer of the cancellation, and notifies the patron that the order has been canceled, and disables order cancellation.

Stimulus: The user clicks on "Edit".
Response: The system performs the "cancellation" function as described above, and returns the user to the ordering screen, with the previous data in place.

Stimulus: The food preparer clicks on "Started".
Response: The system disables the patron's "Cancel" and "Edit" buttons.

Stimulus: The food preparer clicks on "Complete".
Response: The system notifies patron of the completion, and notifies server or deliverer that the order is ready, depending on delivery instructions. Charging and inventory actions happen as specified in those modules as described below.

5.1.3 Functional Requirements

First, we show requirements that directly mimic the stimulus/response pairs:

REQ-1.1: Upon a logged-in patron clicking on "Place and Order", the system shall display the current menu (see menu set-up functions below), with fields for meal details, payment, and delivery options.

REQ-1.2: As the user enters data and transitions from missing or invalid data to valid data, the web page, under script control, shall enable the "Order" button when data is ready to transmit, and disable when not.

REQ-1.3 When the user clicks "Order", the system shall (a) notify a food preparer of the order, (b) notify the patron that the order has been placed, and (c) enable order cancellation and edit.

REQ-1.4 If and when the food preparer accepts the order, the system shall show the order on the to-be-prepared list visible to the food preparers.

REQ-1.5 If and when the food preparer rejects the order (including a rejection reason), the system shall notify the patron and disable the "Cancel" and "Edit" buttons.

REQ-1.6 If and when the patron clicks "Cancel", the system shall (a) notify a food preparer of the cancellation, (b) remove the item from the to-be-prepared list, and (c) disable the "Cancel" and "Edit" buttons.

REQ-1.7 If and when the patron clicks "Edit", the system shall (a) perform cancellation as described in REQ-1.6, and (b) return the patron to the ordering page, with the previous order data in place.

REQ-1.8 When the food preparer clicks on "Started", the system shall disable the patron's "Cancel" and "Edit" buttons.

REQ-1.9 When the food preparer clicks on "Complete", the system shall (a) notify the patron and server or deliverer (as appropriate to the order) that the order is complete and ready for delivery, and (b) initiate charging and delivery as appropriate, and as described in §5.3 and 5.5, respectively.

Next, any additional requirements needed, if any, which are not directly indicated by stimulus/response pairs, are added here:

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REQ-1.10 As a part of order placement, the system shall present date and time options to the patron. The default date shall be listed as "Today", and the default time shall be listed as "Now".

REQ-1.11 When an order is placed and accepted, if the date and time are in the future (as opposed to the default, present), then moving the order to the to-be-prepared list shall be delayed until the appropriate time, as calculated by the later of the current time and the delivery time advanced by the preparation time.

REQ-1.12 The system shall not accept orders for times outside of operating hours.

REQ-1.13 The system shall verify that the delivery location, if specified, is within the service area, and reject the order if not.

REQ-1.14 The system shall verify that sufficient delivery resources are available, and if not, shall not present the delivery option.

REQ-1.15 The system shall present the menu or menus which are marked as being for the appropriate date and time of day.

REQ-1.16 In presenting the menu items, the system shall grey out and disable items which are out of stock.

REQ-1.17 For each orderable item, the system shall present a Quantity field, defaulted to 0.

REQ-1.18 The Quantity field shall maintain a limit check, with a general maximum a patron is allowed to order of an item, limited to the quantity on hand.

REQ-1.19 When an order is accepted, the system shall communicate the change in inventory levels to the inventory system, as described in §5.6.

5.2 Create, View, Modify, and Delete Meal Subscriptions

Details not provided in this example

5.3 Register for Meal Payment Options

Details not provided in this example

5.4 Request Meal Delivery

Details not provided in this example

5.5 Create, View, Modify, and Delete Cafeteria Menus

Details not provided in this example

5.6 Create, View, Modify, and Delete Inventory Values

Details not provided in this example

6. Nonfunctional Requirements

6.1 Performance

NF-1.1 The system shall accommodate 400 users during the peak usage time window of 8am to 10am local time, with an estimated average session duration of 8 minutes. If you're doing a system for which the concept of local time applies, then something like this would be appropriate. If not, think about what *is* appropriate.

NF-1.2 All web pages generated by the system shall be generated and displayable within 5s, using picture placeholders until pictures are available. ("IMG" image tags shall use the "ALT" field.)

6.2 Safety

No safety requirements have been identified.

6.3 Security

NF-3.1: All network transactions between the patron and the system shall use HTTPS protocol.
NF-3.2: All service-to-service interfaces that carry financial or log-in information shall be encrypted, using the highest encryption standard available for that service. Any new service shall use at least 128-bit encryption.
NF-3.3 The system shall require users to log into the COS for all operations except viewing a menu. Note that this says "The system shall require users to". That places the requirement on the system. We don't use "Users shall" on its own, because we can't drop a "shall" on users.
NF-3.4 The system shall permit only cafeteria staff members on the list of authorized menu managers to create or edit menus.
NF-3.5 Only users who have been authorized for home access to corporate internet may use the COS from outside locations. Be careful here. Before you include something like this, be sure it's appropriate to what you're doing.
NF-3.6 The system shall permit patrons to view only their own previously placed orders, not orders placed by other patrons.

6.4 Quality

NF-4.1: The COS shall be available to users on the corporate internet and to external users 99.9% of the time between 5am and midnight, local time, and 95% of the time between midnight and 5am local time. A number of the gotchas I previously mentioned appear in this requirement.
NF-4.2: If the connection between the patron and the system is broken prior to an order being either accepted or cancelled, the COS shall enable the patron to recover an incomplete order.