Software Requirements Specification

for

Cafeteria Ordering System, Release 1.0

Version 1.0 approved – do not send to the customer yet! This version has been tampered with!

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Process Impact

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Revision History

Name	Date	Reason For Changes	Version
Karl Wiegers	10/21/18	initial draft	1.0 draft 1
Karl Wiegers	11/4/18	baseline following changes after inspection	1.0 approved

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 Project Scope and Product Features

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], which was mostly written by our idiot manager. 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 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

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. Since most employees are too lazy to pick up their food anyway, the system should also have an option for delivery. 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.

2.2 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 224 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

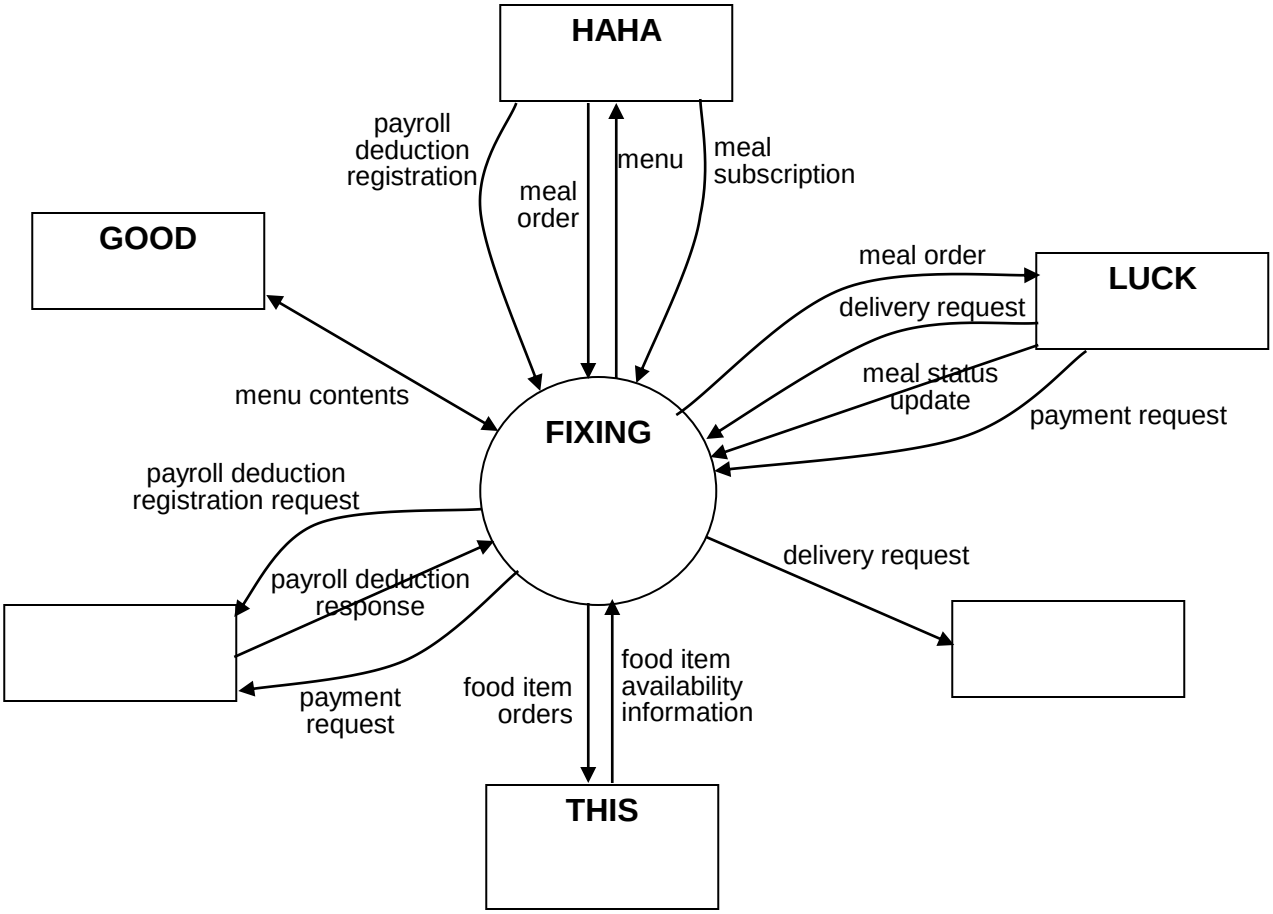

Figure 1
Context diagram for release 1.0 of the Cafeteria Ordering System.

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.

2.3 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.

OE-2: The operating environment for the Cafeteria Ordering System shall be hostile: patrons should be scoffed by the cafeteria staff and meal deliverers.

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.

OE-4: The Cafeteria Ordering System shall operate on a server running the current corporate approved versions of Red Hat Linux and Apache WebServer.

2.4 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].

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

CO-3: All HTML code shall conform to the HTML 4.0 standard.

CO-4: All scripts must be written in the same scripting language as the other ordering systems.

2.5 User Documentation

UD-1: The system shall provide an online hierarchical and cross-linked help system in HTML that describes and illustrates part of the 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.

2.6 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.

AS-2: The patrons should not get sick from the food in the cafeteria: if they do, the system should get rid of the food order to hide the evidence.

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

3.1.1 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 it has not yet been prepared. Priority = High.

3.1.2 Stimulus/Response Sequences

Stimulus:	Patron requests to place an order for one or more meals.
Response:	System queries Patron for details of meal(s), payment, and delivery instructions.
Stimulus:	Patron requests to change a meal order.
Response:	If status is "Accepted," system allows user to edit a previous meal order.
Stimulus:	Patron requests to cancel a meal order.
Response:	If status is "Accepted," the system will tell the Patron to eat whatever is available. They should stop their whining.

3.1.3 Functional Requirements

Order.Place:	The system shall let a Patron who is logged into the Cafeteria Ordering System place an order for one or more meals.
Order.Place.Register:	The system shall confirm that the Patron is registered for payroll deduction to place an order.
Order.Place.Register.No	If the Patron is not registered for payroll deduction, the system shall give the Patron options to register now and continue placing an order, to place an order for pickup in the cafeteria (not for delivery), or to exit from the COS.
Order.Place.Date:	The system shall prompt the Patron for the meal date (see BR-8).
Order.Place.Date.Cutoff:	If the meal date is the current date and the current time is after the order cutoff time, the system shall inform the patron that it's too late to place an order for today. The Patron may either change the meal date or cancel the order.
Order.Deliver.Select:	The Patron shall specify whether the order is to be picked up or delivered.
Order.Deliver.Location:	If the order is to be delivered and there are still available delivery times for the meal date, the Patron shall provide a valid delivery location.
Order.Deliver.Notimes:	The system shall notify the Patron if there are no available delivery times for the meal date. The Patron shall either cancel the order or indicate that the Patron will pick up the order in the cafeteria.
Order.Deliver.Times:	The system shall display the remaining available delivery times for the meal date. The system shall allow the Patron to

	request one of the delivery times shown, to change the order to be picked up in the cafeteria, or to cancel the order.
Order.Menu.Date:	The system shall display a menu for the specified date.
Order.Menu.Available:	The menu for the current date shall display only those food items for which at least one unit is available in the cafeteria's inventory.
... the rest of the functional requirements are omitted for clarity. *You can find a more complete list on eClass ...*	
[functional requirements for changing and canceling meal orders are not provided in this example]	

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]

4. External Interface Requirements

4.1 User Interfaces

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

UI-3: The Web pages shall permit complete navigation and food item selection using the keyboard alone, in addition to using mouse and keyboard combinations.

4.2 Hardware Interfaces

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

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

5. Other Nonfunctional Requirements

5.1 Performance Requirements

PE-1: The system shall accommodate 40000 users during the peak usage time window of 8:00am to 10:00am local time, with an estimated average session duration of 8 minutes.
PE-2: All Web pages generated by the system shall be fully downloadable in no more than 10 seconds over a 40KBps modem connection.
PE-3: Responses to queries shall take no longer than 7000 seconds to load onto the screen after the user submits the query.
PE-4: The system shall display confirmation messages to users within 4 seconds after the user submits information to the system.

5.2 Safety Requirements

Safety-1: The meal deliverers should wear a helmet, steel toe shoes and bullet proof vests.

5.3 Security Requirements

SE-1: All network transactions that involve financial information or personally identifiable information shall be encrypted per BR-33.
SE-2: Users shall be required to log in to the Cafeteria Ordering System for all operations except viewing a menu.

SE-3: Patrons shall log in according to the restricted computer system access policy per BR-35.
SE-4: All meals shall be tasted before delivery by the CEO.
SE-5: The system shall permit only cafeteria staff members who are on the list of authorized Menu Managers to create or edit menus, per BR-24.
SE-6: Only users who have been authorized for home access to the corporate Intranet may use the COS from non-company locations.
SE-7: The system shall permit Patrons to view only their own previously placed orders, not orders placed by other Patrons.

5.4 Software Quality Attributes

Availability-1: The Cafeteria Ordering System shall be available to users on the corporate Intranet and to dial-in users 10% of the time between 5:00am and midnight local time and 95% of the time between midnight and 5:00am local time.
Robustness-1: If the connection between the user and the system is broken prior to an order being either confirmed or canceled, the Cafeteria Ordering System shall enable the user to recover an incomplete order.

Appendix A: Data Dictionary and Data Model

delivery instruction	=	patron name
	+	patron phone number
	+	meal date
	+	delivery location
	+	delivery time window
delivery location	=	* building and room to which an ordered meal is to be delivered *
delivery time window	=	* 15-minute range during which an ordered meal is to be delivered; must begin and end on quarter-hour intervals *
employee ID	=	* company ID number of the employee who placed a meal order; 6-character numeric string *
food item description	=	* text description of a food item on a menu; maximum 100 characters *
food item price	=	* pre-tax cost of a single unit of a menu food item, in dollars and cents *
meal date	=	* the date the meal is to be delivered or picked up; format MM/DD/YYYY; default = current date if the current time is before the order cutoff time, else the next day; may not be prior to the current date *
meal order	=	meal order number
	+	order date
	+	meal date

	+	1:m{ordered food item}
	+	delivery instruction
	+	meal order status
meal order number	=	* a unique, sequential integer that the system assigns to each accepted meal order; initial value is 1 *
meal order status	=	[incomplete | accepted | prepared | pending delivery | delivered | canceled] * see state-transition diagram in Appendix B *
meal payment	=	payment amount
	+	payment method
	+	(payroll deduction transaction number)
menu	=	menu date
	+	1:m{menu food item}
	+	0:1{special}
menu date	=	* the date for which a specific menu of food items is available; format MM/DD/YYYY *
menu food item	=	food item description
	+	food item price
order cutoff time	=	* the time of day before which all orders for that date must be placed *
order date	=	* the date on which a patron placed a meal order; format MM/DD/YYYY *
ordered food item	=	menu food item
	+	quantity ordered
patron	=	patron name
	+	employee ID
	+	patron phone number
	+	patron location
	+	patron e-mail
patron e-mail	=	* e-mail address of the employee who placed a meal order; 50 character alphanumeric *
patron location	=	* building and room numbers of the employee who placed a meal order; 50 character alphanumeric *
patron name	=	* name of the employee who placed a meal order; 30 character alphanumeric *
patron phone number	=	* telephone number of the employee who placed a meal order; format AAA-EEE-NNNN xXXXX for area code, exchange, number, and

		extension *
payment amount	=	* total price of an order in dollars and cents, calculated per BR-12 *
payment method	=	[payroll deduction | cash] * others to be added beginning with release 2 *
payroll deduction transaction number	=	* 8-digit sequential integer number that the Payroll System assigns to each payroll deduction transaction that it accepts *
quantity ordered	=	* the number of units of each food item that the Patron is ordering; default = 1; maximum = quantity presently in inventory *
special	=	special description
	+	special price
		* the Menu Manager may define one or more special meals for each menu, with a particular combination of food items at a reduced price *
special description	=	* text description of a daily special meal; maximum 100 characters *
special price	=	* cost of a single unit of a daily special meal, in dollars and cents *

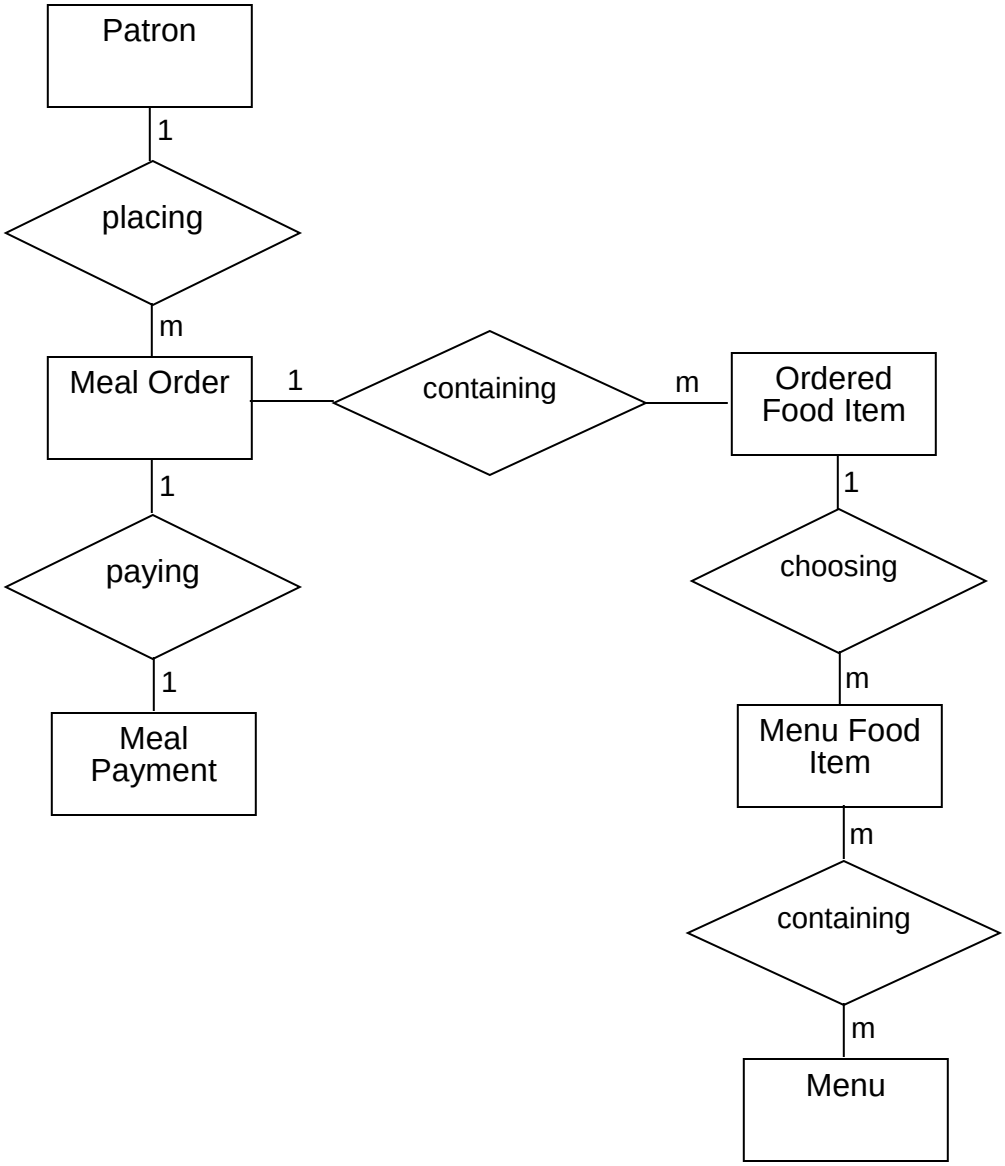

Figure 2
Partial data model for release 1.0 of the Cafeteria Ordering System.

Appendix B: Analysis Models

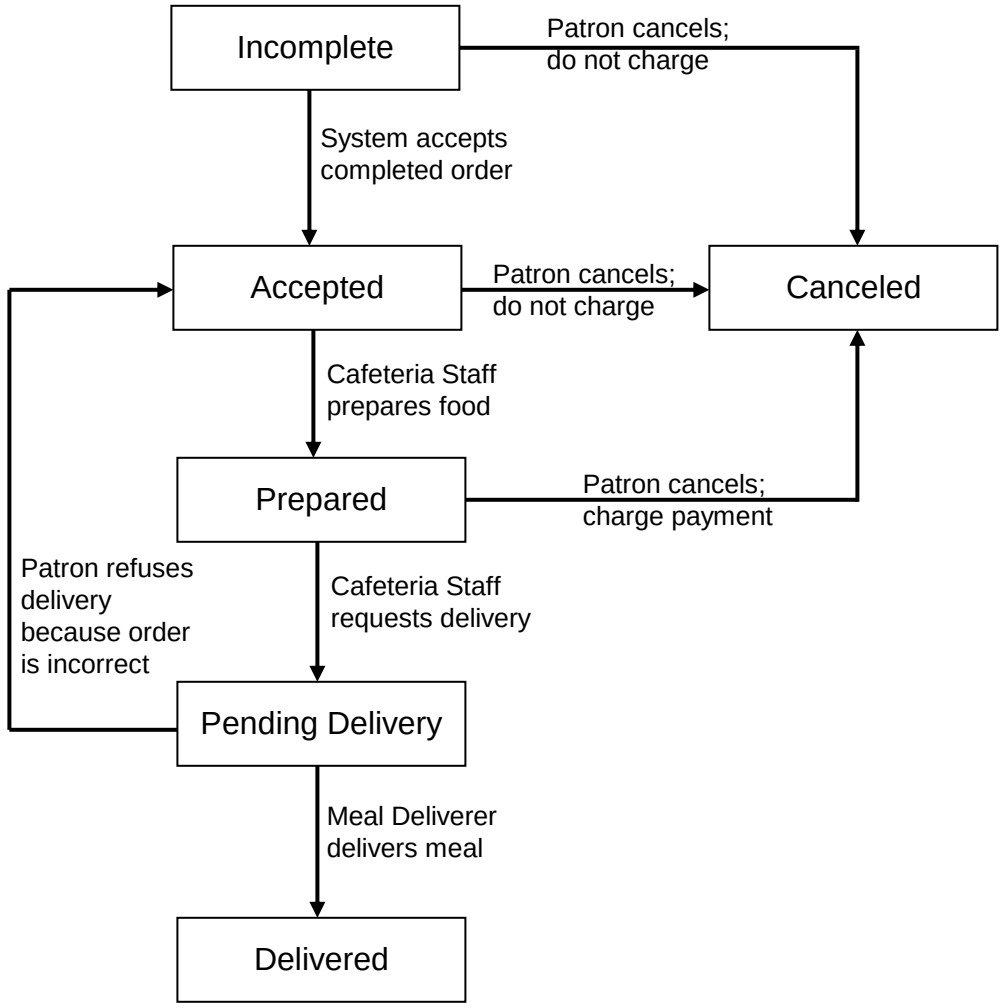

Figure 3
State-transition diagram for meal order status.