



**RIMS**

**Restaurant Inventory Management System**

ISDS 3100

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## **Executive Summary**

We at Inventory Management Solutions (IMS) propose an inventory management application designed for smart phones and tablets. This application will be specifically tailored for the restaurant industry. The proposed name of the application is Restaurant Inventory Management System, or RIMS for short. RIMS will be designed to accurately track the raw ingredients (inventory) in a restaurant and to assist the restaurant staff in ordering and maintaining proper inventory levels. The app will interact with an attached scanner or use the built-in camera to track inventory either by UPC codes or by a manual interface for items that do not possess UPC labeling. RIMS will use a connection with the internet to download initial product information and to email alerts to the owner. Alerts will be sent when inventory quantities are low or nearing a pre-determined expiration date. There will be a reporting system that enables users to see current and historical inventory levels to assist with forecasting inventory needs. There will be the ability to make a list of all inventory out-of-stocks and/or inventory below a recommended level. The system will use a local server set up either on one of the restaurant's computers or stored on the device to keep current inventory levels and prior inventory items, to reduce the dependence on IMS servers. For restaurants with multiple devices, data will sync between devices anytime an internet connection is available. There will be a desktop application identical to the mobile version to assist staff with updating their initial information and for managers to remotely view the restaurant's status.

The users of this product will be able to easily use established touch screen and smart phone technology which is designed to require little to no training. It can be used and understood by any employee in the restaurant, from managers to the kitchen staff. Every employee could potentially use the product, but it will have the security capabilities to allow just one employee update privileges while keeping other employees notified of current levels. The system will be most helpful for the user who is responsible for replenishing inventory, as it will present them with live, relevant information.

The target audience for our project is small restaurant owners. Although many larger restaurants have an inventory management system in place, many smaller restaurants do not have an easy, quick, and affordable way to accurately track and manage inventory. They instead keep imprecise inventory by hand or on a computer spreadsheet. This leaves open the possibility of human error, food theft, and inefficient use of goods. This is a very time consuming process, requiring constant double-checking and adjustments. Many of the inventory management systems that are on the market are catered towards larger establishments and chain restaurants, and are cost-prohibitive and impractical for small businesses. Our research has shown that most restaurants believe they will benefit from a live perpetual inventory management system, and we plan on developing a system that is both efficient and easy to learn. Our project will appeal to these small restaurants because it utilizes technology that the user already has and will be affordable for even the smallest restaurant.

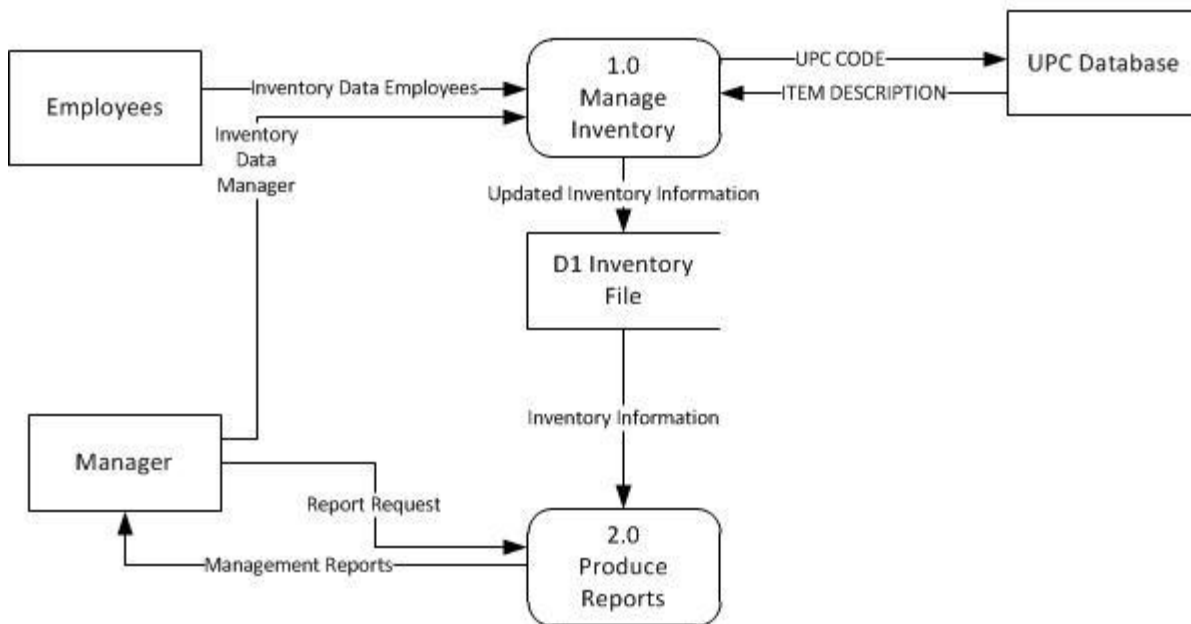
## Contents

<b>Executive Summary .....</b>	<b>2</b>
<b>Level-0 DFD .....</b>	<b>4</b>
<b>Level-1 DFD.....</b>	<b>5</b>
<b>Functional and Nonfunctional Requirements.....</b>	<b>6</b>
<i>Functional Requirements.....</i>	<i>6</i>
1 Inventory Management.....	6
2 Inventory Reports .....	6
<i>Nonfunctional Requirements.....</i>	<i>6</i>
1 Operational .....	6
2 Performance .....	6
3 Security .....	6
4 Cultural and Political.....	6
<b>Use Case Diagram.....</b>	<b>7</b>
<b>Use Case Narratives .....</b>	<b>8</b>
<b>Program Screen Shots.....</b>	<b>11</b>
<b>Context Level Diagram .....</b>	<b>13</b>
<b>Activity Diagram.....</b>	<b>14</b>

# Level-0 DFD

## RESTAURANT INVENTORY MANAGEMENT SYSTEM AKA RIMS LEVEL 0 DFD

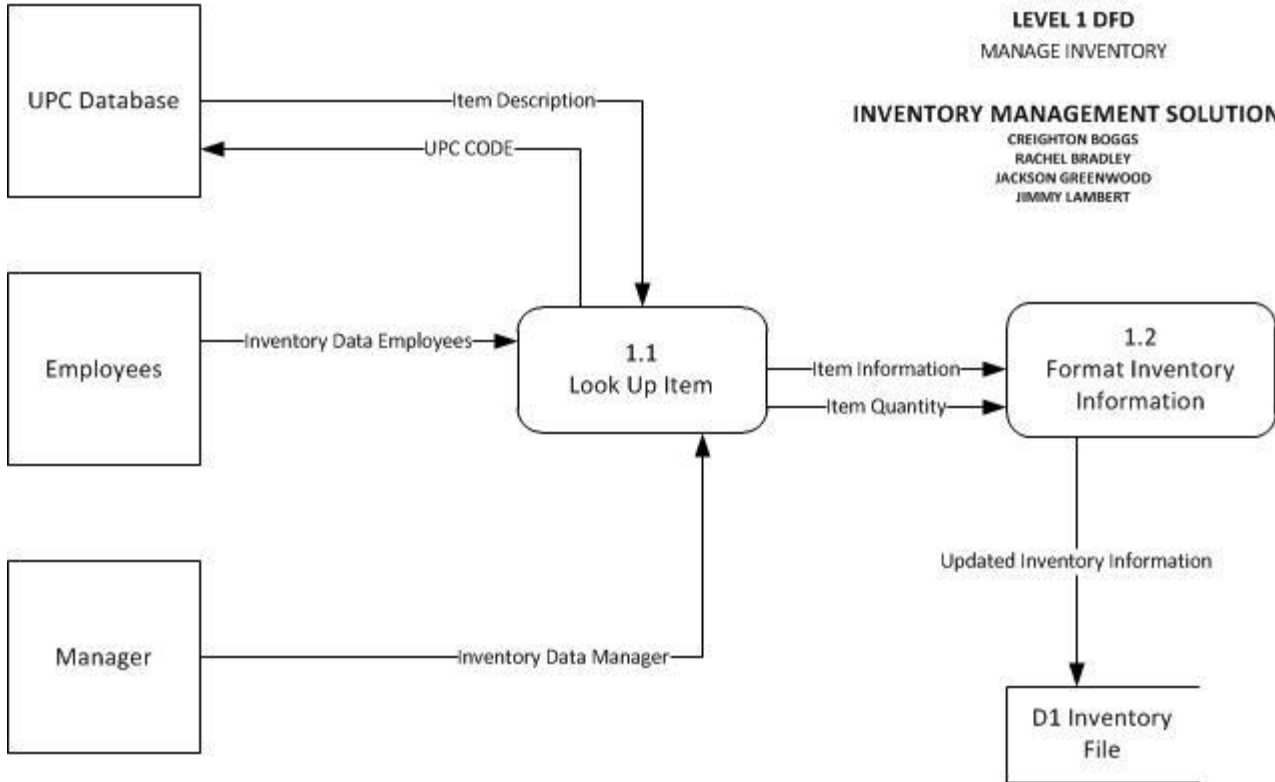
INVENTORY MANAGEMENT SOLUTIONS  
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# Level-1 DFD

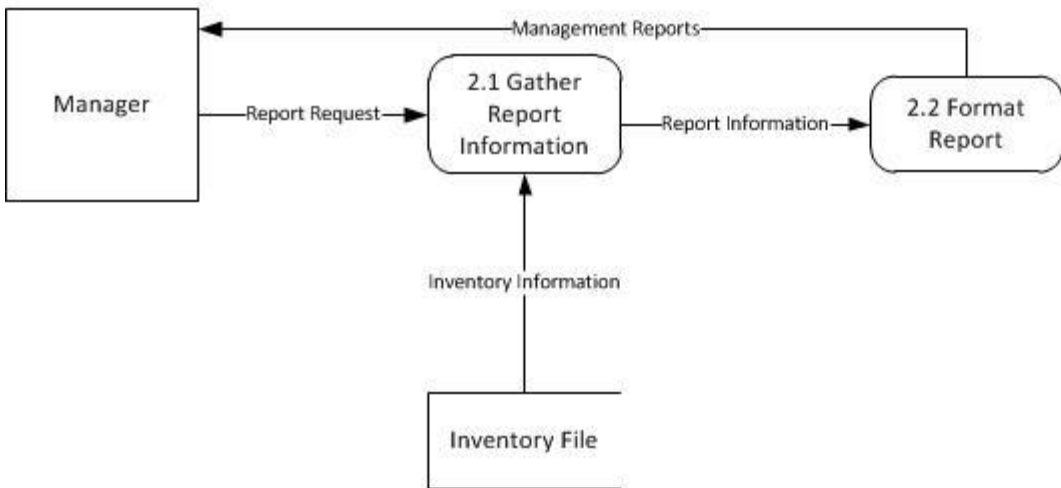
**RESTAURANT INVENTORY MANAGEMENT SYSTEM  
AKA RIMS  
LEVEL 1 DFD  
MANAGE INVENTORY**

**INVENTORY MANAGEMENT SOLUTIONS**  
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JIMMY LAMBERT



**RESTAURANT INVENTORY MANAGEMENT SYSTEM  
AKA RIMS  
LEVEL 1 DFD  
PRODUCE REPORTS**

**INVENTORY MANAGEMENT SOLUTIONS**  
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# **Functional and Nonfunctional Requirements**

## **Functional Requirements**

### **1 Inventory Management**

- 1.1 The system will allow managers and employees to increase and decrease stock levels when the inventory is received.
- 1.2 The system will use an external UPC database to look-up and add new items to inventory
- 1.3 The system will allow managers and employees to add new items not found in an external UPC database to inventory

### **2 Inventory Reports**

- 2.1 The system will produce reports for managers showing current inventory level.
- 2.2 The system will allow the managers and employees to view inventory that is close to expiration.
- 2.3 The system will produce reports for managers showing inventory used by day.
- 2.4 The system will produce reports for managers showing inventory used by month.
- 2.5 The system will produce reports for managers showing inventory used since month beginning.
- 2.6 The system will produce email alerts for managers showing inventory close to running out.
- 2.7 The system will prepare a list of items needing to be reordered.

## **Nonfunctional Requirements**

### **1 Operational**

- 1.1 The system should run on tablet PCs placed next to where inventory is stored.
- 1.2 The system should run on web browser used by manager.
- 1.3 The system should run on mobile phones to be used when purchasing.
- 1.4 The system should work with scanner attachments.
- 1.5 The system should work with internal cameras in devices.

### **2 Performance**

- 2.1 The system should support a staff of 20 kitchen staff.
- 2.2 The system should back up to an inventory file any time an internet connection is present.

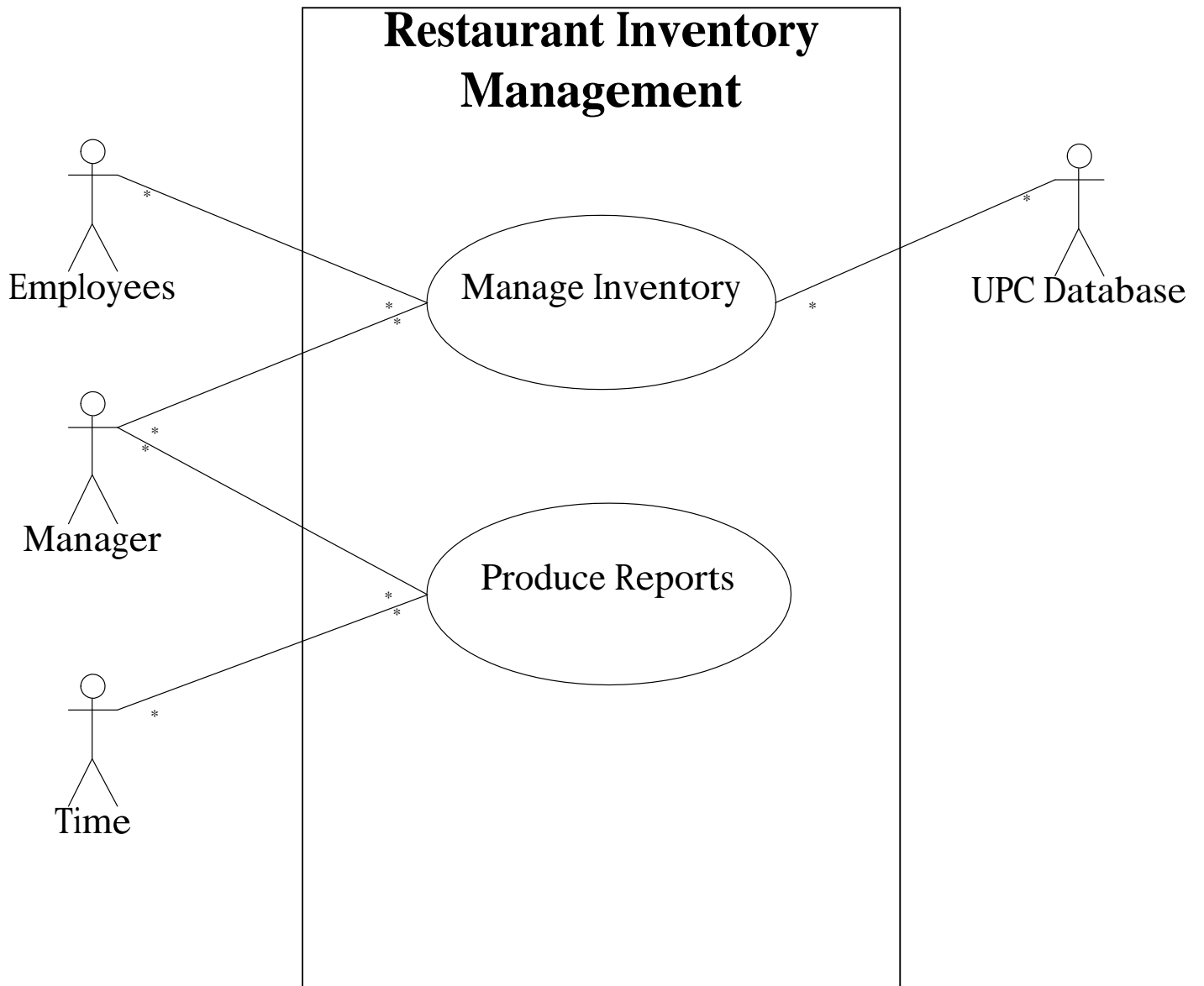
### **3 Security**

- 3.1 Any change in inventory is linked to an employee or manager.
- 3.2 Employees and managers are required to log in with a secure four digit code.
- 3.3 Managers can set up who is able to view certain reports and who can change inventory levels.

### **4 Cultural and Political**

- 4.1 Measure in either Empirical or Metric Standard.

# Use Case Diagram



# Use Case Narratives

## Restaurant Inventory Management

Author (s): Jackson Greenwood

Date: March 7, 2012

Version: 1

<b>USE CASE NAME:</b>	Manage Inventory	
<b>PRIMARY BUSINESS ACTOR:</b>	Employees or Manager	
<b>OTHER PARTICIPATING ACTORS:</b>	UPC Database	
<b>OTHER INTERESTED STAKEHOLDERS:</b>		
<b>DESCRIPTION:</b>	This use case describes the event of updating the inventory levels of the kitchen. The Inventory type and amount is validated. Once the product is scanned, it is either added or removed from inventory. On completion, the system returns to the home screen.	
<b>PRE-CONDITION:</b>	The party (employees or manager) updating inventory must have a logon ID.	
<b>TRIGGER:</b>	This use case is initiated when inventory is purchased or used.	
<b>TYPICAL COURSE OF EVENTS:</b>	<b>Actor Action</b>	<b>System Response</b>
	<b>STEP 1:</b> The party provides their logon id.	<b>STEP 2:</b> The system verifies the logon id is valid and displays the home screen.
	<b>STEP 3:</b> The party scans the item.	<b>STEP 4:</b> The system verifies the item is in inventory file and displays amount screen.
	<b>STEP 5:</b> The party verifies item to amount screen, inserts amount and selects whether to add or subtract from inventory, and then selects go.	<b>STEP 6:</b> The system updates product in inventory file and displays the home screen
	<b>STEP 7:</b> User starts from step 2 or presses logoff.	<b>STEP 8:</b> The system displays the lock screen
<b>ALTERNATE COURSES:</b>	<b>INVALID LOGON:</b> <b>ALT-STEP 2:</b> The system cannot verify logon ID, displays retry logon screen.	
	<b>PRODUCE OR DAMAGED UPC:</b> <b>ALT-STEP 3:</b> The party manually enters UPC or produce code.	
	<b>NO UPC/PRODUCE CODE:</b> <b>ALT-STEP 3.1:</b> The party selects "Enter Item Manually". <b>ALT-STEP 4.1:</b> The system displays Manual Item Entry screen. <b>ALT-STEP 3.2:</b> The party selects Food Group. <b>ALT-STEP 4.2:</b> The system returns Itemized list of inventory by food group. <b>ALT-STEP 3.3:</b> The party selects item Name to be updated. <b>ALT-STEP 4.3:</b> The party enters Quantity.	
	<b>FAILURE TO VARIFY ITEM IS IN Inventory file:</b> <b>ALT-STEP 4.1:</b> The system fails to verify the item is in inventory file. <b>ALT-STEP 4.2:</b> The system establishes connection with UPC Database and sends UPC code for look-up. <b>ALT-STEP 4.3:</b> UPC Database returns item information. <b>ALT-STEP 4.4:</b> The party enters Quantity. <b>OR</b> <b>ALT-STEP 4.3:</b> UPC Database fails to return item information. <b>ALT-STEP 4.4:</b> The system displays Food group menu screen. <b>ALT-STEP 4.5:</b> The party selects Food Group. <b>ALT-STEP 4.6:</b> The system returns Itemized list of inventory by food group. <b>ALT-STEP 4.7:</b> The party selects item Name to be updated. <b>ALT-STEP 4.8:</b> The party enters Quantity. <b>OR</b> <b>ALT-STEP 4.9:</b> The party selects Food Group. <b>ALT-STEP 4.10:</b> The party enters new item name. <b>ALT-STEP 4.11:</b> The party enters Quantity.	
	<b>ITEM IS NOT WHAT IS SHOWN ON AMOUNT SCREEN</b>	



	<p><b>ALT-STEP 5.1:</b> The party selects “Enter Item Manually”.</p> <p><b>ALT-STEP 5.2:</b> The system displays Manual Item Entry screen.</p> <p><b>ALT-STEP 5.3:</b> The party selects Food Group.</p> <p><b>ALT-STEP 5.4:</b> The system returns Itemized list of inventory by food group.</p> <p><b>ALT-STEP 5.5:</b> The party selects item Name to be updated.</p> <p><b>ALT-STEP 5.6:</b> The party enters Quantity.</p> <p><b>OR</b></p> <p><b>ALT-STEP 5.7:</b> The party selects “Enter Item Manually”.</p> <p><b>ALT-STEP 5.8:</b> The party selects Food Group.</p> <p><b>ALT-STEP 5.9:</b> The party enters new item name.</p> <p><b>ALT-STEP 5.10:</b> The party enters Quantity screen.</p>
<b>CONCLUSION:</b>	The use case concludes when the party returns to the lock screen.
<b>POST-CONDITION:</b>	The inventory has been updated and if any new inventory is encountered, the inventory file is updated.
<b>BUSINESS RULES</b>	
<b>IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS</b>	<ul style="list-style-type: none"> <li>• Tablet application to be provided to employees and manager for in restaurant use. Mobile application to be provided for manager for use during purchasing process.</li> </ul>
<b>ASSUMPTIONS:</b>	<p>The party will update new item inventory as it arrives.</p> <p>There will be an internet connection available or recent backup of inventory file on device.</p>
<b>OPEN ISSUES:</b>	

## Restaurant Inventory Management

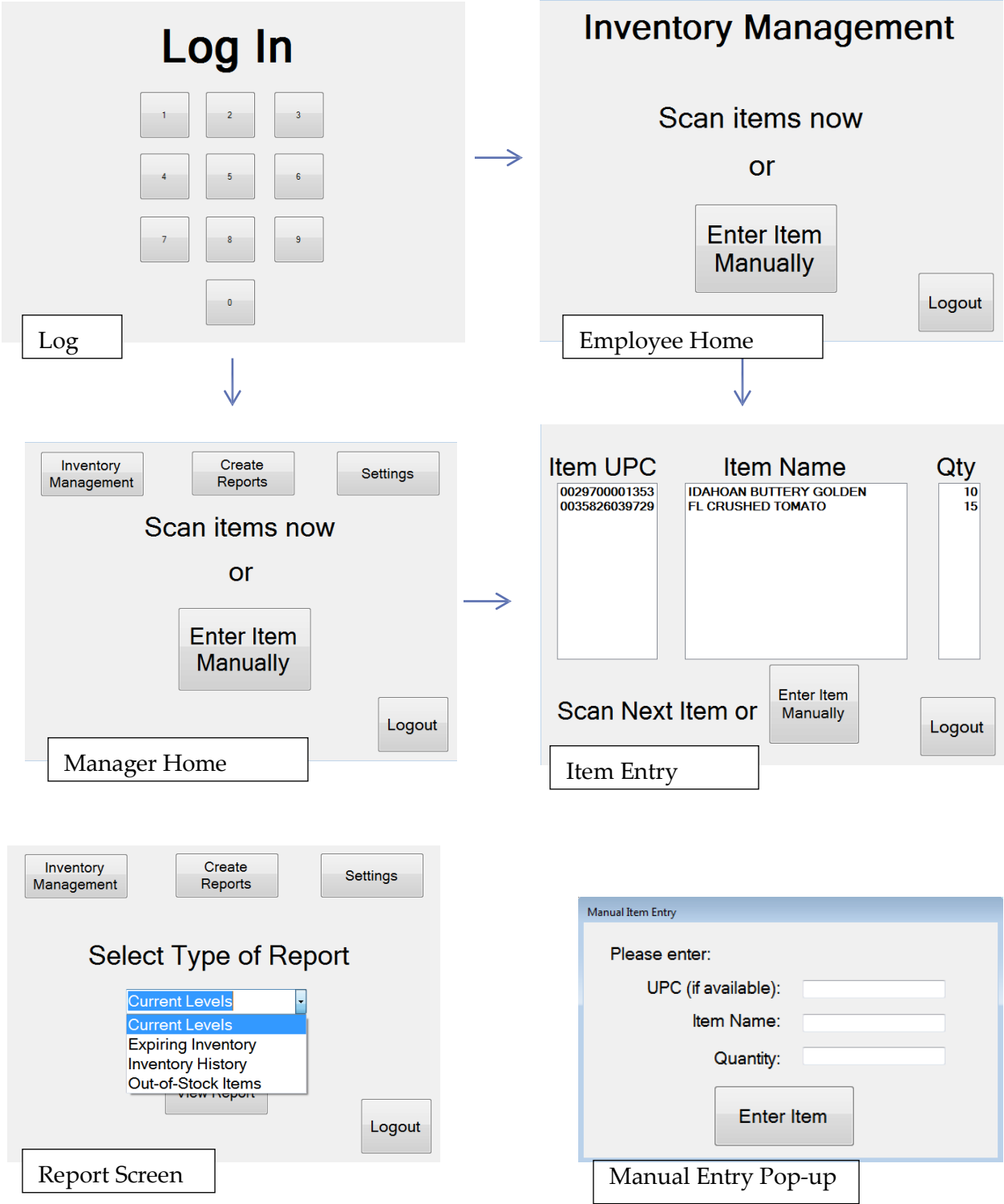
Author (s): Rachel Bradley

Date: March 8, 2012

Version: 1

<b>USE CASE NAME:</b>	<b>Produce Reports</b>	
<b>PRIMARY BUSINESS ACTOR:</b>	Manager	
<b>OTHER PARTICIPATING ACTORS:</b>	Time	
<b>OTHER INTERESTED STAKEHOLDERS:</b>	Employees Suppliers	
<b>DESCRIPTION:</b>	This use case describes the event of the restaurant manager producing reports from the system. Once the type of report is selected, alert emails for low or expiring inventory can be sent to the manager or other employees.	
<b>PRE-CONDITION:</b>	The person producing reports must be the manager or have the required security privileges.	
<b>TRIGGER:</b>	This use case is initiated when the "Reports" button is selected from the home screen.	
<b>TYPICAL COURSE OF EVENTS:</b>	<b>Actor Action</b>	<b>System Response</b>
	<b>Step 1:</b> The user logs in.	<b>Step 2:</b> The system verifies the user and displays the Inventory Management, Create Reports, and Settings buttons if the user is a manager.
	<b>Step 3:</b> The manager selects "Create Reports."	<b>Step 4:</b> The system Displays the Report Screen
	<b>Step 4:</b> The manager selects the type of report.	<b>Step 5:</b> The system accesses the inventory file and displays inventory reports.
<b>ALTERNATE COURSES:</b>	<b>Alt Step 1:</b> The manager has set the system to send automatic updates, so time is the actor.	
	<b>Alt Step 2:</b> The user is not a manager so cannot access the reporting tool.	
<b>CONCLUSION:</b>	The use case concludes when the manager logs out of the system.	
<b>POST-CONDITION:</b>	If the manager has checked to have automatic updates emailed to him, the system will begin sending updates.	
<b>BUSINESS RULES</b>	Only managers or employees with update privileges will see the "Report" tab when they log in.	
<b>IMPLEMENTATION CONTRAINTS AND SPECIFICATIONS</b>	Tablet application to be provided to employees and manager for in restaurant use. Mobile application to be provided for manager for use during purchasing process.	
<b>ASSUMPTIONS:</b>		
<b>OPEN ISSUES:</b>		

# Program Screen Shots



**Program Screen Shots (cont.)**

**Out-of-Stock Items**

Item UPC	Item Name
0029700001353 0035826039729	IDAHOAN BUTTERY GOLDEN FL CRUSHED TOMATO

Back Logout

A Report

Inventory Management Create Reports Settings

**Email Alerts for:**

- Expiring Items
- Low Stock Items

Edit Default Levels Edit Email Recipients Logout

Settings Screen

Default Levels

Enter UPC or Search by Name:

UPC	Name	Min Qty	Units
<input type="text"/>	<input type="text"/>	<input type="text"/>	lbs. ▾

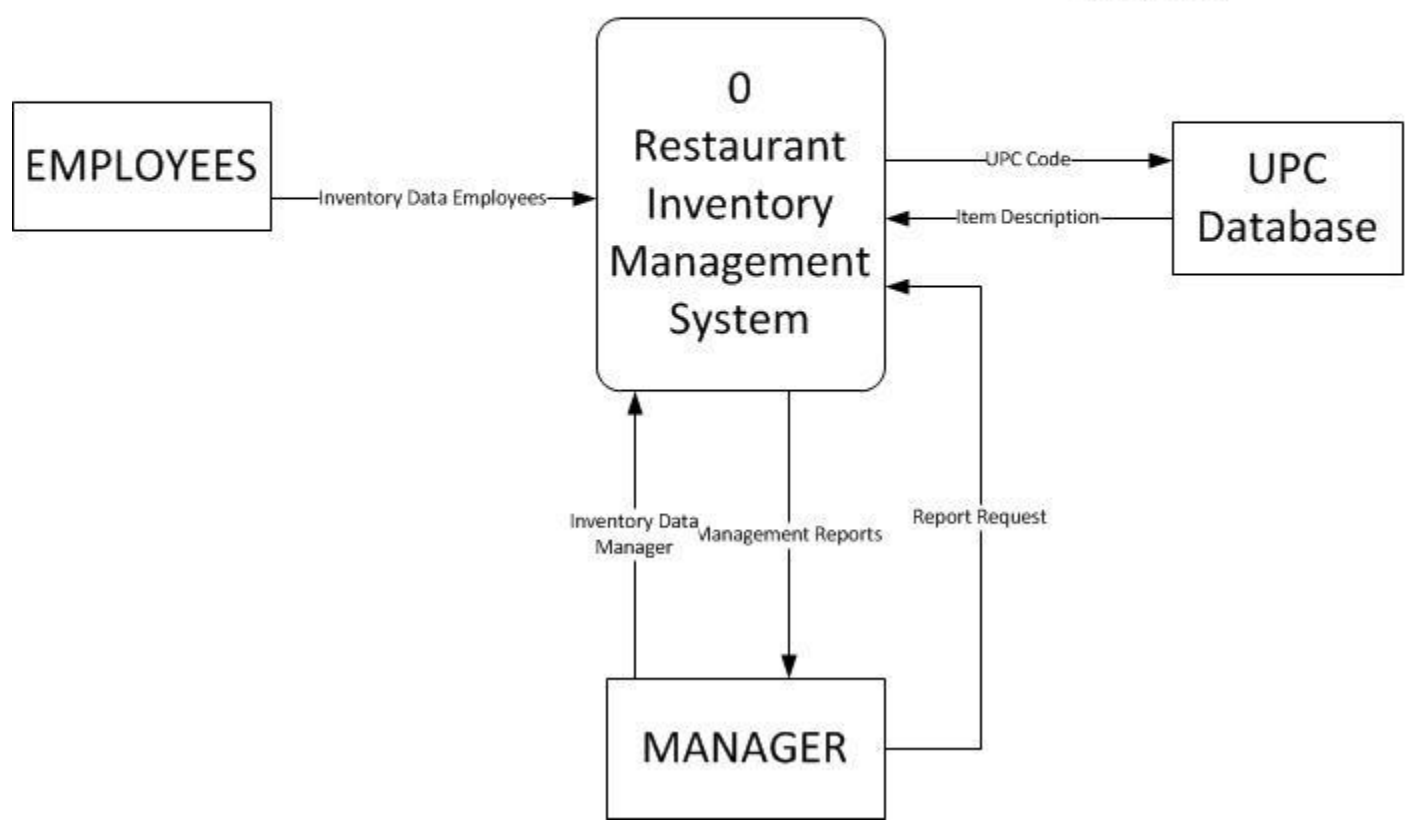
Save Cancel

Default Levels Pop-up

Context Level Diagram

**RESTAURANT INVENTORY MANAGEMENT SYSTEM  
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CONTEXT LEVEL DIAGRAM**

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# Activity Diagram

