Software Requirements Specification

for

Grocery Delivery System

Version 1.07 approved

Prepared by Sebastian Klemkosky(lmo120), Frank A. Idrogo (drs721), Russell Gardner (gct762), Iris Han (ymj140), Mason Fisher (rpz701)

<placeholder>

5/7/2021

Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Sebastian Klemkosky	2/28/2021	Starting work on the document	1.01
Sebastian Klemkosky	3/4/2021	Added some Functional Requirements and a partial use case diagram	1.02
Sebastian Klemkosky, Frank A. Idrogo, Mason Fisher, Russell Gardner, Iris Han	3/5/2021	Added more detail and depth to the document	1.03
Sebastian Klemkosky	4/24	Started on Shopper Class and added additional Document conventions (1.2)	1.04
Sebastian Klemkosky	4/25	Completed Functional requirements portion of all components of the system (3.5 to end). Added more constraints (2.5) Added Driver and Shopper to Product Functions (2.2)	1.05
Sebastian Klemkosky	5/4	Updated customer use case diagram and added home function	1.06
Sebastian Klemkosky	5/7	Final quick review and general edit to make this a better document	1.07

1.   Introduction

1.1   Purpose

The purpose of this document is to build a Grocery Delivery System (GDS 1.0) that enables the delivery of store groceries from a storage center to a local address.

1.2   Document Conventions

This document uses the following conventions

GDS	Grocery Delivery System
JavaFx	Software library for creating User Interfaces
MySQL	Open-source relational database system
Scene Builder	JavaFx Tool used to create GUI
GUI	Graphical User Interface

1.3   Intended Audience and Reading Suggestions

This project is a prototype for a system to deliver groceries, and it's being used only in a college setting. Under the guidance of a Professor, this project is being implemented. This project is useful for store managers as well as customers looking to purchase and have groceries delivered from the convenience of their home.

1.4   Product Scope

The purpose of the GDS is to provide a powerful and easy-to-use tool for store customers, shoppers, grocery store managers, storage maintainers, and delivery drivers to help them efficiently and securely involved in the grocery delivery process. Overall, we hope to provide a cheaper and more efficient way for customers to find the products they need.

1.5   References

2.   Overall Description

2.1   Product Perspective

Traditionally, people need to drive to grocery stores daily or weekly to buy food and other products and wait in queues at the cashiers. In the stores, people need to find what they need from lots of different products and sometimes cannot find the products. This can take a large portion of people's spare time, and sometimes people may not get the product they need in time. The Grocery Delivery system can largely solve the problem.

2.2   Product Functions

- Customers will be able to register an account, browse for products, put specific products in their virtual shopping cart, check out their products for delivery with them choosing a time range for them to receive their products and being able to track their products.
- The GDS will provide customers with weekly coupons, discount information, and ads, as well as updates the information of unchecked items in real-time. In addition, the GDS shall support financial billing issues features and give a digital receipt of the order to the customer.
- Store managers will have a portal to check and update the location and amount of different goods and record storage transactions. They can also monitor the freshness of goods and send out alerts when certain items are in short or about to go past their used-by date.
- Delivery Drivers will have a portal to track and be assigned their delivery orders. This includes the information necessary for them to complete them, for example an address and time period to drop off.
- Shoppers will have a portal to track and assign their orders. This includes the location of specific products, the truck to to drop off the order and other necessary information needed to complete their task.

2.3   User Classes and Characteristics

The GDS will have three main types of users, which are customers, store managers and drivers. Customers will have access to their own set of customer functions and store managers will have access to all customer functions as well as their own set of management functions.

- Customers
  - Register accounts
  - Search for products
  - Checkout products
  - Choose a time range for delivery
  - Track their delivery
  - Additional requests
- Store Managers
  - Check and update the location and amount of different goods
  - Record storage transactions
  - Monitor freshness of products
  - Order restocks
  - Status of active deliveries
  - Log of awaiting Orders
- Drivers
  - View assigned Order
  - Address for delivery
  - Delivery time slot
  - Confirmation of delivery

- Shopper
  - Location of items
  - Delivery truck to load
  - Confirmation of order/able to receive new Order
  - View assigned Order

2.4   Operating Environment

The operating environment for the GDS is listed below

- Operating System: Windows, iOS, Android

- Platforms: Mobile, Desktops

- Browsers: Chrome, Firefox, Safari, Edge

2.5   Design and Implementation Constraints

- Customers, Drivers, Shopper, and Store Managers will need to learn to navigate the GDS

- The location of specific products in the GDS must match where they are actually stored in the physical location. So organization of products must be uniform between storage facilities.

2.6   User Documentation

■   Store Managers will receive a digital guide to help them learn the system.
■   Customers and Drivers will, on first login, have to complete a 3 minutes tutorial on how to navigate this GDS software.
■   Shoppers will need to learn where specific products are located within a storage facility

2.7   Assumptions and Dependencies

Let us assume that the GDS is used for the following:

▪   A customer orders their products and chooses a time range for them to be delivered

▪   Drivers will receive a notice that they have been assigned a new order and location/time for the delivery

▪   The Store Manager will be alerted that a specific product is not out of stock and will look to restock it

Assuming that customers will now not be able to order any more of product that is out of stock then we have designed a system to able to show clearly to both store managers and customers that a product is no longer stocked

3.   Functional Requirements
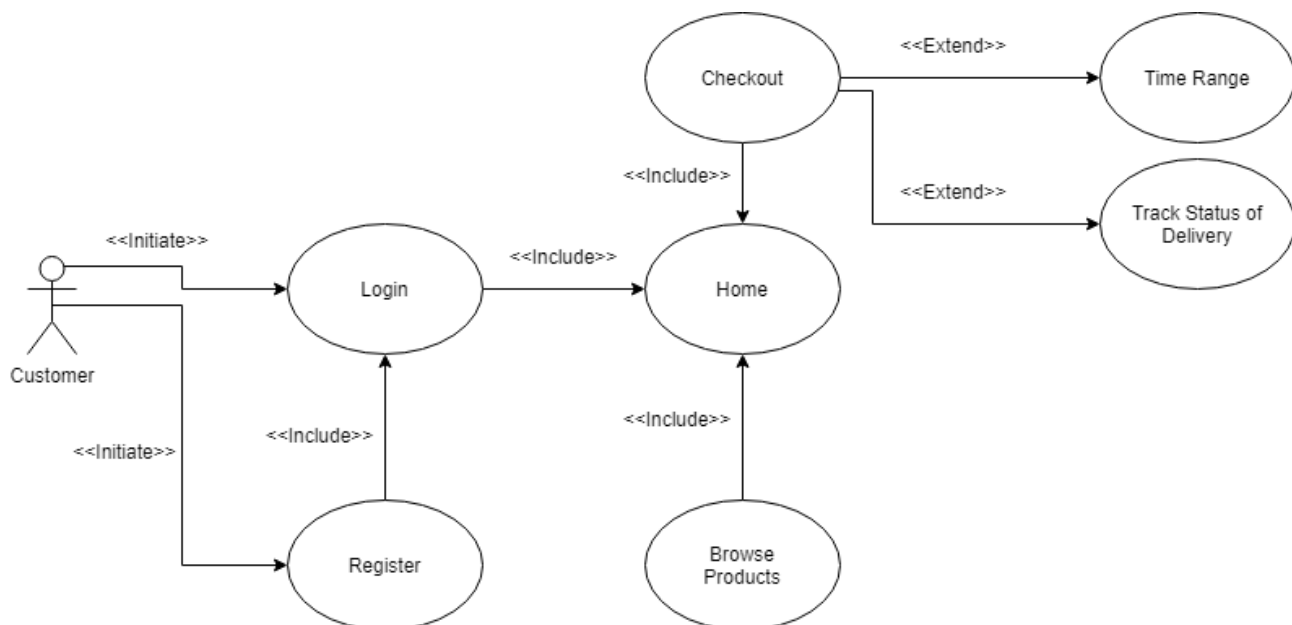
This Diagram shows only the Customer portion of the complete diagram. Sections 3.1 - 3.5 will cover these use cases individually

3.1   Register

3.1.1   Description and Priority

The register function will take in information from the customer and is of a high priority since other cases and their sub functions will be pulling and accessing data stored. Due to this the register function should be completed as soon as possible so that when working on the other cases we can run tests using pseudo information from the register function.

3.1.2   Link to Product Functions (in 2.2)

3.2   Checkout

3.2.1   Description and Priority

The Checkout function will allow customers to actually purchase their goods to be delivered. The function is of high priority as it is a needed feature of the system that couldn't function properly without. The checkout function will use information pulled from the register function in order to process some orders. The checkout function will also have a few subcases tied to it.

3.2.2   Link to Product Functions (in 2.2)

3.3   Time Range

3.3.1   Description and Priority

The Time Range function is a subcase of the checkout function and is of low priority. This function will allow customers to schedule a specific date and time for when their goods can be delivered.

3.3.2   Link to Product Functions (in 2.2)

3.4   Track Status of Delivery

3.4.1   Description and Priority

The Track Status of Delivery function is a subcase of the checkout function and is of low priority. This function will allow customers to track the status of their order and it's delivery.
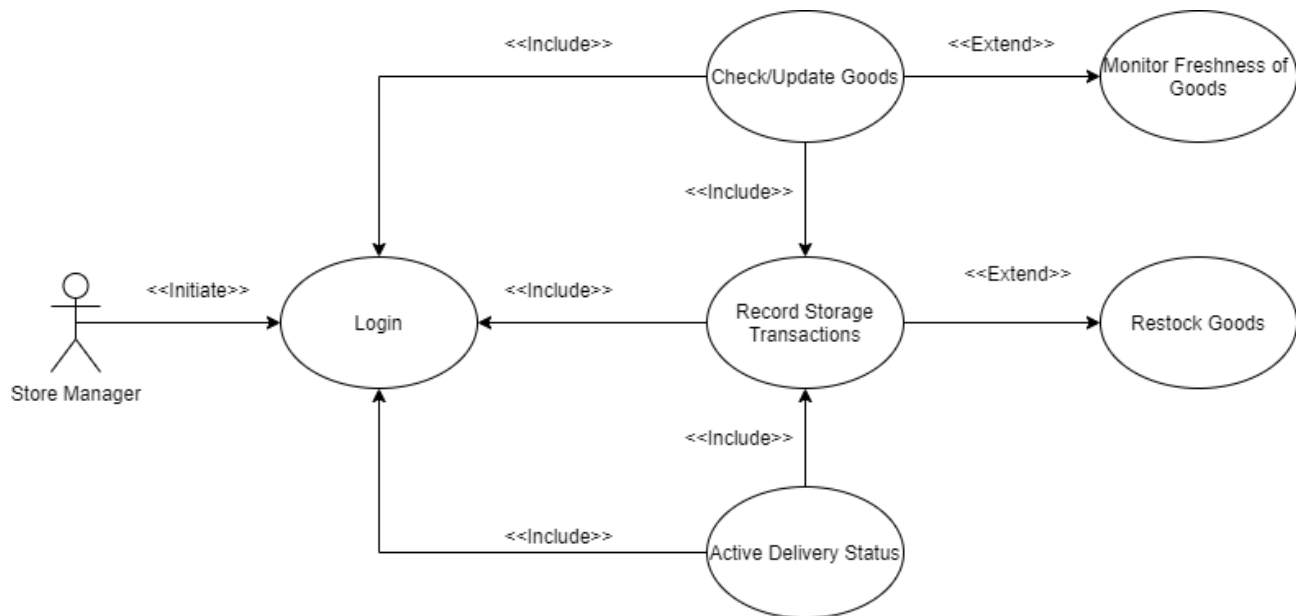
3.4.2   Link to Product Functions (in 2.2)

3.5   Home

3.5.1   Description and Priority

The home function is of high priority as it will serve as the central hub of the customer's experience and they will navigate through it to the other functions.

3.5.2   Link to Product Functions (in 2.2)

This Diagram shows only the Store Manager portion of the complete diagram. Sections 3.6 - 3.11 will cover these use cases individually

3.6   Login (Store Manager)

3.6.1   Description and Priority

The Login function is of high priority as it allows for Store Managers access to the entire GDS. This function is accessed by login information already given by GDS itself and only disclosed to Store Managers.

3.6.2 Link to Product Functions (in 2.2)

3.7   Record Storage Transactions

3.7.1   Description and Priority

The Record Storage Transactions is a high priority as it will show valuable information to the Store Manager. This function will also be accessed by multiple other functions in used in this portion of the GDS

3.7.2 Link to Product Functions (in 2.2)

3.8   Check/Update Goods

3.8.1   Description and Priority

The Check/Update Goods is of medium priority as it will allow Storage Manager to Check and Update their products. This function will use information pulled from Record Storage Transactions and send information back.

3.8.2 Link to Product Functions (in 2.2)

3.9   Monitor Freshness of Goods

3.9.1   Description and Priority

The Monitor Freshness of Goods function is a subcase of Check/Update Goods. This function will allow Storage Manager to check if their products are past their sell date and send alerts if a product is close to expiration.

3.9.2 Link to Product Functions (in 2.2)

3.10   Restock Goods

3.10.1   Description and Priority

The Restock Goods function is a subcase of Record Storage Transactions. This function will allow Store Managers to restock goods by either manually searching and ordering specific goods or if a product is popular enough the manager can set restock dates to automatically order them.
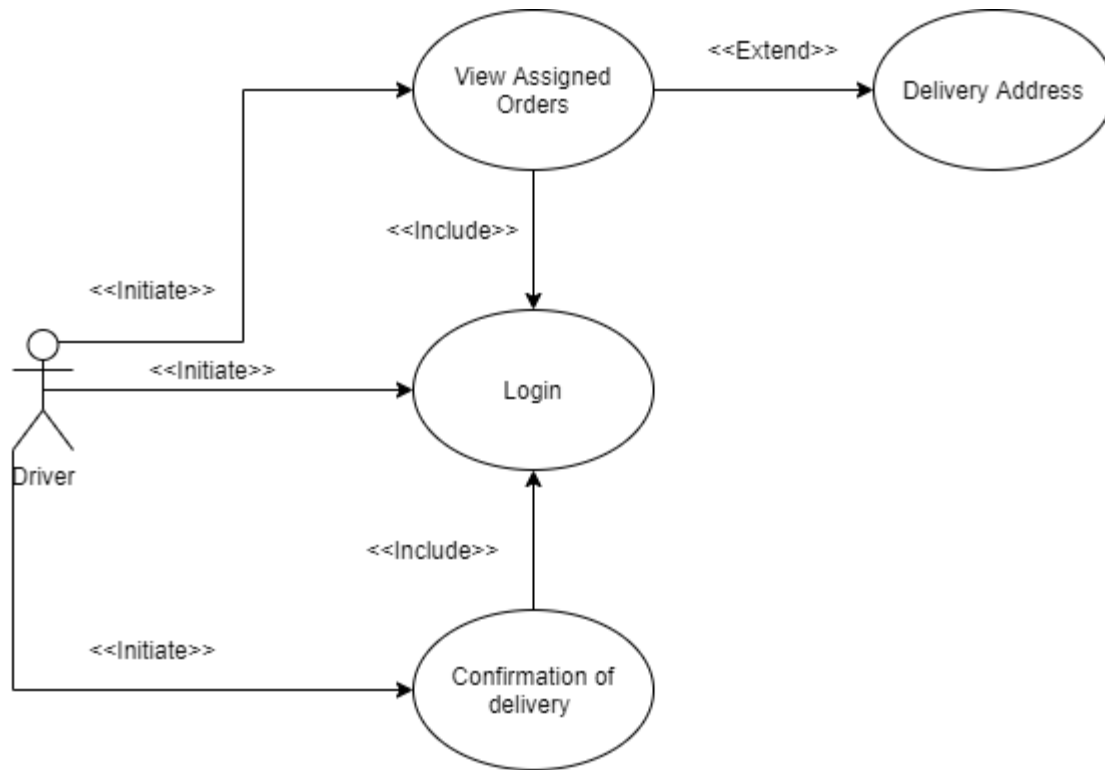
3.10.2 Link to Product Functions (in 2.2)

3.11   Active Delivery Status

3.11.1   Description and Priority

The Active Delivery Status function is of medium priority as it displays the status of active deliveries to the Store Manager. This function will pull and send information to the Record Storage Transactions function.

3.11.2 Link to Product Functions (in 2.2)

This Diagram shows only the Delivery Driver portion of the complete diagram. Sections 3.12 - 3.15 will cover these use cases individually

3.12 Login (Delivery Driver)

3.12.1 Description and Priority

The Login function is of high priority as it will allow the Delivery driver to access the GDS. The information provided by Driver will be used in other functions within the GDS.

3.12.2 Link to Product Functions (in 2.2)

3.13 Confirmation of Delivery

3.13.1 Description and Priority

The Confirmation of Delivery function is of low priority as it will show that a Driver has completed a specific order.

3.13.2 Link to Product Functions (in 2.2)

3.14 View Assigned Orders (Delivery Driver)

3.14.1 Description and Priority

The View Assigned Orders function is of high priority as it will contain valuable information for the Delivery Driver to complete their deliveries. This function could have additional functionality by allowing drivers to request to change orders if the new arises.
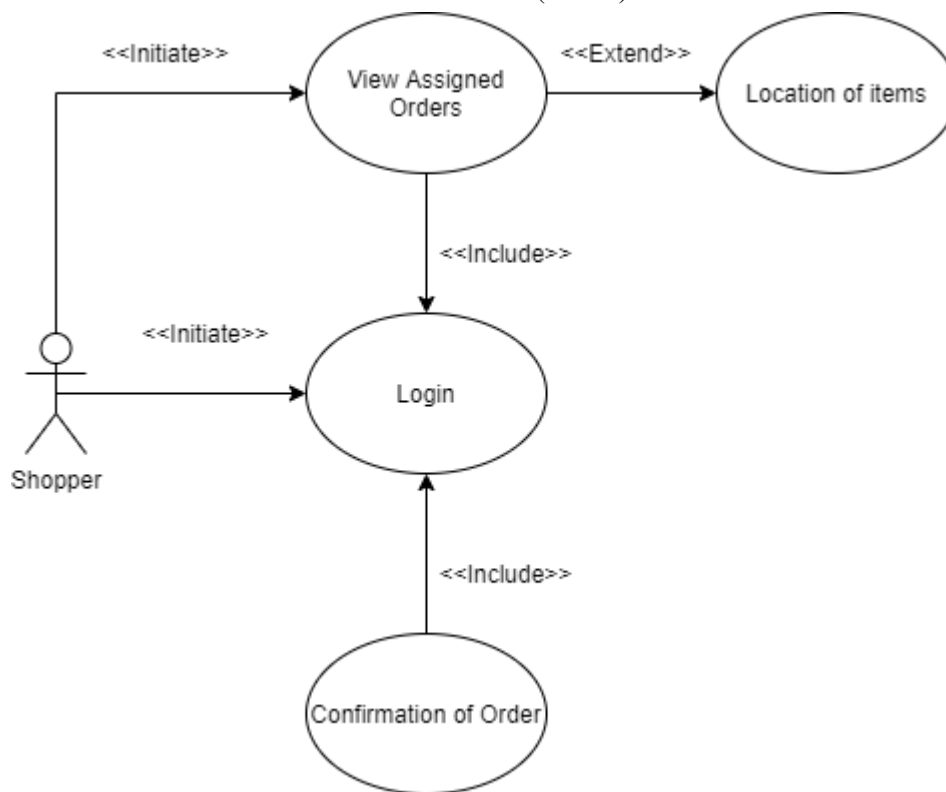
3.14.2 Link to Product Functions (in 2.2)

3.15 Delivery Address

3.15.1 Description and Priority

The Delivery Address function is a subcase of View Assigned Orders. This function will allow the Delivery Driver to see the delivery address of the current order.

3.15.2 Link to Product Functions (in 2.2)

This Diagram shows only the Delivery Driver portion of the complete diagram. Sections 3.16 - 3.19 will cover these use cases individually

3.16 Login (Shopper)

3.16.1 Description and Priority

The Login function is of high priority as it will allow the shopper access to the GDS. Information that is provided by the Shopper will be used by other functions in the GDS

3.16.2 Link to Product Functions (in 2.2)

3.17 Confirmation of Order

3.17.1 Description and Priority

The Confirmation of Delivery function is of low priority. It will allow Shoppers to be flagged as available to be assigned new orders.

3.17.2 Link to Product Functions (in 2.2)

3.18 View Assigned Orders (Shopper)

3.18.1 Description and Priority

The View Assigned Orders function is of high priority as it will contain valuable information for the Shopper to complete their deliveries. A Shopper will view their orders and be able to complete their tasks.
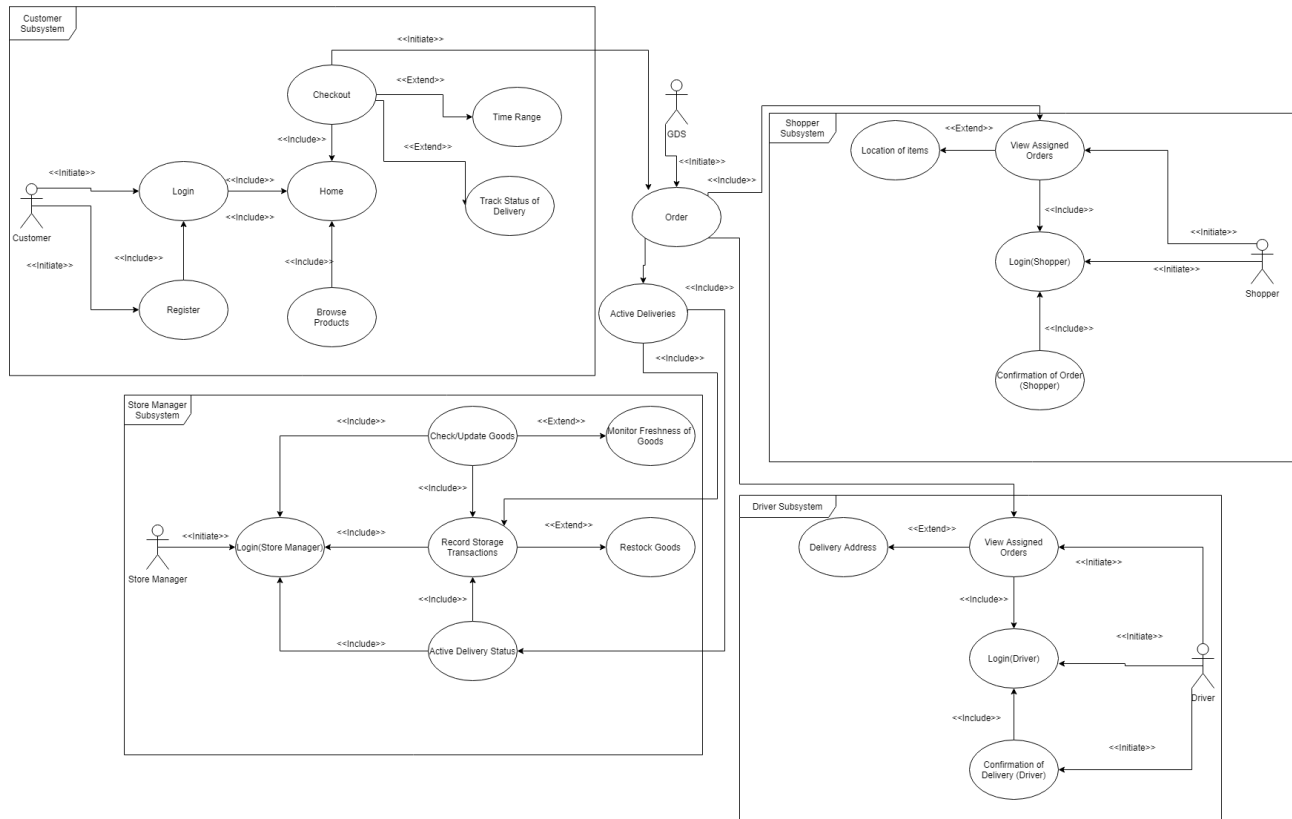
3.18.2 Link to Product Functions (in 2.2)

3.19 Location of Items

3.19.1 Description and Priority

The Location of Items function is a sub case of View Assigned Orders. This function will contain the locations of the items necessary to complete a specific order.

3.19.2 Link to Product Functions (in 2.2)

This is the complete Use Case diagram with all of the Subsystems as well as additional use cases to bridge these systems together. 3.20 - 3.21

3.20 Order

3.20.1 Description and Priority

The Order function is a core component of the GDS and has a very high priority as this function will connect many of the subsystems together and pull information from them. This function will take a Customer's order and send that information to the proper functions to fulfill the order.

3.20.2 Link to Product Functions (in 2.2)

3.21 Active Deliveries

3.21.1 Description and Priority

The Active Deliveries function will show the current orders out for delivery and is of a high priority. The GDS will send this information to the Store Manager for them to record their inventory changes.

3.21.2 Link to Product Functions (in 2.2)