Medical supply store

Items on shelf marked with RFID.

RFID readers will be placed to monitor movement of tagged items.

Each tag has 96-bit EPC (Electronic Product Code) with Global Trade Identification number.

RFID readers are installed on each shelf of sales floor

Assumptions

Software developed only runs on main computer not for peripheral RFID devices.

EPC tag is unique for category so cannot store different items of same type. Only stores count.

Assume RFID system works perfectly

Assume item removal even is a clean break

RFID readers will be able to correctly detect when more than one item of the same type is removed. Assume customer will return item to correct shelf

Communication network and computing system will be able to handle large volumes of events.

Requirements

System will continuously monitor tagged items on shelves. Whenever an item is removed, event is recorded in the system database. System should be able to handle when user puts item in carts, continues shopping, changes her mind then puts item back on shelf.

System will keep track when stock running low. Will detect low stock state when product item count goes below a certain threshold while more than zero.

System will detect out of stock state for product when product item counts reaches zero.

System will notify store manager when low stock or out of stock state is detected. Notification will be sent by electronic mail and manager will be able to read it on their phone.

Manager will be able to assign a store associate to replenish a particular shelf with a particular product. Store associate will be notified via email with details on task.

While associate restocks shelf, RFID system will automatically detect newly restocked items.

Store associate should be able to inform system when replenishment task is completed. Number of restocked items will be stored in database record. Item count obtained automatically may be displayed to store associate for verification. After associate confirms shelf is replenished, task status is changed to completed and a notification will be generated to store manager.

a) The customer is an actor for the software to be developed. Even though the adding or removal of items on the shelves is handled automatically by the RFID readers, the customer still triggers the system to automatically update when they take an item off the shelf so they have a part to play in the system.

b)

Actors:

Customer – Remove item, Re-add item

RFID Reader System – Modifies item count (increases item counts, decreases item count), Adds new items, Alert manager to low stock, Alert manager to out of stock, Alert manager when shelves restocked, Alert associate on task from manager

Store Associate – Restock system

Store Manager – Send task to store associate

c)

Use Case Id: UC1

Use case name: Login

Description: Authenticates the user and allows them to access the system

Related Requirements: REQ5, REQ7

Use Case Id: UC2

Use case name: Monitor item count

Description: Checks RFID readers if the item count for an item has changed

Related Requirements: REQ1, REQ2, REQ3

Use Case Id: UC3

Use case name: Modify item count

Description: If a customer takes an item off the shelf, its item count is decremented and if it is put back, its item count is incremented.

Related Requirements: REQ1, REQ2, REQ3

Use Case Id: UC4

Use case name: Alert low stock

Description: When an item’s count goes below a set threshold, the manager is sent an email notifying them that the item is low in stock.

Related Requirements: REQ2, REQ4

Use Case Id: UC5

Use case name: Alert out of stock

Description: When an item’s count reaches zero, the manager is sent an email notifying them that the item is out of stock.

Related Requirements: REQ3, REQ4

Use Case Id: UC6

Use case name: Assign restock

Description: Notify a store associate that a specific item/items need to be restocked via email.

Related Requirements: REQ5

Use Case Id: UC7

Use case name: Restock

Description: Records the amount of an item restocked by the store associate.

Related Requirements: REQ6, REQ7

Use Case Id: UC8

Use case name: View restock count

Description: Displays the item count obtained when restocking so that store associate can verify.

Related Requirements: REQ7