PROG1150 – Software Analysis and Design

Assignment #2 – Data Flow Analysis of the GIORP-5000 System

Date of submission: Feb 21, 2019

GIORP-Team 5

Lev Potomkin
Luke Macintosh
Joel Malleck
Eric Emerson

1. Event Table

| Event	Description
1. Serve new customer	Event of a Kiosk Environment subsystem – models interaction of a new customer the kiosk; customization of the environment
2. Display catalogue	Event of an Item Searching subsystem – models customer's interaction with catalogue and item browsing
3. Search for item	Event of an Item Searching subsystem – models customer's search for one particular item
4. Check item availability in current store	Event of an Inventory Level Tracking subsystem – models the check of inventory level of a particular item in the store the kiosk is located
5. Check item availability in surrounding stores	Event of an Inventory Level Tracking subsystem – models the check of inventory level of a particular item in stores near the kiosk
6. Check item availability in warehouse	Event of an Inventory Level Tracking subsystem – models the check of inventory level of a particular item in the warehouse
7. Place item on hold	Event of a Item Ordering subsystem – models customer's request to place a particular item from the nearby store on hold
8. Handle email notification	Event of a Item Ordering subsystem – models system's email notifications for items placed on hold
9. Map current store item	Event of an Item Mapping subsystem – models "Find me" feature for a particular item in the current store
10. Map surrounding store item	Event of an Item Mapping subsystem – models "Find me" feature for a particular item in the store nearby

2. CRUD Table

| Things \ Events	Catalogue	Store Information	Store Inventory Level	Warehouse Inventory Level	Effective Route	Customer Profile	Item Order
1. Serve new customer		R				C	
2. Display catalogue	R	R					
3. Search for item	RU	R					
4. Check item availability in current store		R	R				
5. Check item availability in surrounding stores		R	R				
6. Check item availability in warehouse		R		R			
7. Place item on hold	R	R				CRU	C
8. Handle email notification		R				R	RD
9. Map current store item		R			R		
10. Map surrounding store item		R			R		

3. Context Diagram
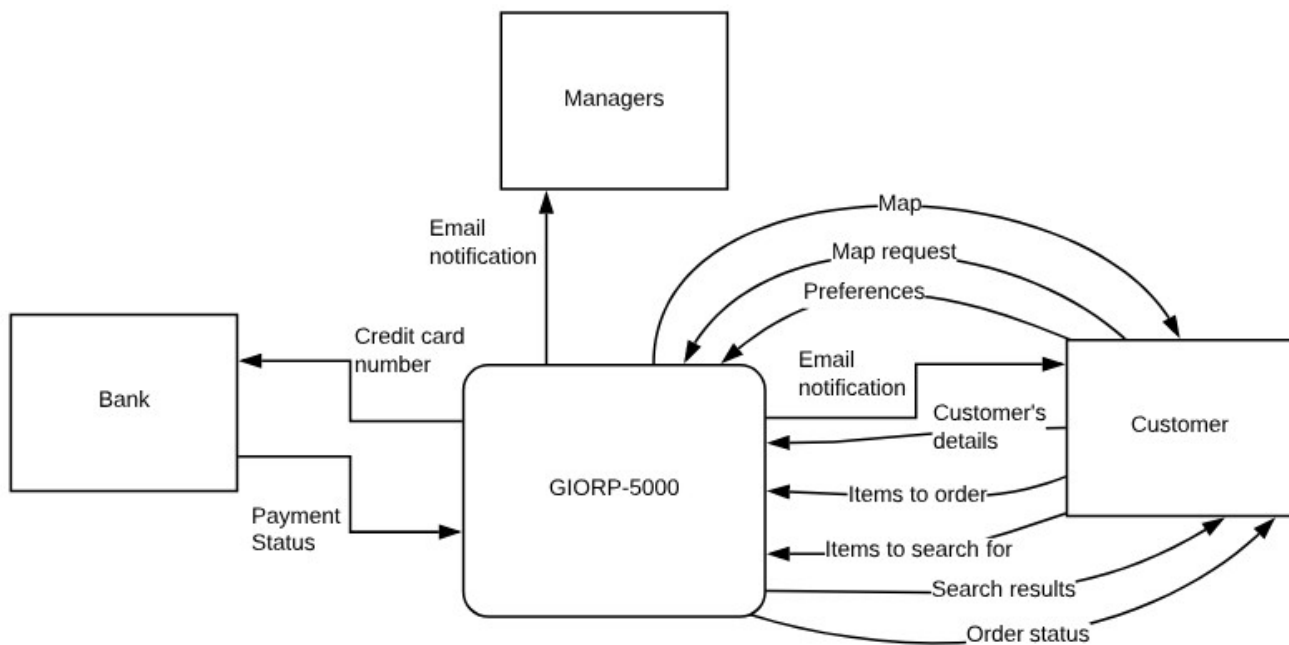
4. Diagram-0s
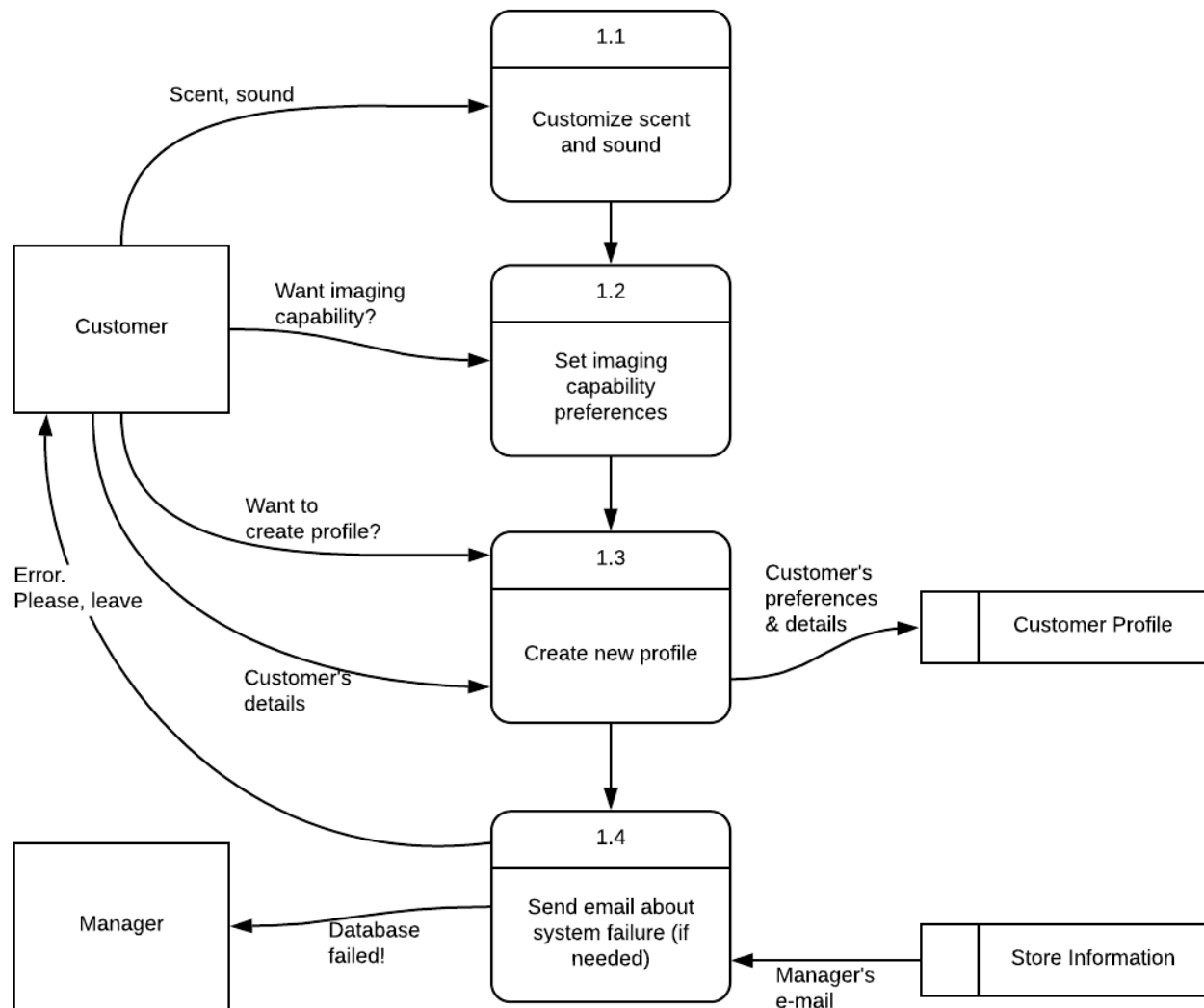## 4.1. Item Searching
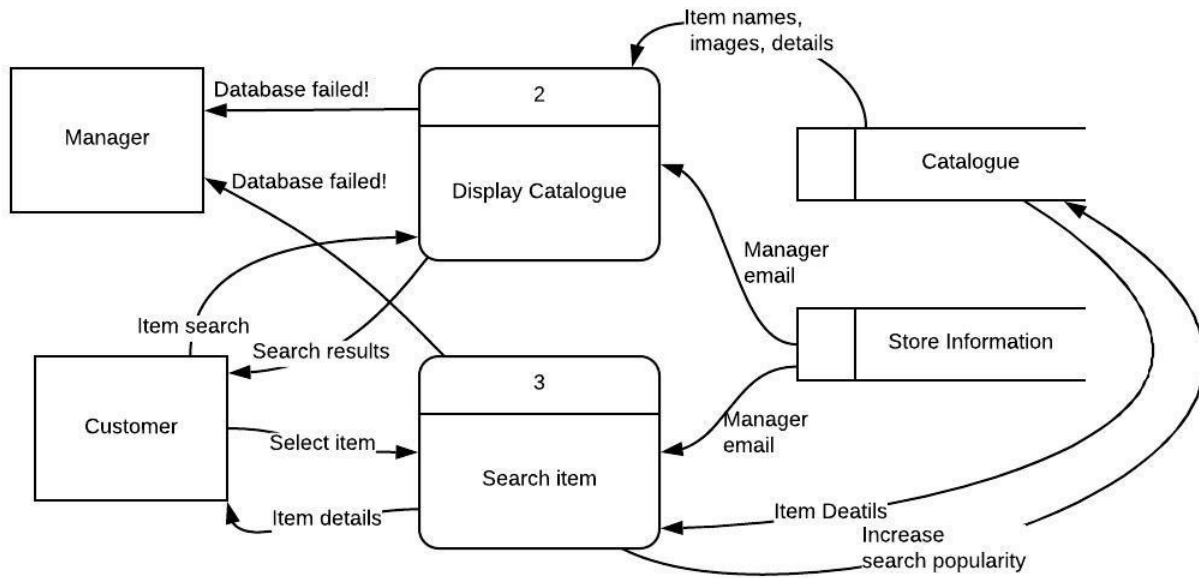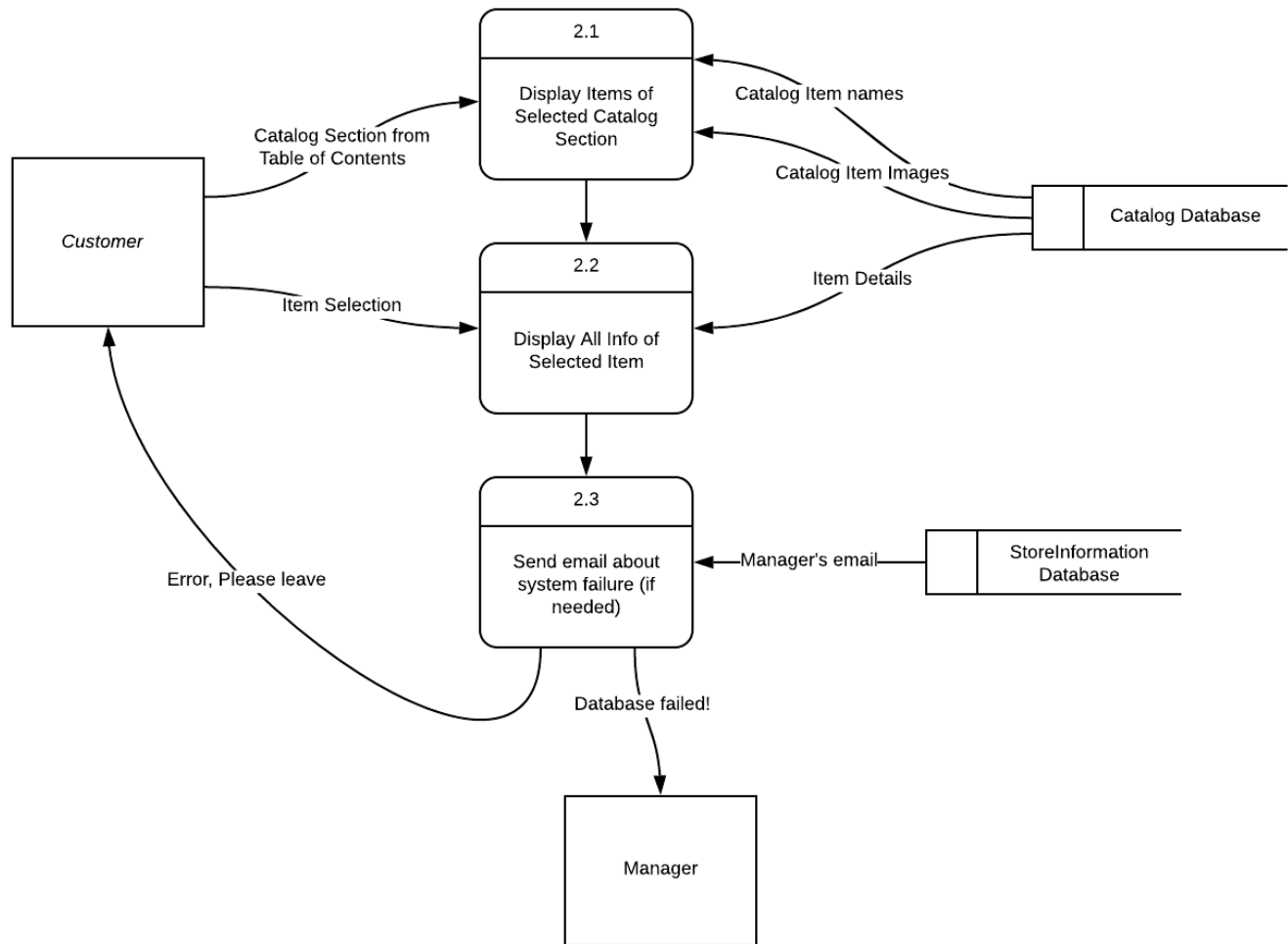
4.2. Item Ordering
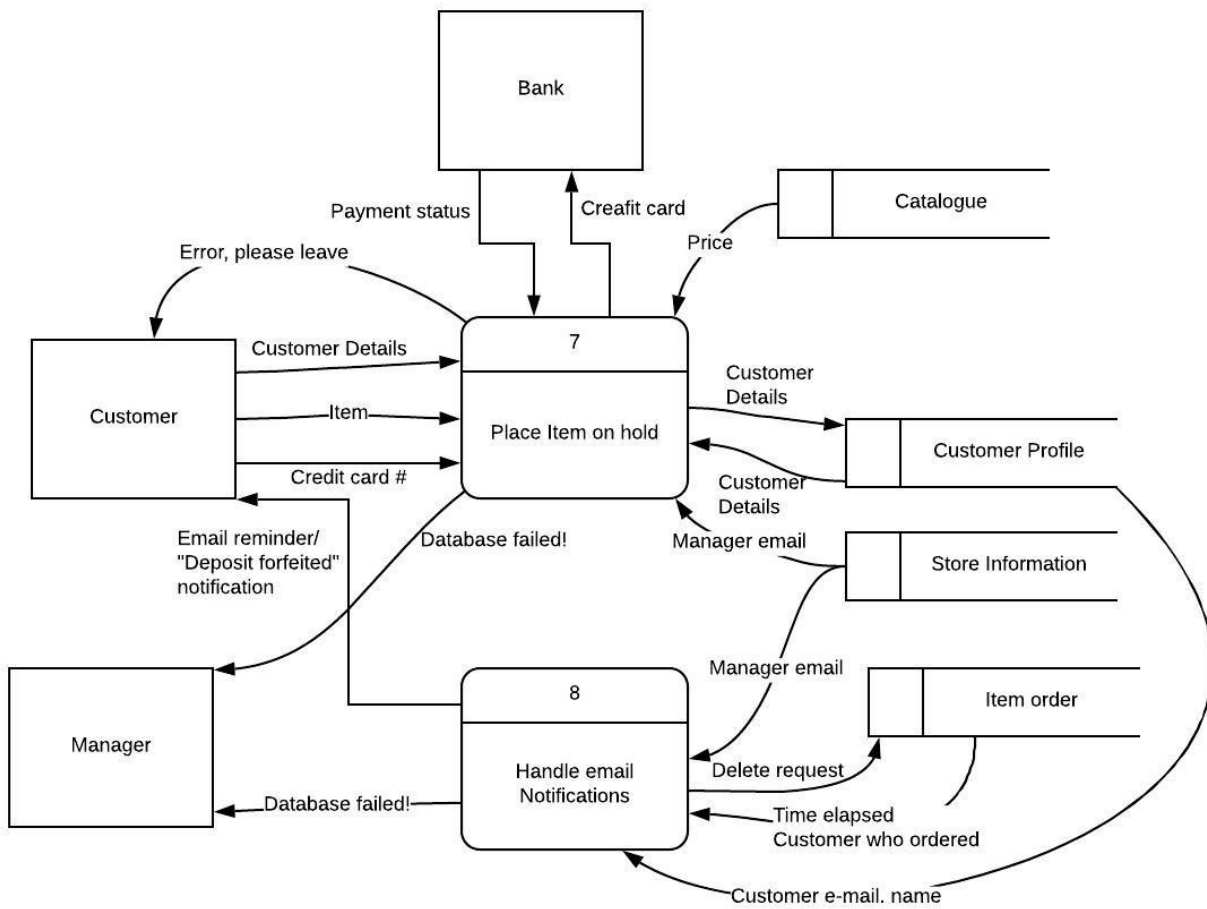
5. Fragment Diagrams
5.1. Serve New Customer

The diagram models the event where new customer enters the kiosk. First, he inputs preferred scent and sound, then imaging preferences. Systems presents an option to create a profile. Failure handling is also modelled.

5.2. Display Catalogue

2.1

Display Items of
Selected Catalog
Section

Catalog Section from
Table of Contents

Catalog Item names

Catalog Item Images

Customer

Catalog Database

2.2

Display All Info of
Selected Item

Item Selection

Item Details

2.3

Send email about
system failure (if
needed)

Manager's email

StoreInformation
Database

Error, Please leave

Database failed!

Manager

Display Catalog Information:
This diagram shows the customer first selecting a product sub-section in the catalog (such as Men's Clothing, Women's Clothing, Housewares, etc.), and then the system displaying these categorized items name and pictures from the Catalog Database. Then, the customer makes an item selection, and the system displays all the available info of the item from the Catalog Database.

5.3. Search Items
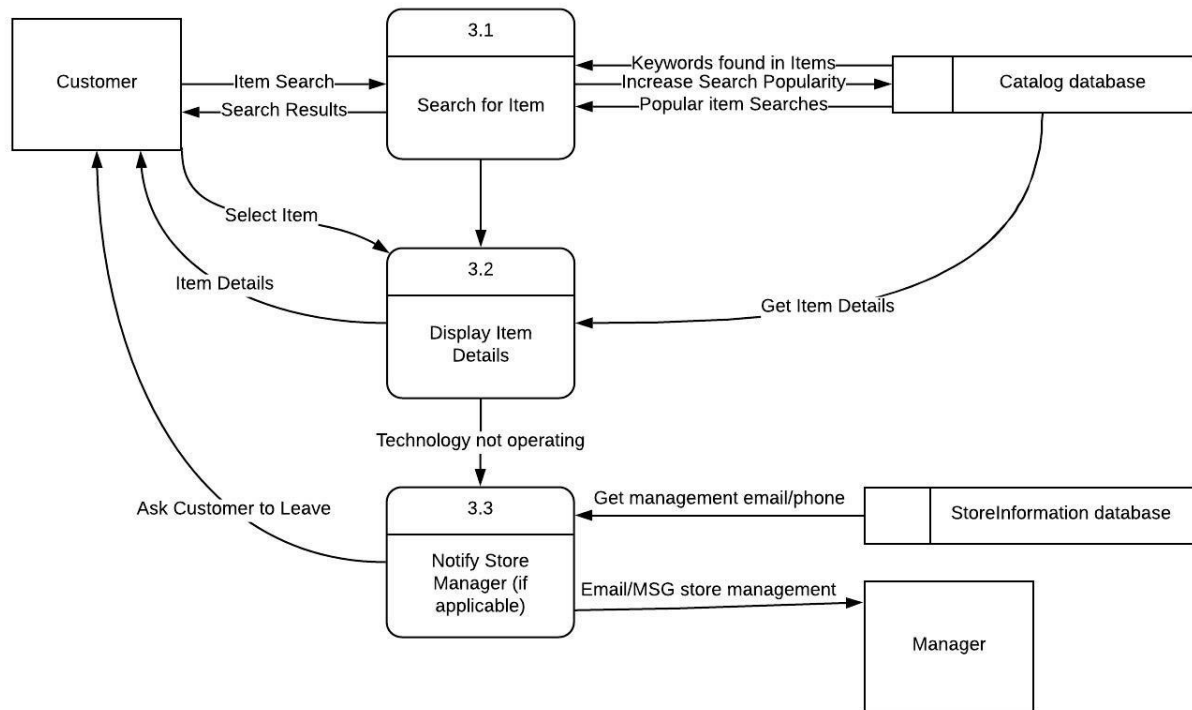
The following Data Flow showcases a customer searching for an item in-store using the GIORP searching system. This system is accessed by the customer by selecting the "Search" option from the GIORP interface. The events modelled in the data flow are the following: The customer searches for an item. The system searches through the item database to find keywords that match the search. The system checks the popularity of all matching items and bases the top search results based on which item has the most searches. The number of searches for the item is updated in the system to make the searched item increase in popularity. The customer then can select from the list of items to get item details.

## 5.4. Check Item Availability in Current Store
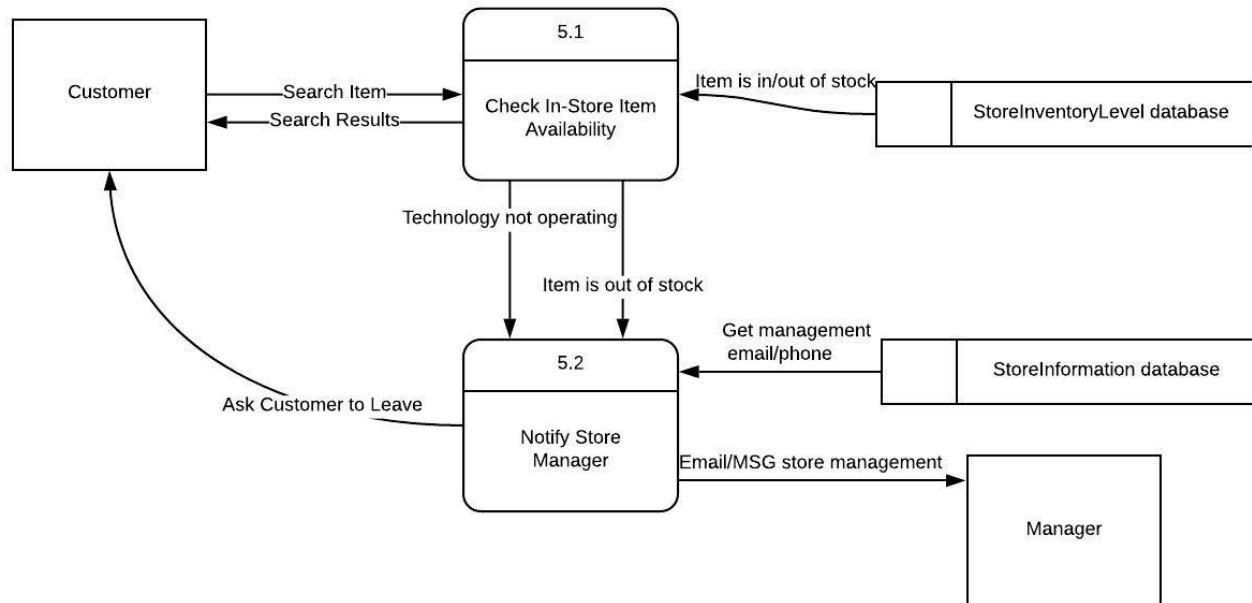
This data flow showcases the in-store item searching using the GIORP inventory level tracking system. The system is accessed through the "Find Me" option on the GIORP interface. The events modelled in the data flow are the following: The customer searches for the item within the store. If the store is in stock the customer gets information about the item and it's location in the store. If the store does not have the item in stock the manager is notified.

## 5.5. Check item availability in surrounding stores
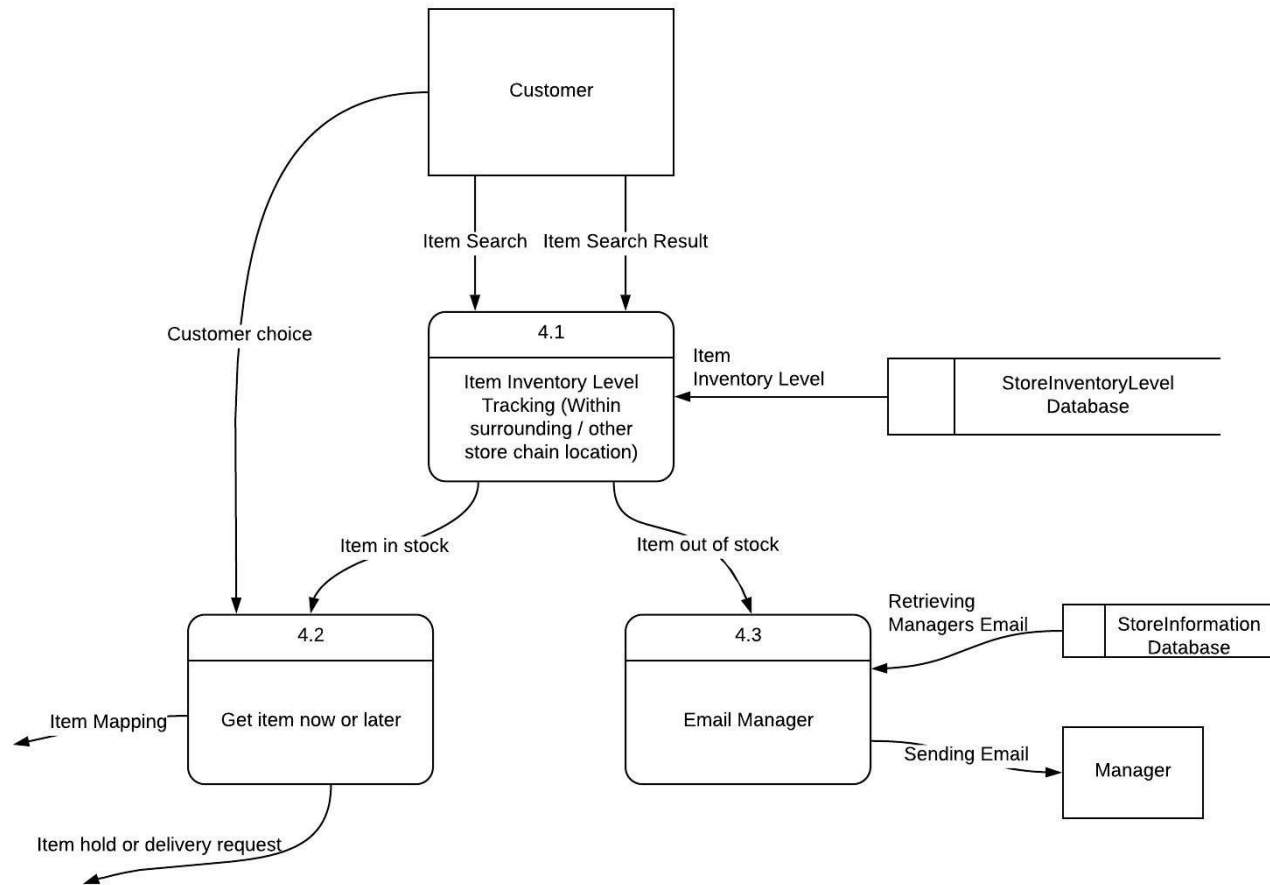
The following Data Flow Diagram displays the process of a customer searching for an item in stores within their surrounding area or at other stores chain locations. The Diagram includes the main path of the customer searching for an item, it being in stock at one of the surrounding locations and then being presented with a choice of picking up the item now or putting it on hold to pick up later. It also includes the pathway of the item not being in stock at the desired location and the system automatically notifies a manager (by email) that this particular item is out of stock at this location.

5.6. Check item availability in Warehouse
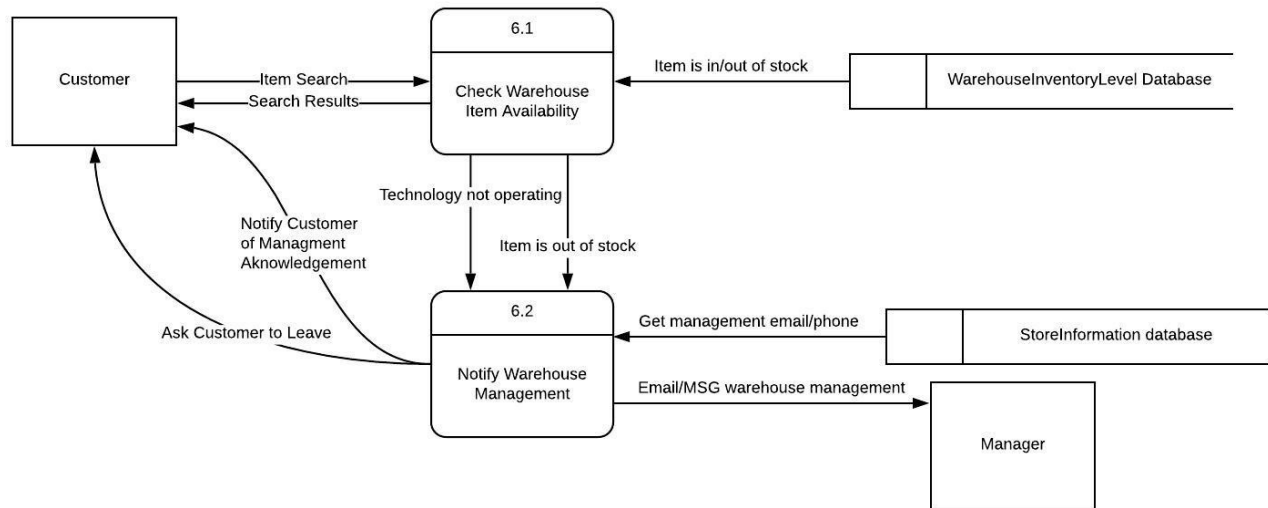
This Data Flow showcases the warehouse inventory searching system using the GIORP inventory level tracking. This system is accessed when the customer can not find the searched product withiin the store. The events modelled in this data flow are the following: The customer searches the inventory of the warehouse for the item. If the item is out of stock at the warehouse the manager is notified that more should be ordered to the warehouse. The customer is notified that the manager knows and the customer would then have the option to order the item to the store using the GIORP item ordering system.

5.7. Place Item on Hold
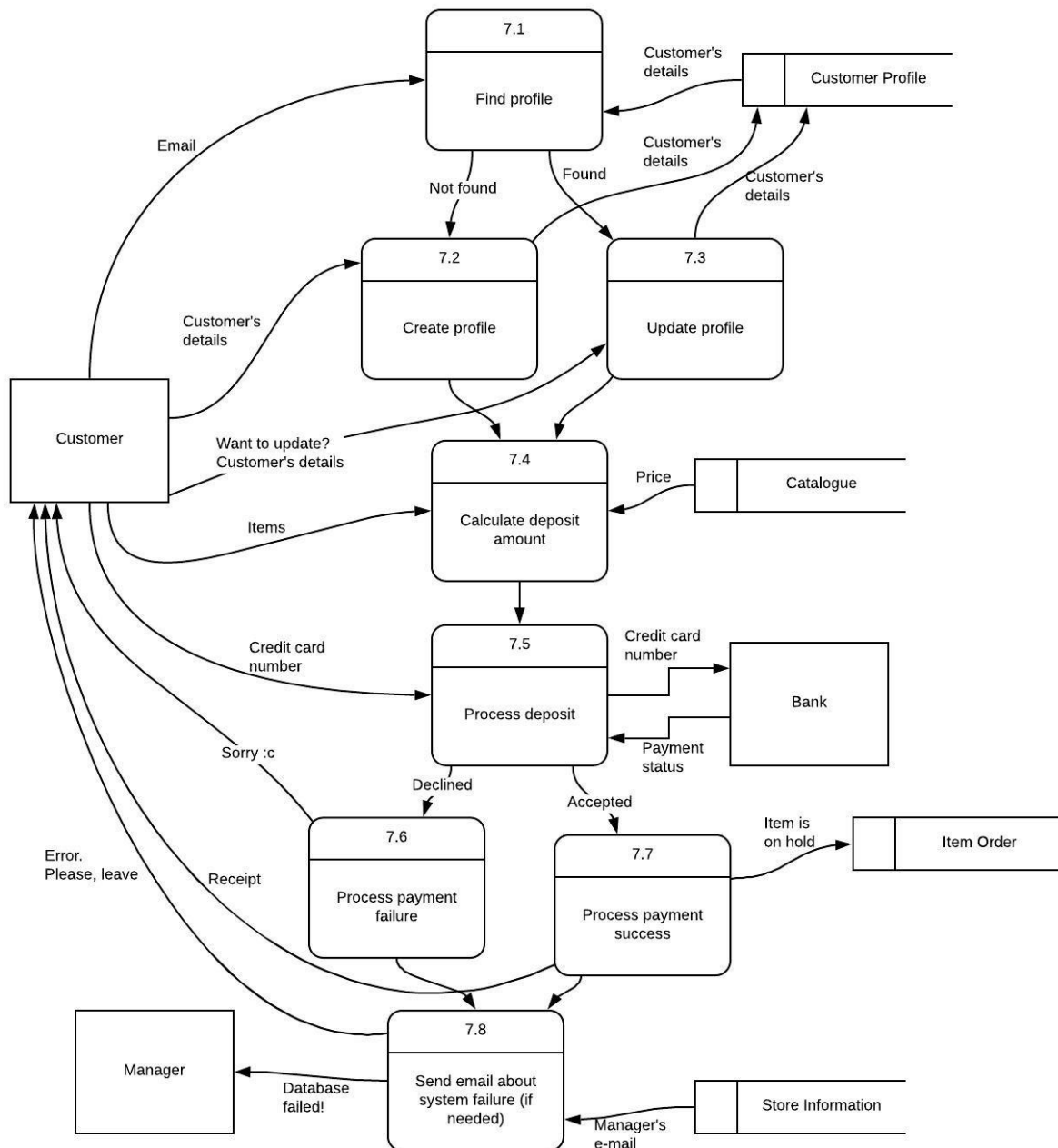
The diagram models the event where customer requests to place an item on hold. First, it searches the Customer Profile Database and presents option to create of update the profile. Then, it handles the deposit transaction and also takes into account payment failure or database failure, in which case it notifies the store manager.

5.8. Handle email notification
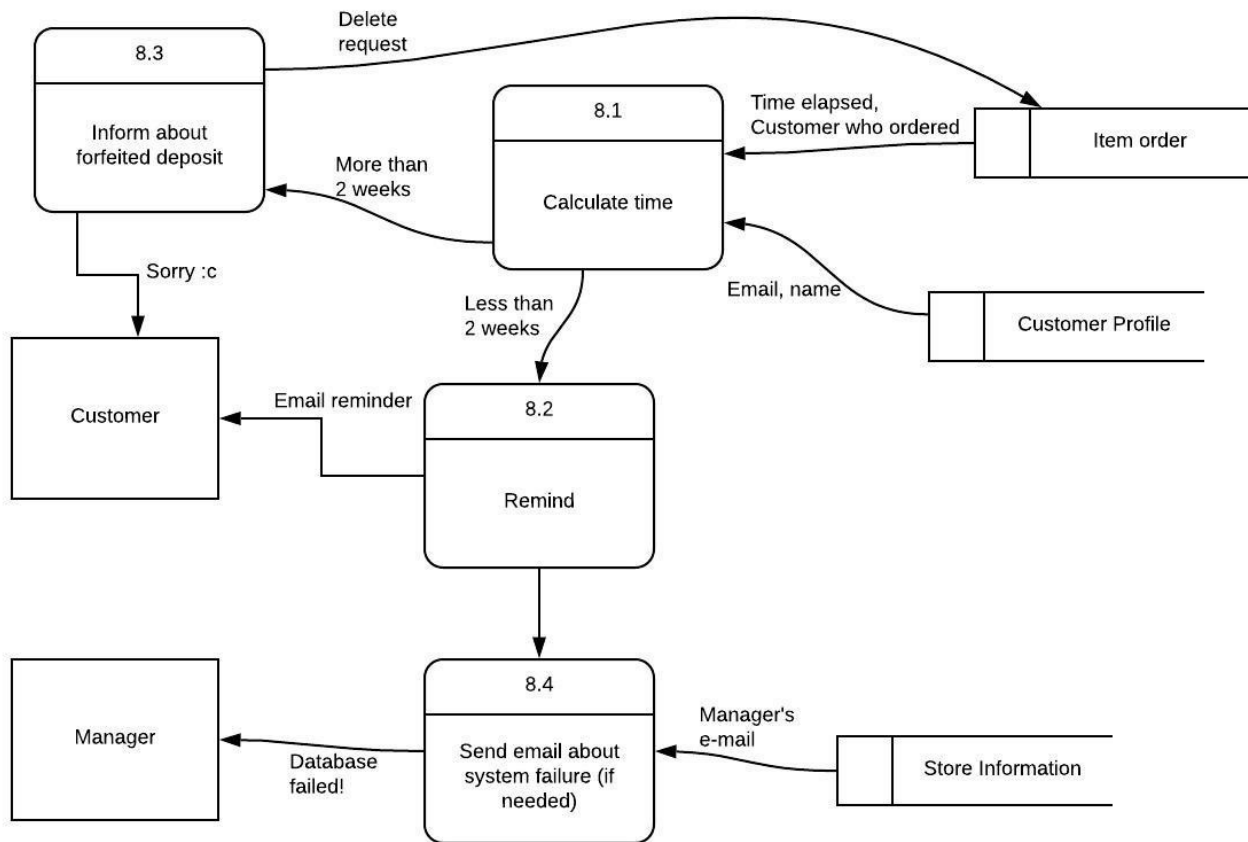
The diagram models the email notification handling for remending about the hold or informing about the forfieted deposit, in case no action has been taken in 2 weeks

5.9. Map current store item
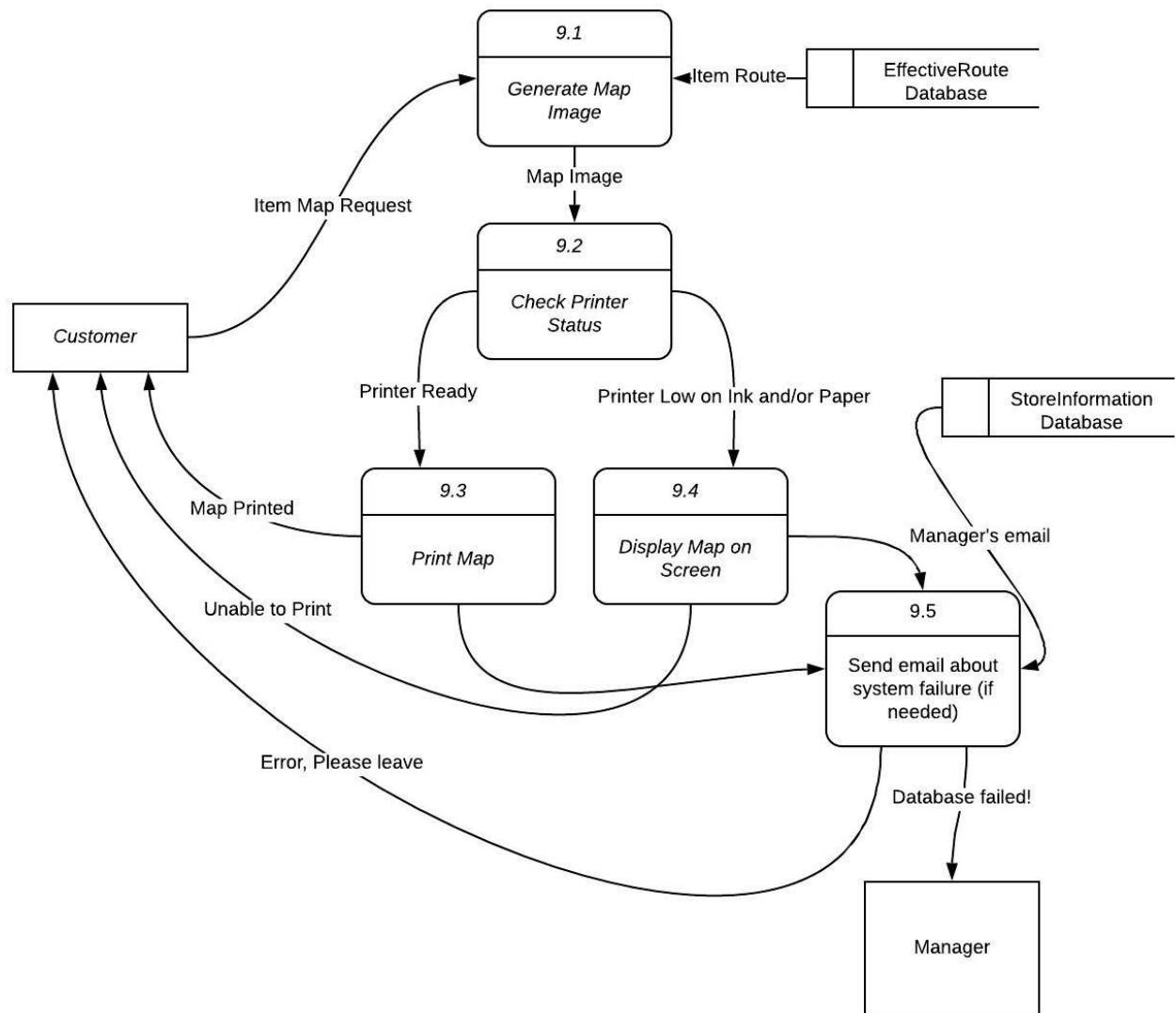
Print Item Map for Current Store
In this diagram, the customer confirms they would like a printed map to the item in the current store. The system generates a map image based on the corresponding store's item route from the EffectiveRoute database. Then, the status of the printer is confirmed, and the system either prints the image for the customer or displays the map on the screen and notifies the customer depending if the printer has enough supplies or not.

5.10. Map surrounding store item
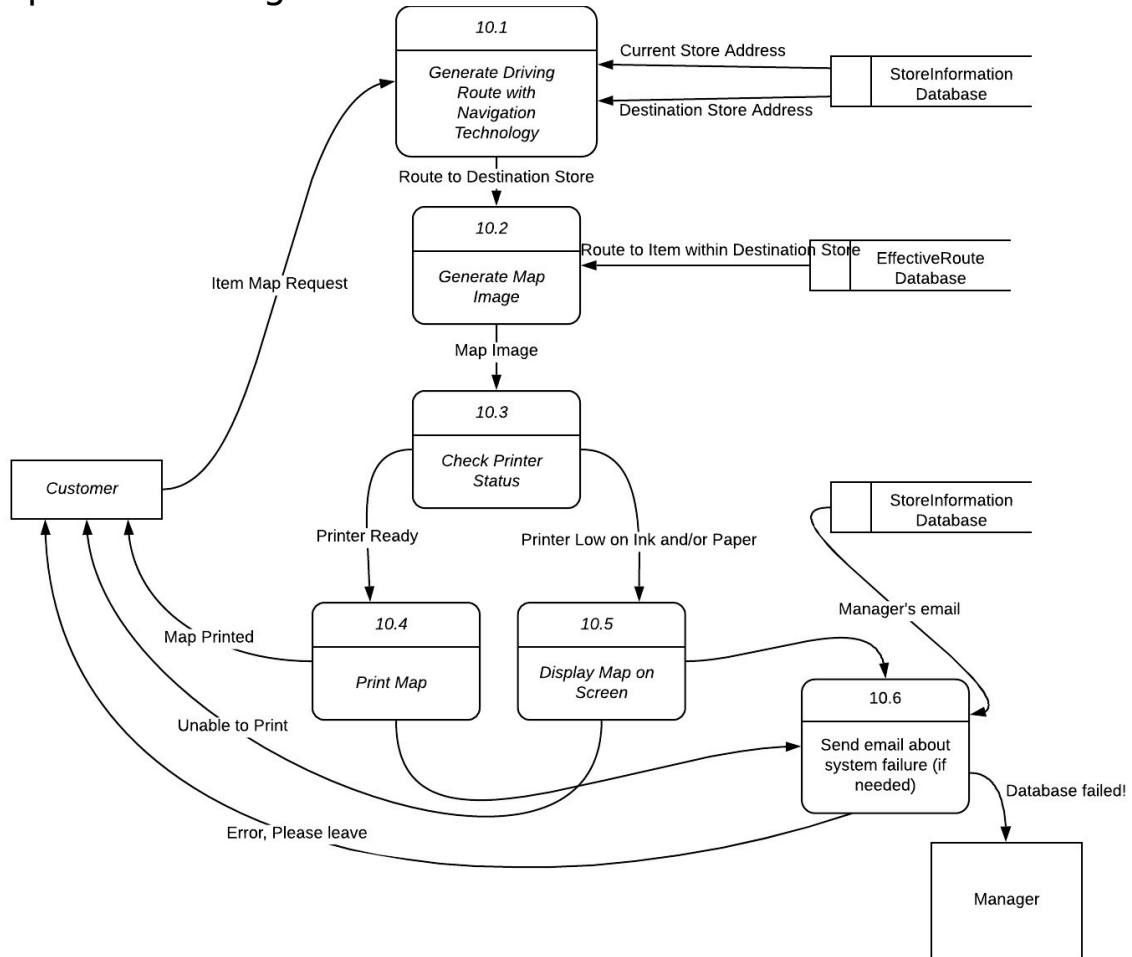
Print Item Map for Surrounding Store
This diagram shows the flow of data within the Item Mapping sub-system after the user is redirected from the "find me" option. The user first confirms they would like a map to their desired product. After that, a driving route is generated by inputting the current store address and destination store address (from the StoreInformation Database) into the navigation system (Google Maps/MapQuest). This route, along with the route from the EffectiveRoute Database, are used to create