

PROG1150 – Software Analysis and Design
Assignment #1 – Critical Analysis Summary

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Table of Contents

1. Project	
Summary.....	3
2. Requirement	
Summary.....	4
2.1. Kiosk	
Environment.....	4
2.1.1. Known Requirements.....	4
2.1.2. Additional Questions.....	4
2.2. Item	
Searching.....	4
2.2.1. Known Requirements.....	4
2.2.2. Additional Questions.....	5
2.3. Inventory Level	
Tracking.....	5
2.3.1. Known Requirements.....	5
2.3.2. Additional Questions.....	5
2.4. Item	
Mapping.....	5
2.4.1. Known Requirements.....	5
2.4.2. Additional Questions.....	6
2.5. Item	
Ordering.....	6
2.5.1. Known Requirements.....	6
2.5.2. Additional Questions.....	6
2.6. Item	
Viewing.....	7
2.6.1. Known Requirements.....	7
2.6.2. Additional Questions.....	7
3. Future	
Considerations.....	8

1. Project Summary

The GIORP-5000 (General-Purpose Item Ordering Retail Processing Station) is a kiosk-like station that can be placed in various retail stores to allow customers to:

- Sit down, relax, smell nice scents and enjoy calming sounds
- Browse store items, read their description, look at their images
- Evaluate items' look on them / with them through a generated model on the screen
- Check store's inventory to get information about the presence of the chosen item
- Find and print optimal routes to the desired items
- Issue a hold request or a delivery of a desired item

... all of this from a single kiosk. Its purpose effectively is to attract customers to the stores by providing an easy interface and simplifying shopping experience.

2. Requirement Summary

2.1. Kiosk Environment

2.1.1. Known Requirements

- When customer enters, customization screen shall popup to provide the interface for choosing the scent and sound
- When scent is chosen, system shall add it to the air
 - Parameters: type of scent and its strength – controlled by user through the screen
- When sound is chosen, the system shall start playing it

2.1.2. Additional Questions

Are there any requirements regarding the user interface on the popup screen?

Should user be able to control the volume of the sound?

Should user be able to control the environment after the customization screen disappears?

Is there a specific protocol / hardware interface provided to control the air filtration system?

2.2. Item Searching

2.2.1. Known Requirements

- The customer should be able to browse through store's items on the screen
- When item is chosen, system shall display:
 - Images of the item
 - Description of itself and of its options
 - Warranty information
 - Links to related items
- Search engine should be provided capable of searching items by name, partial description, etc.
- When search is done, system shall update and store the number of times certain items were searched

2.2.2. Additional Questions

How fast should the search engine operate?

Should the price be displayed after the item is chosen?

What item parameters should search engine accept and perform search on (exactly)?

Based on what parameter should the matching items be sorted, when displayed?

Are there any constraints regarding the items' database?

Is a privacy statement required to be displayed in order to use customer's search data?

Are there any specific requirements regarding the user interface? Or a specific measure to evaluate if it is easy and fun to use?

2.3. Item Inventory Level Tracking

2.3.1. Known Requirements

- When item is chosen, the system shall display its current status (present in current store / present in stores nearby / present in warehouse / out of stock / is not carried) :
- The system shall check stores' inventories and if the item appears to be out of stock, a message to manager of the particular store(warehouse) shall be sent with a reminder
- If the store does not carry the item anymore, system shall notify customer about it

2.3.2. Additional Questions

Is there a specific way you would want to notify managers? (Through e-mail / text / phone call / etc.)

Is there a specific format in which you would want to notify managers? (content)

How fast should the inventory check be performed?

2.4. Item Mapping

2.4.1. Known Requirements

- If the chosen item is found in the current store, the system shall print the optimal route map to the item (upon customer's agreement)
- Instead, if the chosen item is found in nearby store, the system shall ask to pick the desired store from available ones, then print the optimal route map to the item (and within store?)
- Instead, if the chosen item is found in warehouse, the system shall display the expected delivery date on the screen

2.4.2. Additional Questions

Should the maps be printed or instead downloaded to customers' smartphones?
Should the optimal route be optimal in terms of time, distance, cost or anything else?

Should the get-to-store route be printed on the same map as the get-to-item-within-store route, or should the system separate them to avoid confusion?

What if the printer runs out of paper? Should the program display an error message?

2.5. Item Ordering

2.5.1. Known Functional Requirements

- This feature is only provided if the chosen item is not found in the current store.
- After the item is chosen, customer can issue a hold or a delivery request, and system shall process it as follows:
 - Request and record customer's information, such as name, phone number, financial, etc.
 - Request for a deposit (value is determined be a certain % of the item's price)
 - Handle and complete financial transaction
- If delivery is requested, system shall send message to customer, reminding to come and get it when item has arrived
- If a hold is requested, system shall send reminders daily for 2 weeks until customer's decline or purchase of this item.
 - If no action from customer is seen in 2 weeks, system shall send a message about the forfeited deposit

2.5.2. Additional Questions

Should the privacy statement be displayed before collecting customer's data?

Should the "delivery" option exist on all items (including foods)?

Should the deposit be accepted in cash / credit card?

What is the exact value of the deposit?

Is there a specific protocol to handle depositing and transactions?

What exact information should be collected from user when preparing for deposit?

What format should the messages be in? What will they be delivered through?

Are there any security considerations for the system?

2.6. Item Viewing

2.6.1. Known Functional Requirements

- The system shall be able to display the customer's picture wearing/holding/being beside/in/on the item dependant on the type of the item.
- The picture should be constructed from the cameras' inputs.
- The picture should be such that allows viewing from any angle, including rotation
- The system shall identify items on picture and render chosen items in their place (clothes/jewelry)
- The system should be able to print the picture upon request

2.6.2. Additional Questions

Are there any specific requirements regarding the user interface?

Are there any requirements regarding error handling (i.e. there are 2 people in kiosk / customer is not sitting but standing)?

Are there any requirements regarding accessibility issues?

3. Future Considerations

How will the software interface all the hardware found in the system?

How will the item database be collected and updated?

How can the system be made less prone to error?

The user interface regarding every feature should be designed.

How can the 360 degree model be constructed from pictures? Does it need preprocessing / additional requests to customer?