SOFTWARE REQUIREMENTS SPECIFICATION

for

Whole Knockoffs Grocery Store

April 13, 2020

Contents

1 Introduction

1.1 Purpose

This document provides detailed requirements about the product, Whole Knockoffs webpage, that our team is creating for our customer, the owners of Whole Knockoffs. This document is intended as a reference on the desired behaviors and requirements of the application.

1.2 Scope

The Whole Knockoff Grocery Store (WKGS) program is intended to be a system to allow the Whole Knockoff grocery store to manage employees, track inventory, sell groceries online (using both delivery and in-store pickup), and give discounts to loyal customers. The WKGS website will allow customers to quickly see what is available to purchase at the grocery store using the website storefront. The customer can select items that they wish to purchase for delivery or in-store pickup. After adding groceries to their virtual shopping cart, the customer can select if they would like the groceries delivered or available for in-store pickup. The customer can then purchase these groceries through the online portal. The website will also act as an employee hub where employees can be assigned work schedules and hours worked can be tracked. The website also update items quantities counts to the WKGS's separate inventory system.

1.3 Definitions, acronyms, and abbreviations

WKGS: Whole Knockoff Grocery Store.
DESC: Description - Explanation of the functional or non-functional requirement.
RAT: Requirements Authoring Tool - This line describes why the feature exists so that an automated tool can assist with classifying each requirement.
DEP: Dependencies - Other requirements that must work correctly for this requirement to work.
User: Any person who is using the WKGS system.
Member: Any person who has an account for purchasing groceries from WKGS.
Guest: Any person using the WKGS storefront who is not logged into an account.

Customer: This group includes both Members and Guests.
Employee: A person who is currently employed by WKGS.

1.4 References

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1.5 Overview

In section 2, the product will be given an overall description. Section 3 will describe in detail each of the features and their corresponding requirements.

2 Overall Description

The WKGS will provide customers and employees alike a web-based shopping and grocery store experience. Employees will be met with a delivery and pickup process/system that eliminates the need for coordination among activities and employees. Customers will benefit similarly from the seamless intersection between item selection and delivery, making their shopping experience the easiest part of every customer's day.

Customers will be met with an item selection interface from the web page. The item interface will display the item's name, description, and price. Customers can add items that are in stock to a virtual shopping cart that will maintain a list of items that the customer wishes to purchase. The website will also feature a shopping list. The shopping list is similar to the shopping cart in that it maintains a list of items that the customer added. However, a shopping list cannot be directly purchased and maintains a list of items separate from the shopping cart. The customer can purchase items in their shopping cart through an online payment system. Groceries can then be obtained through a delivery system or by picking the groceries up from a WKGS location. All purchases made through the website update the grocery store's inventory system.

2.1 Product Perspective

The system is expected to interface with the store's existing inventory system as defined by the customer. The employee interface and customer facing portion of the web page

will be separate but interface together on the same application. Although the web page is standalone and will not or is not currently expected to be able to manage the needs of multiple stores but may be a necessary requirement for the future of the Whole Knockoffs brand expansion.

2.2 Product Functions

- Shopping list creation - The shopping list creation tools will allow customers to build/fill their shopping carts with all of the items desired to purchase and store the shopping list for later purchase through the web page or to take the shopping cart/list with them as they browse the store in person.

- Online checkout - The web page will offer the ability for customers to purchase all or some of the items in their cart in addition to selecting the type of delivery/pickup they desire.

- Delivery/pickup of items - Functions to alert employees of customer's preferred delivery method suites their lifestyle most comfortably, alerting employees to the method by which they are to aid the customer in obtaining their goods.

2.3 User Classes and Characteristics

There are two main user classes, customers and employees. These two classes are broken down into paths for customers and roles for employees. Customer paths will involve member and guest checkout, will feature shopping cart/list functionality and will allow the customer to choose much of the shopping process from the site. Employee roles will guide the employees through their in-store duties and through their duties that come directly from the web page.

2.4 Constraints

There are several constraints to the system, none of these constraints focus around integration/s of other systems or regulatory policies so far as the development team knows at this time. Reliability requirements could be a major concern for the web page during periods of high traffic to the site and during times of low availability for certain products. Additional logging and/or auditing capabilities may be required for legitimizing transactions on the site, but these requirements have not yet been mentioned by the customer for either the employee/shopping portions of the site.

2.5 Assumptions and Dependencies

Several future dependencies could change the requirements for the *WKGS* purchasing/employee website. Integration with other shopping applications could alter the amount of information displayed by the website and how the website handles user paths during their shopping experience. There are few user dependencies for the system given the online/in-person shopping alternatives that *WKGS* will offer to their customers. User login and checkout will not necessary store user information and will not mandate account creation to checkout using the online system.

3 Specific requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

When a customer first visits the *WKGS* website, the user will initially see a page similar to Figure 3.1. This page will show the customer deals that the store wants to promote. When the customer clicks on an item box, an item details page similar to the one in Figure 3.2 should be shown. From this page, the user can view details about the item, view images of the item, and add the desired quantity to the shopping cart.
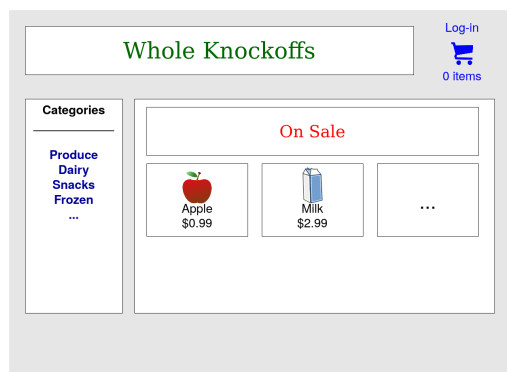

Figure 3.1: Homepage
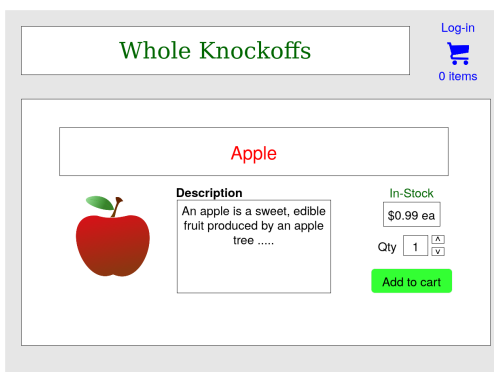
Figure 3.2: Item Page

When the customer clicks on the cart icon, the customer can then view a list, the quantity, and the total price for the items that the customer selected. Using an interface similar to Figure 3.3, the customer can change the quantity and review their order. If

the customer is not logged in to the system, they will be prompted to login to the page shown in Figure 3.4.

Figure 3.3: Customer Cart

Figure 3.4: Login Page

When the customer is logged in, the customer will then be presented with the payment screen. If the customer does not have any stored page information or the customer is a guest, they will be presented with a customer interface similar to Figure 3.5. After the customer's payment method is approved, The customer will be able to move to select how they would like to obtain their groceries. If the customer wishes to have their groceries delivered, they will be presented with an interface similar to Figure 3.6.

Figure 3.5: Payment Info

Figure 3.6: Delivery Selection Page

If the customer selects pickup to obtain their groceries, they will see an interface similar to Figure 3.7. After the customer has finished entering the required information, The customer will be presented with an order summary that shows them a confirmation of their order. This interface is shown in Figure 3.8.
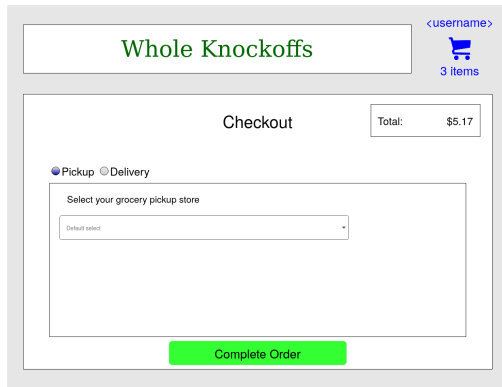
Figure 3.7: Pickup Selection Page
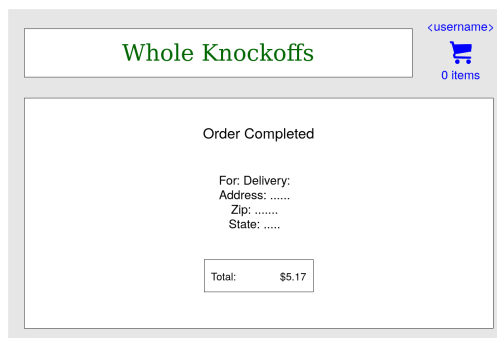
Figure 3.8: Order Completion Page

3.1.2 Hardware Interfaces

Because the customer is responsible for the hardware and the inventory system, this application will not directly interface with hardware components.

3.1.3 Software Interfaces

The website must communicate with the inventory system for tracking and maintaining accurate inventory counts. Using the existing customer's inventory API, the web site will communicate with the inventory system to obtain item quantities and item prices. The web site will also deduct item quantities once purchases are complete.

3.2 System Features

3.2.1 Online checkout

3.2.1.1 Introduction/Purpose of feature

The checkout feature allows users to pay for their item(s) currently in the Shopping list to complete their order. Depending on type of customers, the feature should preload required customer's information for the checkout process including: home address for delivery, billing address, and payment method. Furthermore, the customers can specify payment and delivery options on the checkout page.

3.2.1.2 Associated functional requirements

3.2.1.2.1 Online checkout functional requirement 1

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ID: FR1
TITLE: Allow customers to checkout online
DESC: The checkout feature should allow all customers to pay for their item(s) currently in the Shopping list to complete their order. Depending on type of customers, the feature should preload and/or request required customer's information for the checkout process including home address for delivery, billing address, and payment method. Furthermore, the customer can specify payment and delivery options on the checkout page.
RAT: In order for all users to pay for their online order.
DEP: None

ID and Name: FR1   Allow everyone to checkout online

Created By	Thoai Mai	Date Created	03/15/2020
Primary Actor	Guest customer	Secondary Actor	Website
Description:	The checkout feature should let guest customer complete online order with the required information, including payment and home delivery/in-store pickup options		
Trigger:	Guest customer clicks on option "checkout"		
Preconditions	None		
Postconditions	Guest customer successfully complete checkout for online orders, Payment received		
Normal Flow	**Allow everyone to checkout online – Guest Customers** 1. Guest customer selects checkout option 2. Website checks for type of customer *Note: prompt for account login? Direct for different req path?* 3. Website established guest customer 4. Website validates accurate pricing with additional taxes for total price 5. Website requests guest customer the following information: name, payment information, billing address, option for home deliver or in-store pickup 6. Guest customer select "Place Order" option 7. Website uses third party checkout system to validate payment transaction 8. If payment is successfully validated and received, website acknowledges "Order Place" message		
Alternative Flow	None		
Exceptions	Payment did not successfully validate Guest customer did not fill in the required information		
Priority	High		

Created By	Thoai Mai	Date Created	03/15/2020
Primary Actor	Member Customer	Secondary Actor	Website
Description:	The checkout feature should let member customer complete online order with the required information, including payment and home delivery/in-store pickup options		
Trigger:	Member customer clicks on option "checkout"		
Preconditions	Logged in as a member		
Postconditions	Member customer successfully complete checkout for online orders, Payment received		
Normal Flow	**Allow everyone to checkout online – Member Customer** 1. Member customer selects checkout option 2. Website checks for type of customer 3. Website established member customer 4. Website preloads member information: name and address 5. Website validates accurate pricing with additional taxes for total price 6. Website requests member customer the following information: payment information, billing address, option for home deliver or in-store pickup *Note: should website keep payment information for customers*? 7. Guest customer select "Place Order" option 8. Website uses third party checkout system to validate payment transaction 9. If payment is successfully validated and received, website acknowledges "Order Place" message		
Alternative Flow	None		
Exceptions	Payment did not successfully validate		
Priority	High		

3.2.2 Account Management System

3.2.2.1 Introduction/Purpose of feature

This feature allows customers to create and edit settings for grocery store accounts. New customer will use this feature to populate basic account information while setting up their account such as username and password. In addition, this feature allows existing customer (member) a convenient way to edit their password, change delivery addresses, manage stored payment information, and change other stored personal information. From the customer management profile, customers will also be able to see past purchases and orders.

3.2.2.2 Associated functional requirements

3.2.2.2.1 Account Management System functional requirement 1
ID: FR2
TITLE: Create a new customer account
DESC: A customer should be able to register through the website. The customer must provide username, password and e-mail address.
RAT: In order for a customer to register an account
DEP: None

ID and Name: FR2   Create a new member account

Created By	Emmanuel .W	Date Created	03/13/20
Primary Actor	Customer	Secondary Actor	Website
Description:	A customer should be able to register through the website. The customer must provide a name, username, password and e-mail address.		
Trigger:	Customer clicks on "Register" option		
Preconditions	None		
Postconditions	Account is created, Customer is Logged in		
Normal Flow	**Create a new Member account** 1. Customer Clicks on "Register". 2. Customer enters name, user-name, password, and e-mail address. 3. Website confirms it is a unique entry and saves the new member details. 4. Website informs customer of successful creation. 5. Website logs the customer in.		
Alternative Flow	None		
Exceptions	Email Address already exists in the system		
Priority	High		

3.2.2.2.2 Account Management System functional requirement 2
ID: FR3
TITLE: Create a new Staff account
DESC: An administrator should assign staff roles and permissions and an internal company email address
RAT: In order for a user/staff to register an account
DEP: None

3.2.2.2.3 Account Management System functional requirement 3
ID: FR4
TITLE: Login into Account
DESC: Given that a user/staff has created an account, then the user should be able to log in to his/her account.
RAT: In order to identify a user to shop online and use website/store's features or for staff to access admin platform
DEP: FR2

3.2.3 Inventory

3.2.3.1 Introduction/Purpose of feature

This section details what features of the how the website shall communicate with the inventory system. This shall includes when specific features of the inventory system will be queried and accessed.

3.2.3.2 Stimulus/Response sequence

Web site: request quantity for item number
Inventory: return item number and quantity in stock
Website: request price for item number
Inventory: return item number and price
Web site: submit item number and quantity purchased
Inventory: decrement item quantity for specified items

3.2.3.3 Associated functional requirements

3.2.3.3.1 Inventory functional requirement 1
ID: FR5
TITLE: Inventory Quantity Query
DESC: The system shall request item quantities from the inventory API. The inventory system shall respond with the specified item number along with the quantity of that item available for purchase. The inventory system returns the item number to verify the request.
RAT: In order for the customer to know which items are available
DEP: None

3.2.3.3.2 Inventory functional requirement 2
ID: FR6
TITLE: Inventory Price Query
DESC: The system shall request item price from the inventory API. The inventory API shall return the item number and the item price.
RAT: In order for the customer to know which items are available
DEP: None

3.2.3.3.3 Inventory functional requirement 3
ID: FR7
TITLE: Decrease Item Count
DESC: The system shall send a request to the inventory API to decrement an item count when the customer completes an order. The request shall contain the item number and the quantity that the customer has purchased. The inventory API shall then decrement the count for the specified item.
RAT: In order to maintain accurate inventory information
DEP: None

3.2.4 Storefront System

3.2.4.1 Introduction/Purpose of feature

This feature allows customers on the website to see which items the grocery store has available to purchase as well as the item price and description. From the digital storefront, customers can also add different quantities of products to their shopping list and shopping cart. Products sold by the grocery store are divided into different categories to allow customers to easily browse items of specific types. In addition, a search is available for customers to locate a specific item quickly.

3.2.4.2 Associated functional requirements

3.2.4.2.1 Storefront System functional requirement 1
ID: FR8
TITLE: Storefront homepage
DESC: When the user enters the website URL, they shall be brought to a homepage. The homepage shall contain navigation buttons for the user and listings of items that WKGS wishes to feature.
RAT: So that a customer can navigate the website.
DEP: None

3.2.4.2.2 Storefront System functional requirement 2
ID: FR9

TITLE: Display items in inventory

DESC: When a category is selected, the storefront shall display all items matching the selected category that are in inventory.

RAT: So that a customer can quickly find items.

DEP: FR5

ID and Name: FR9   Display items in inventory

Created By	Matthew M.	Date Created	03/14/20
Primary Actor	Storefront	Secondary Actor	Inventory
Description:	A customer should be able to select a category on the website to filter the item type displayed.		
Trigger:	Customer selects a category filter		
Preconditions	Items have category specified		
Postconditions	The storefront displays only items that have the specified category		
Normal Flow	1. The customer selects a store category from the homepage of the website 2. The website shall update the list of displayed items with the selected category		
Alternative Flow	1. The customer selects an item from the homepage		
Exceptions	No items with the selected category exist		
Priority	High		

3.2.4.2.3 Storefront System functional requirement 3
ID: FR10

TITLE: Search for available store items

DESC: When a search term is entered in the searchbox, the storefront shall display all items matching the query.

RAT: So that a customer can quickly find items.

DEP: FR5

3.2.4.2.4 Storefront System functional requirement 4
ID: FR11

TITLE: Display store item details

DESC: When the customer clicks on an item on the storefront, the item details are displayed. The details include a product description and price

RAT: So that a customer can know what they are buying
DEP: FR9

3.2.4.2.5 Storefront System functional requirement 5
ID: FR12
TITLE: Display sale items to customers
DESC: When a customer logs-in to the website, the homepage shall display sale items for.
RAT: So that a customer can know what they are buying.
DEP: FR4

3.2.4.2.6 Storefront System functional requirement 6
ID: FR13
TITLE: Display add quantity to cart
DESC: On the item details page, the customer shall be presented with an quantity selector which will be added to the cart when the "Add to cart" button is pressed.
RAT: So that a customer can purchase items
DEP: FR15, FR11

3.2.5 Shopping cart/list

3.2.5.1 Introduction/Purpose of feature

The shopping cart/list feature allows the user to manage their selected store item(s). The feature includes information on item's price, availability, and location in the store. In addition, the user can change the quantity of item(s) to be purchased or remove item(s) from the shopping cart/list.

3.2.5.2 Stimulus/Response sequence

Existing users/members/guest: The users can edit item's quantity and remove item from shopping list/cart. When the users are satisfied with their selected items, they can click the "Checkout" option to begin the checkout process.

Existing users/members: The users are allowed to save shopping lists to their account.

3.2.5.3 Associated functional requirements

3.2.5.3.1 Shopping cart/list functional requirement 1
ID: FR14
TITLE: Cart/list persistence
DESC: Each customer and guest shall have a persistent record of which items are currently in their cart and shopping list.
RAT: Allow customers and guests to track which items they wish to purchase.
DEP: None

3.2.5.3.2 Shopping cart/list functional requirement 2
ID: FR15
TITLE: Add items to cart
DESC: When the customer selects an "Add to cart" option, the cart shall display the item name, quantity, and price in the cart.
RAT: Allow customers and guests to track which items they wish to purchase.
DEP: None

3.2.5.3.3 Shopping cart/list functional requirement 3
ID: FR16
TITLE: Add items to list
DESC: When the customer selects an "Add to shopping list" option, the shopping list shall display the item name, quantity, and price in the cart.
RAT: Allow customers and guests to track which items they wish to purchase in store.
DEP: None

3.2.5.3.4 Shopping cart/list functional requirement 4
ID: FR17
TITLE: Remove items to cart/list
DESC: When the customer selects the "remove" option, the item shall be removed from the cart/shopping list.
RAT: Allow customers and guests to track which items they wish to purchase.
DEP: None

3.2.5.3.5 Shopping cart/list functional requirement 5
ID: FR18
TITLE: Change item quantity in cart/list
DESC: The customer shall be able to change the quantity of each item in the cart/list.
RAT: Allow customers and guests to track which items they wish to purchase.
DEP: None

3.2.5.3.6 Shopping cart/list functional requirement 6
ID: FR19
TITLE: Buy items from the shopping cart
DESC: When the customer clicks on the "Proceed to checkout" option in the cart interface, the customer shall be brought to the online checkout system.
RAT: Allow customers and guests to track which items they wish to purchase
DEP: FR1

3.2.6 Employee

3.2.6.1 Introduction/Purpose of feature

The employee feature allows the management of employees' time cards and tasks. Managers will be able to assign different tasks such as delivery, prepare online orders, etc. In addition, managers should be able to view and edit employee scheduled work days. The system should track and display information about employee hours worked and display it to managers.

3.2.6.2 Associated functional requirements

3.2.6.2.1 Employee functional requirement 1
ID: FR20
TITLE: Employee login
DESC: All employees shall be able to log-in to the employee page.
RAT: So that the employees can view their schedules
DEP: None

3.2.6.2.2 Employee functional requirement 2
ID: FR21
TITLE: Add employee
DESC: Managers shall be able to add employee from the company.
RAT: So that the employee know their current working status within the company
DEP: None

3.2.6.2.3 Employee functional requirement 3
ID: FR22
TITLE: Remove employee
DESC: Managers shall be able to remove employee from the company.
RAT: So that the employee know their current working status within the company
DEP: None

3.2.6.2.4 Employee functional requirement 4
ID: FR23
TITLE: Employee role
DESC: Employees shall have a role such as manager, owner, cashier, etc... The employee role will dictate what privileges and features the employee have access.
RAT: So that managers can manage the company
DEP: FR21

3.2.6.2.5 Employee functional requirement 5
ID: FR24
TITLE: Manager assign work days
DESC: Managers shall be able to schedule work days to employees. The manager must be able to set which hours for every day of the week for each employee.
RAT: So that employees can know which days to work
DEP: FR23

ID and Name: FR24   Manager assigns work days

Created By	Matthew Moore	Date Created	03/123/2020
Primary Actor	Manager(user)	Secondary Actor	Website

Description:	Managers shall be able to schedule work days to employees. The manager must be able to set which hours for every day of the week for each employee.
Trigger:	Manager clicks on an employee to assign hours in the work scheduler portion of the website
Preconditions	The employee exists and is able to be assigned work hours
Postconditions	Employee has hours assigned for the next work week stored for their account
Normal Flow	**Manager assigns work hours** 1. Manager shall select a user from a dropdown box 2. Manager shall select a week from a dropdown box 3. The website shall present a week view for each of the days of that week 4. The manager shall select a day from the week view 5. The manager shall select the start and stop time of the employees shift from a dropdown box 6. The manager shall click "Save" 7. The website shall store the configuration to the employee's profile
Alternative Flow	None
Exceptions	Employee is already working in the selected timeframe
Priority	Low

3.2.6.2.6 Employee functional requirement 6
ID: FR25
TITLE: Employee view assigned work schedule
DESC: Employees shall have a page where they can view their assigned schedule for the week. The schedule will show which days they will work and what hours they must work.
RAT: So that employees can know which days to work
DEP: FR24

3.2.6.2.7 Employee functional requirement 7
ID: FR26
TITLE: Employee clock-in/clock-out
DESC: Employees must have a page where they clock in or out for their work day. If an employee is not currently clocked in, they will be presented with an option to clock in. If an employee is clocked in, they must be presented with an option to clock out.

RAT: So that managers can know how long an employee worked
DEP: FR**??**

3.2.7 Delivery/Pickup System

3.2.7.1 Introduction/Purpose of feature

This feature shall allow customers to select where they want to obtain their groceries once they have completed their purchase online, both in-store pickup and home delivery options will be available. The system shall assign an employee to prepare an online order once received by the system and will notify the delivery employee or customer when an online order is ready.

3.2.7.2 Associated functional requirements

3.2.7.2.1 Delivery/Pickup System functional requirement 1
ID: FR27

ID and Name: FR27   Delivery address validation

Created By	Thoai Mai	Date Created	03/23/2020
Primary Actor	Customer	Secondary Actor	Website
Description:	The website shall check for customer's choice of delivery or in-store pickup for payment processed online order and validate for delivery address.		
Trigger:	Customer clicks on option "Place Order"		
Preconditions	Payment was successfully received		
Postconditions	Website obtains delivery address Online order completes		
Normal Flow	**Delivery address validation** 1. System shall check for delivery address information if delivery option was selected by customer 2. If delivery address is missing, the website shall prompt customer for delivery address and option to have online order as in-store pickup 3. Customer fills in delivery address or select in-store pickup option 4. Customer clicks the "Submit" option 5. If delivery address found, the website shall add delivery address information to the complete online order 6. If customer picks in-store pickup, the website shall direct customer to FR30 response sequence.		
Alternative Flow	None		
Exceptions	Payment did not successfully validate Customer did not fill in delivery address information		
Priority	High		

3.2.7.2.2 Delivery/Pickup System functional requirement 2
ID: FR28

ID and Name: FR28   Receive online order for delivery

Created By	Thoai Mai	Date Created	03/23/2020
Primary Actor	Employee	Secondary Actor	Website
Description:	After order is complete, the website shall notify employee with order details		
Trigger:	User clicks on option "Place Order" Customer clicks on option "Submit" in FR27		
Preconditions	Payment was successfully received Website obtains all required customer's information Online order successfully processed		
Postconditions	Delivery driver employee is notified to deliver order		
Normal Flow	**Receive Online Order For Delivery** 1. The website shall notify an employee with the online order details 2. The website shall list the item(s) needed to be collected from the store 3. Employee completes item collection and package items for delivery 4. Employee clicks "Order ready" 5. The website will notify delivery driver employee of readied order with delivery address		
Alternative Flow	None		
Exceptions	No employee found		
Priority	High		

3.2.7.2.3 Delivery/Pickup System functional requirement 3
ID: FR29

ID and Name: FR29   User selects pickup time

Created By	Thoai Mai	Date Created	03/23/2020
Primary Actor	Customer	Secondary Actor	Website
Description:	The website shall check for customer's choice of in-store pickup for payment processed online order and validate for pickup time.		
Trigger:	Customer clicks on option "Place Order"		
Preconditions	Payment was successfully processed Website obtains all required customer's information		
Postconditions	Website obtains customer's desired in-store pickup time Online order completes		
Normal Flow	**User select pickup time** 1. The website shall check if the in-store pickup option is selected 2. The website shall prompt for customer desired time to pick up order 3. Customer shall input desired time to pick up order and click "Submit" 4. The website shall use input time to prioritize order to be collected in store by employee 5. The website shall display a message to the customer with estimated time when the order is ready for in-store pickup		
Alternative Flow	None		
Exceptions	No employee found		
Priority	High		

3.2.7.2.4 Delivery/Pickup System functional requirement 4
ID: FR30

ID and Name: FR30   Receive online order for in-store pickup

Created By	Thoai Mai	Date Created	03/23/2020
Primary Actor	Employee	Secondary Actor	Website
Description:	The website shall check for customer's choice of in-store pickup for payment processed online order and validate for pickup time.		
Trigger:	Customer clicks on option "Submit" in FR29		
Preconditions	Payment was successfully received Website obtains all required customer's information Online order successfully processed		
Postconditions	Customer receives order ready to be pickup in store notification		
Normal Flow	**Receive online order for in-store pickup** 1. The website shall notify an employee with the online order details 2. The website shall list the item(s) needed to be collected from the store 3. Employee completes item collection and package items for in-store pickup 4. Employee clicks "Order ready" 5. The website shall notify customer that their online order is ready for in-store pickup		
Alternative Flow	None		
Exceptions	No employee found		
Priority	High		

3.3 Non-functional requirements

3.3.1 Login Security

System shall transmit user credentials in an encrypted form. This will prevent attackers from easily viewing the customer's credentials as they are transmitted.

3.3.2 Mobile Usability

The website shall be mobile supported.

3.3.3 Website Usability

The website's storefront shall use a legible font with a font size 12 pt or larger to promote consumer's usabilities.

3.3.4 Payment Security

The website shall protect consumer's personal data.

3.4 Performance Requirements

3.4.1 Inventory query response time

When a query is made to the inventory database, the system should not take more than 500 milliseconds to respond. This is to ensure that requests are handled quickly and the system does not become backlogged with requests.

3.4.2 Storepage Load Time

The website storefront shall load swiftly; the website should not take longer than 5 seconds to load. The average loading speed for each page should be 3 seconds with high speed internet connection.

3.5 Design constraints

3.5.1 Hardware Requirements

The system shall use a machine with 3GHz Quad CPU, 8GB RAM, 800MB database space, and 10GB disk space for minimum operation and will be subject to increase depending on performance test and storage needs.

3.5.2 API Integrations

APIs from different sub-systems have been used to develop the grocery store, these include APIs from inventory management system, payment gateway, location tracking systems and other smaller systems. Any updates to these systems that changes the API Integration will need refactoring to resolve any issue.

3.6 Software quality attributes

3.6.1 Reliability

While searching the system customers shall receive correct results on item searches concerning availability, price, and other item specific details. Delivery time and method will also be guaranteed through the website.

3.6.2 Availability

The system shall be accessible online at all times except in an instance where maintenance/upgrade is ongoing and a notification has been broadcast.

4 Appendixes

4.1 Appendix A: User Stories

- Feature: Grocery Storefront
    - As the store owner
    - I want customers to be able to quickly see what items are available for purchase
    - So that customers can quickly and easily purchase groceries.

- Feature: In-store pickup
    - As the store owner
    - I want customers to be able to pickup groceries in-store
    - So that I can sell more groceries

- Feature: In-store pickup
    - As a customer
    - I want to be able to pickup groceries in-store
    - So that I can conveniently get my groceries

- Feature: Add update item count
    - As an inventory manager
    - I want to be able to update the item quantity
    - So that I can track new items when the shelves are restocked

- Feature: View Schedules
    - As an employee
    - I want to be able to see my assigned schedule
    - So that I will know which days to go to work.

- Feature: Assign employee schedules
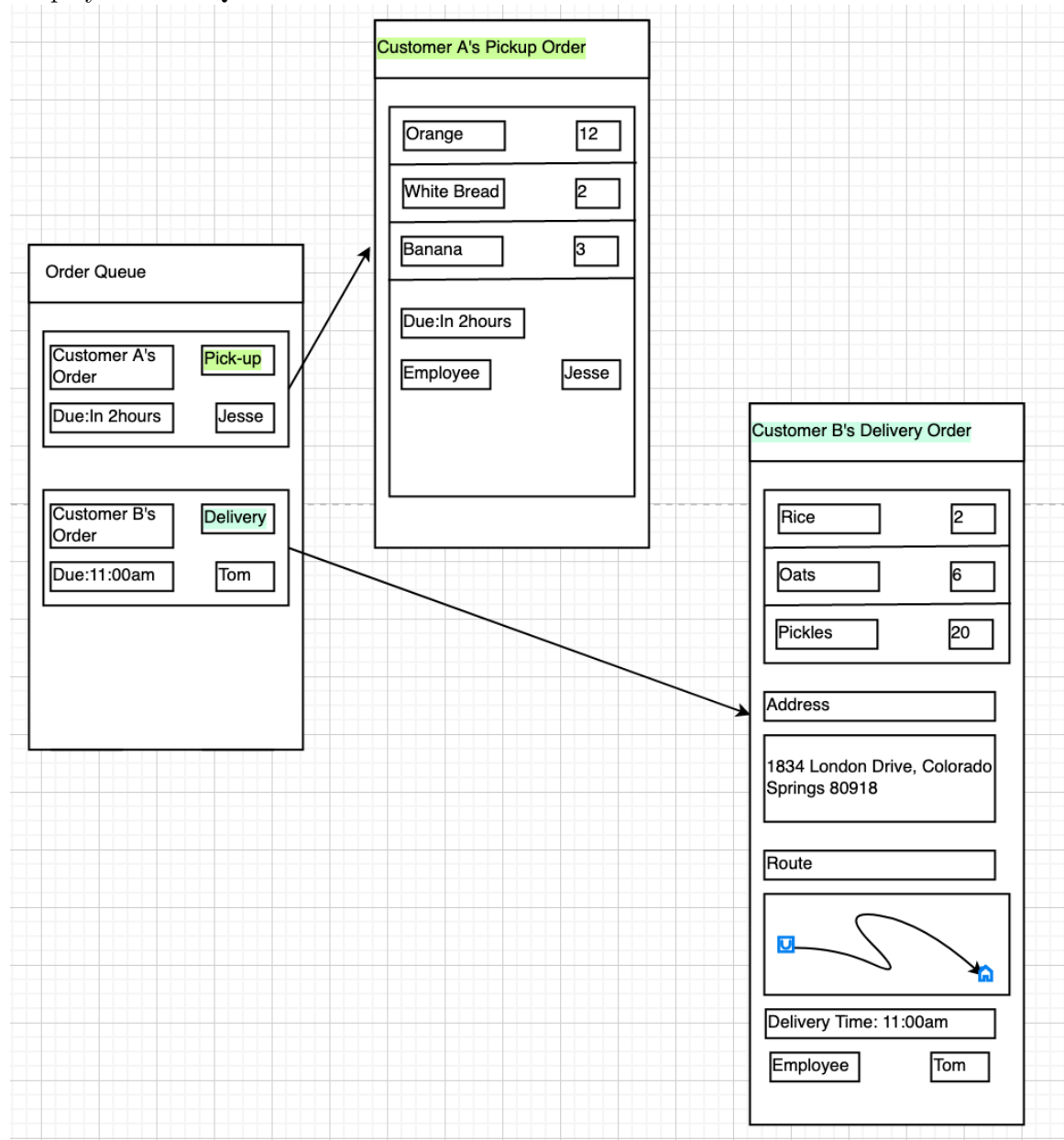   - As an employer

- ○ I want to be able to assign hours to work for each employee for the week

- ○ So that the employees will know when they are supposed to work

- Feature: Track employee hours worked

  - ○ As an employer

  - ○ I want to be able to see the hours worked for each employee

  - ○ So that I can know how much each employee needs to be paid

- Feature: Create a new account on online website

  - ○ As a new consumer

  - ○ I want to become a member

  - ○ So that I can start shopping online with convenient and utilizing website/store's features and earn reward points

- Feature: Login into grocery's website

  - ○ As a member

  - ○ I want to order grocery online

  - ○ So that I can pick-up my online order in-store to save time

- Feature: Create an online shopping list

  - ○ As a member

  - ○ I want to check for item's availability at the store

  - ○ So that I can decide whether to go to the store

- Feature: Order grocery online to be delivered to resident

  - ○ As a member or guest

  - ○ I want to order grocery online and have it delivered to my home

  - ○ So that I don't need to leave my house and save time

- Feature: Gathering summaries of consumer orders

  - ○ As an Online Orders Manager

  - ○ I want to see consumer orders in an easy to read organized format

  - ○ So that I can assign online orders to store employees to complete the orders in a timely manner

- Feature: Options to add item into cart or shopping list

  - ○ As a member or guest

- I want to have the options to decide if the item will be in the cart or shopping list
- So that I can make the purchase at a later time

- Feature: Display Customer Shopping list to delivery/pickup employees
  - As a delivery/pickup employee
  - I want to see the customer's shopping list assigned to me
  - So that I can start shopping for the customer's order

- Feature: User Confirmation System
  - As a pickup employee
  - I want to see the customer's details
  - So that I can confirm the customer's identity and handover the pickup order

- Feature: Show Delivery Details and route to delivery employee
  - As a delivery employee
  - I want to see the customer address, contact details and best route to the address
  - So that I can deliver the order to the customer

- Feature: Display Customer Rewards
  - As a registered customer
  - I want to see the reward points accrued over time
  - So that I can claim the rewards and make purchases

- Feature: Self Checkout Manager
  - As the checkout system
  - I want to scan grocery items
  - So that I calculate prices, collect user payment and dispense a receipt

- Feature: See which items are in stock
  - As a customer
  - I want to see which items are in stock
  - So that I can know which items are available for me to buy

- Feature: Maintain accurate inventory
  - As an inventory manager

- ○ I want the inventory system to keep track of the number of each item sold

- ○ So that an accurate inventory is maintained

- Feature: See available items to purchase

  - ○ As a customer

  - ○ I want to see a listing of available items

  - ○ So that I can make decisions on which items to buy

- Feature: List available items by category

  - ○ As a customer

  - ○ I want to be able to sort available items by category

  - ○ So that I can quickly find the items that I want

- Feature: Virtual shopping cart

  - ○ As a customer

  - ○ I want to be able to add and remove items from a virtual shopping cart

  - ○ So that I can keep track of the items that I wish to purchase for delivery or pickup

- Feature: Pay online

  - ○ As the store owner

  - ○ I want to accept payment on the website for online and in-store orders

  - ○ So that I can make a profit

4.2 Appendix B: Diagrams

Employee Order Queue:

Options to add item into cart or shopping list:

Item Name
$$

Aisle ## Bay ##
⊞

Add to Cart | Add to List

Shopping Cart

	Item Name	Unit Price	Qty	Price
O	Apple	$1.29	2	$2.58
O	Banana	$0.40	3	$1.20
O	Item Name	$$	#	$$
O	Item Name	$$	#	$$

Add Selected Item(s) to Shopping List   **TOTAL:** $$$$$

Remove selected item(s)   CHECKOUT

Shopping List

	Item Name	Unit Price	Qty	Price	Location	Availability
O	Apple	$1.29	2	$2.58	Aisle 09 Bay 05	In Stock
O	Banana	$0.40	3	$1.20	Aisle ## Bay ##	In Stock
O	Item Name	$$	#	$$	Aisle ## Bay ##	Out of Stock
O	Item Name	$$	#	$$	Aisle ## Bay ##	In Stock

Add Selected Item(s) to Cart   **TOTAL:** $$$$$

Remove selected item(s)