

1. System Vision Document

Bagel Land Operation System

Problem Description

Bagel Land is a deli-style restaurant and the owner wants a new system to help her manage inventory and cost. The system needs to keep track and calculate inventory and cost in portion size, and record different portion of inventory for different items. Also, the system should keep track with customers' selection and calculate cost associated with the order. What's more, the system needs to keep track of waste if the actual number of inventory is inconsistent with the number of inventory in system.

System Capabilities

The new system should do the following:

- Record inventory and cost in portion size
- Convert the quantity of ingredients into portion size
- Record portion of ingredients for on item level
- Keep track of waste
- Keep track of customers' selection and calculate cost of order
- Provide summary information about inventory and cost

Application Benefits

This system should provide the following benefits to aunt:

- Enable Joan to easily track inventory and cost
- Improve the efficiency of operation
- Facilitate Joan's decision making process

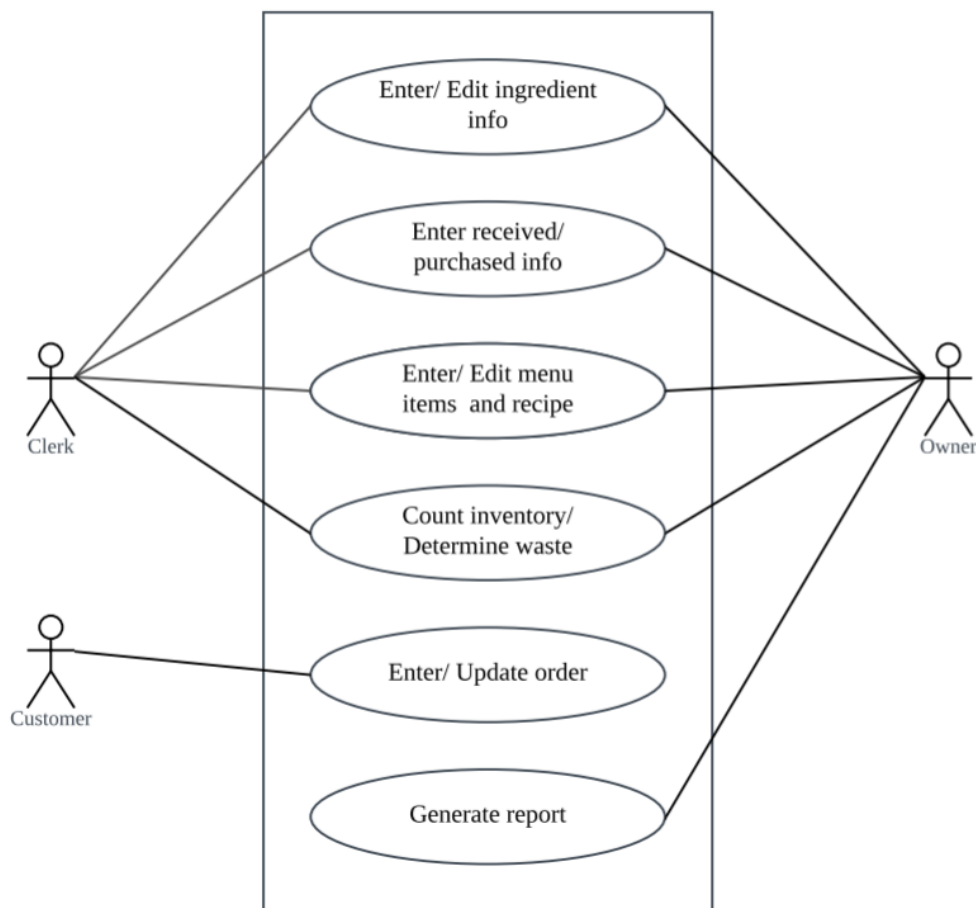
2. Subsystem

- Inventory subsystem
- Customer order subsystem
- Report subsystem

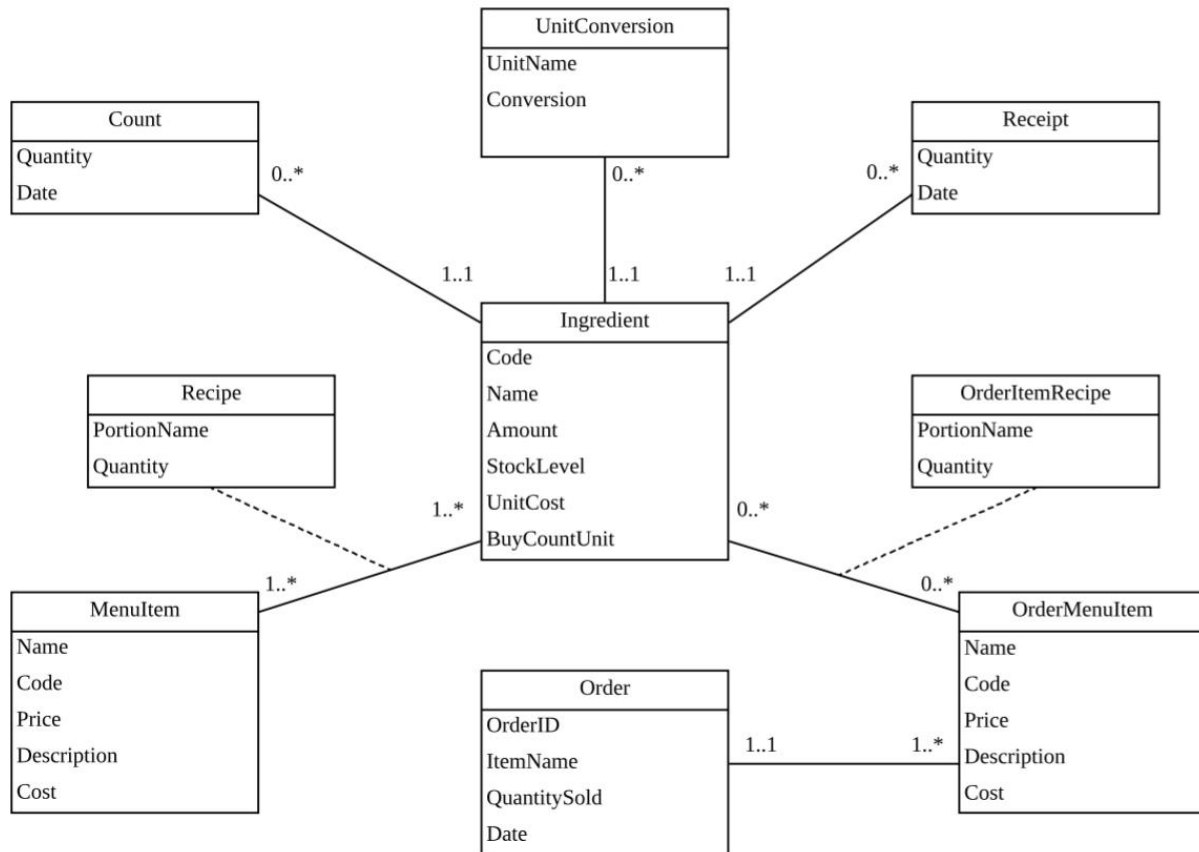
3. Use case

Use Case	Description
Enter/ Edit ingredient info	Enter information about ingredient, including setting up different units of measure and conversion, and recording the quantity of inventory.
Enter received/ purchased info	Enter or edit information about cost and quantity of ingredients purchased.
Enter/ Edit menu items and recipe	Enter or edit ingredient, recipe and price information about menu item.
Count inventory/ Determine waste	Count inventory to keep track waste.
Enter/ Update order	Record customer selection and amount of reducing inventory associated with an order.
Generate report	Get summary information about business operation.

4. Use case diagram



5. Domain model class diagram



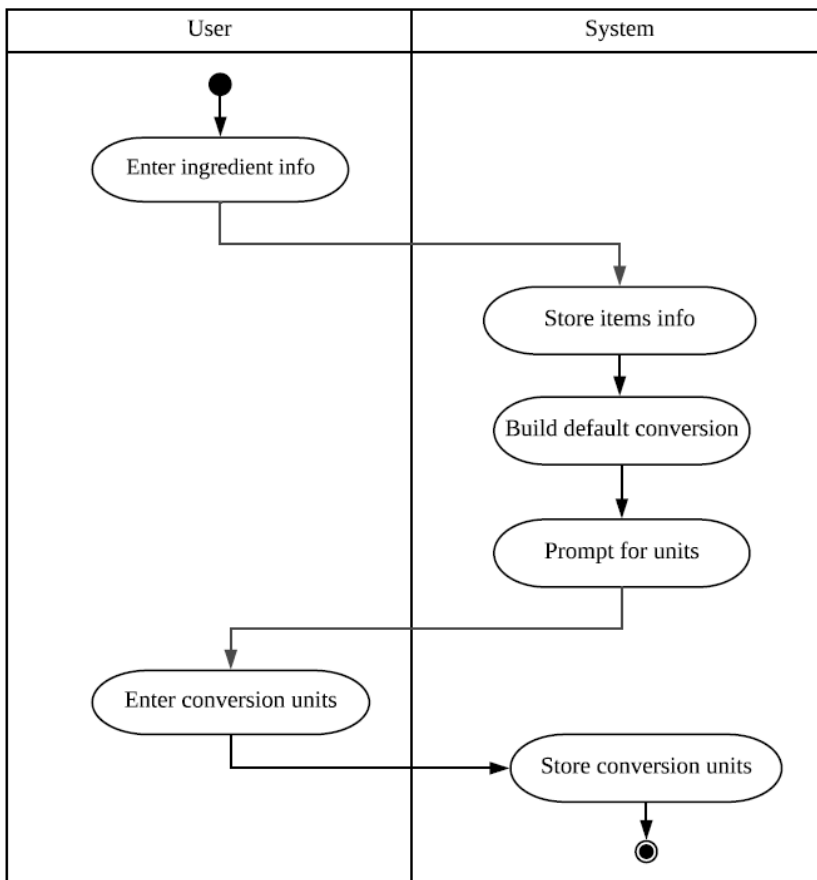
6. CRUD analysis

	Ingredient	Unit Conversion	Count	Receipt	Menu Item	Recipe	Order	Order Menu Item	Order Menu Item Recipe
Enter/ Edit ingredient info	CURD	CU							
Enter received/ purchased info	CU	R							
Enter/ Edit menu items and recipe					CURD	CURD			
Count inventory/ Determine waste			CU	CU					
Enter/ Update order							CURD	CURD	CURD
Generate report	R	R	R	R			R		

7. Fully defined use cases

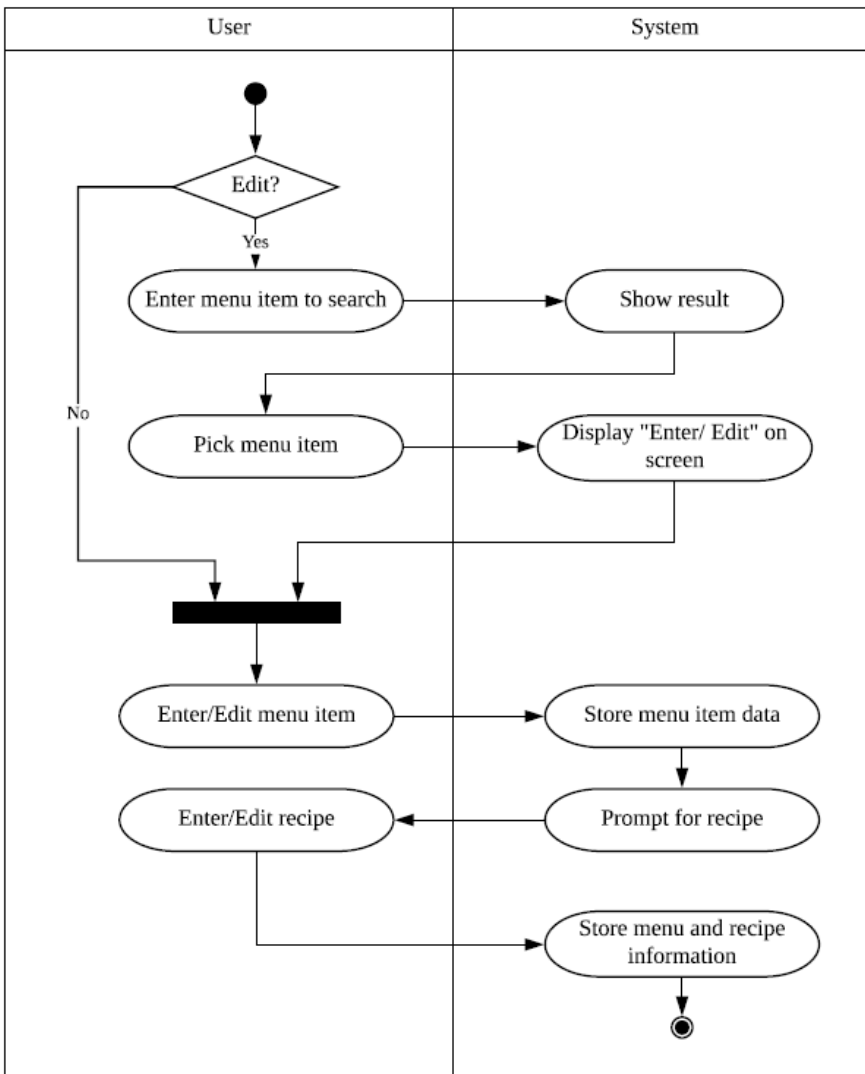
1) Enter/ Edit ingredient info

Use case name	Enter/ Edit ingredient info	
Scenario	Enter or update the ingredient information	
Triggering event	Enter or update the ingredient used for menu and customized item.	
Brief description	User enter the ingredient information into the system, including setting up different units of measure and conversion, and recording the quantity of inventory.	
Actor	Clerk / Owner	
Stakeholders	Owner	
Pre conditions	The ingredient unit is defined.	
Post conditions	Ingredient is in system.	
Flow of activities	Actor	System
	See workflow diagram below.	
Exception conditions		



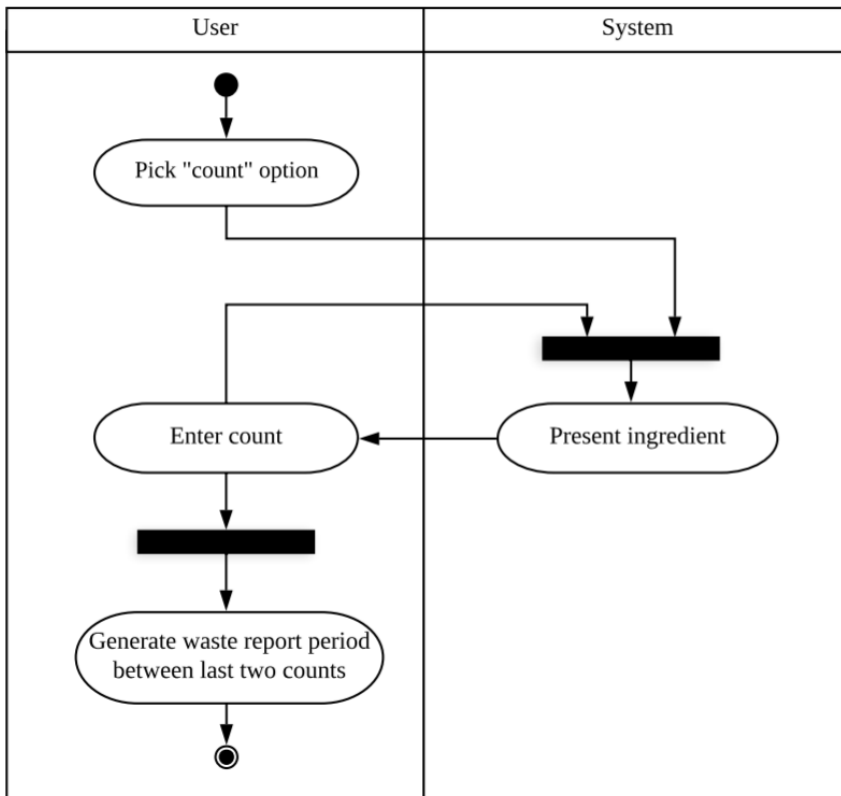
2) Enter/ Edit menu items and recipe

Use case name	Enter/ Edit menu items and recipe.	
Scenario	Enter or update menu item and build recipe for each item in system.	
Triggering event	Enter or edit ingredient, recipe and price information about menu item.	
Brief description	User lists the item on the menu and enter/ update ingredient, recipe and price information associated with the menu item.	
Actor	Clerk / Owner	
Stakeholders	Owner	
Pre conditions	Ingredient is in the system.	
Post conditions	Menu item with ingredient recipe and cost information is in system.	
Flow of activities	Actor	System
	See workflow diagram below.	
Exception conditions	The information of ingredient used for menu item was not stored in system.	



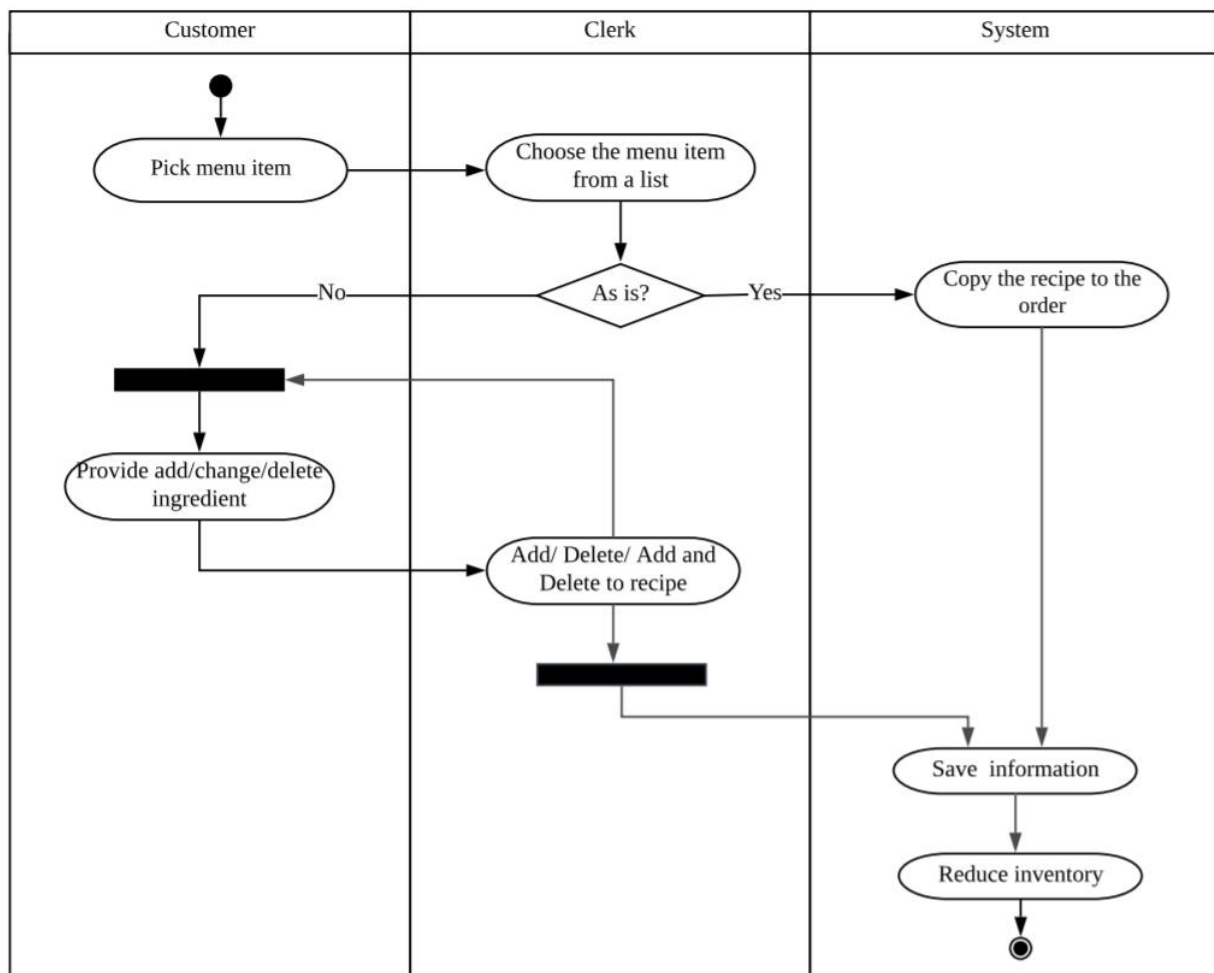
3) Count inventory/ Determine waste

Use case name	Count inventory/ Determine waste	
Scenario	Count inventory to keep track waste.	
Triggering event	Keep track of the waste for the tax deduction benefit and better business operation.	
Brief description	User count the inventory in store and compare the amount to the receipts in system to determine waste.	
Actor	Clerk / Owner	
Stakeholders	Owner	
Pre conditions	Receipts of ingredient are in system.	
Post conditions	The change of ingredient should be saved in system.	
Flow of activities	Actor	System
	See workflow diagram below.	
Exception conditions	The quantity of inventory in store is greater than the amount in receipts.	



4) Enter/ Update order

Use case name	Enter/ Update order	
Scenario	Count inventory to keep track waste.	
Triggering event	Keep track of the waste for the tax deduction benefit and better business operation.	
Brief description	Customer customize the order, and the system reduces the amount of inventory associated with the order.	
Actor	Customer/Clerk	
Stakeholders	Owner	
Pre conditions	Ingredient are in system.	
Post conditions	The customer selection should be saved and ingredient should be subtracted from the system.	
Flow of activities	Actor	System
	See workflow diagram below.	
Exception conditions	The ingredient selected is not available.	



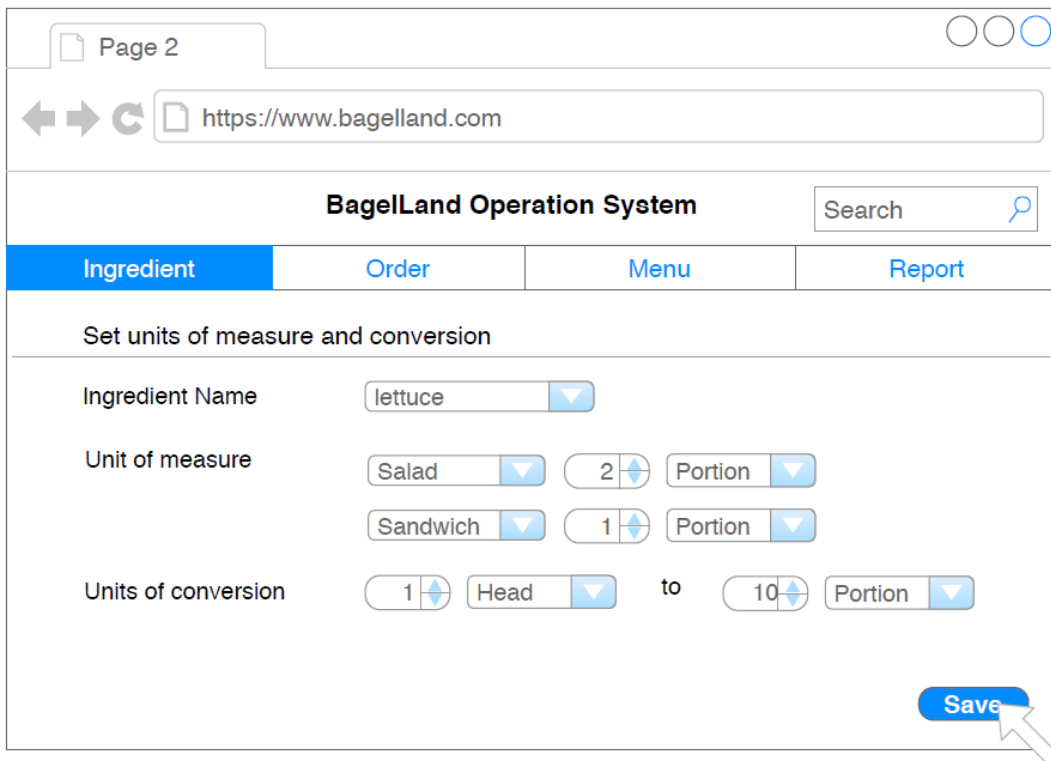
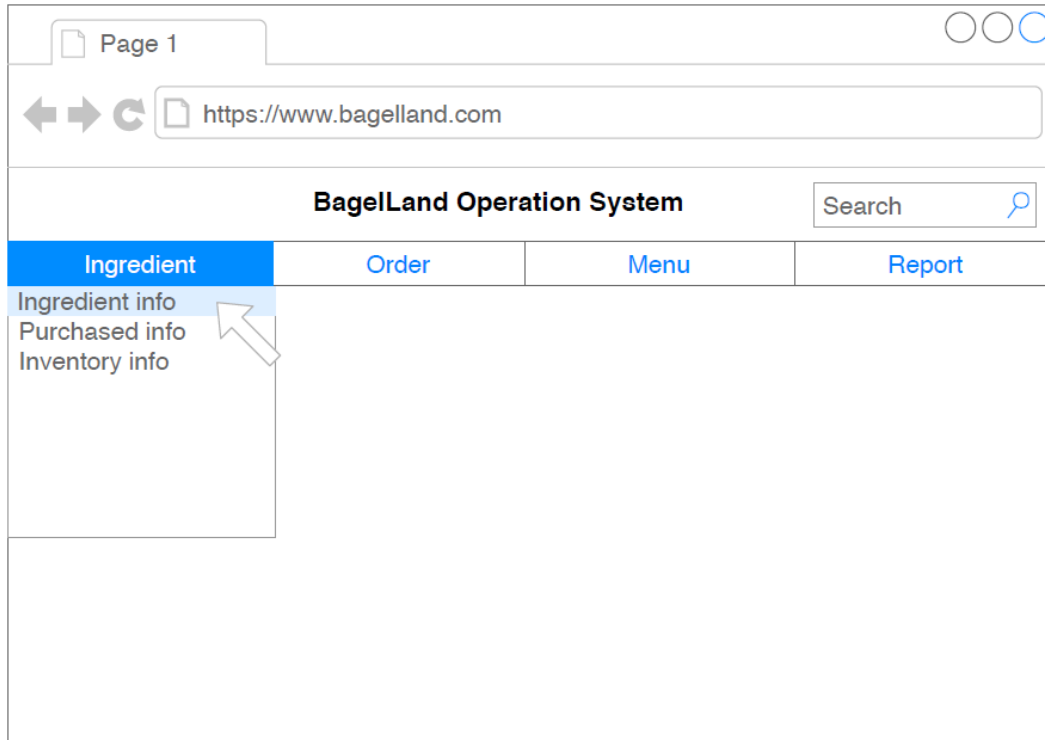
5) Enter received/ purchased info

Use case name	Enter received/ purchased info	
Scenario	Enter information about new purchased ingredient and total cost.	
Triggering event	A new purchase is made, and the user need to record the ingredient and cost information into system.	
Brief description	After a new purchase is made, users enter or edit information about cost and quantity of ingredients purchased.	
Actor	Clerk / Owner	
Stakeholders	Owner	
Pre conditions	The unit conversion is defined.	
Post conditions	Ingredient and cost information is in system.	
Flow of activities	Actor	System
	1. Open the screen used for entering purchased information. 2. Enter the cost and ingredient information.	1.1 Display the screen used for entering purchased information. 1.2 Prompt for input. 2. Save the input information.
Exception conditions	The ingredient information was not stored in system.	

6) Generate report

Use case name	Generate report	
Triggering event	To get summary information about inventory usage, ingredient cost and waste for the business decision-making process.	
Brief description	Extract inventory, waste information from the operating system, and generate summary report for business decision-making.	
Actor	Owner	
Stakeholders	Owner	
Related use cases	Count inventory/ Determine waste, Enter/ Edit ingredient info, Enter received/ purchased info	
Pre conditions	Information to be extracted is in system.	
Post conditions	Report is generated.	
Flow of activities	Actor	System
	1. Choose report to run 2. Enter parameter	1. Save the input parameter 2. Retrieve the date and present report
Exception conditions	The selected date is not available for the report.	

8. Storyboard



Page 3

https://www.bagelland.com

Bagelland Operation System

Search

Ingredient

Order

Menu

Report

Enter/Edit ingredient information

Ingredient Name

lettuce

Enter ingredient amount

20

Head

Save

Default conversion:

1 Head = 10 Portion

Page 4

https://www.bagelland.com

Bagelland Operation System

Search

Ingredient

Order

Menu

Report

Ingredient info

Purchased info

Inventory info

Page 5

https://www.bagelland.com

BagelLand Operation System

Search

Ingredient

Order

Menu

Report

Enter / Edit purchased info

Ingredient Name

lettuce

Quantity

12

Head

Total cost

35

[Add another ingredient](#)

Save

Page 6

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BagelLand Operation System

Search

Ingredient

Order

Menu

Report

Ingredient info

Purchased info

Inventory info

Page 7

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Bagelland Operation System

Search

Ingredient

Order

Menu

Report

Count inventory and determine waste

Ingredient Name

Lettuce

Enter count

45

Save

Last Count: 50 Heads

Page 8

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Bagelland Operation System

Search

Ingredient

Order

Menu

Report

☐ Salad

☐ Coffee

☒ Sandwich

☐ Burger

Customized ingredient

☐ Bagel

1

☐ Cheese

1

☐ Bacon

1

☐ Sausage

1

☐ Egg

1

☐ Ham

1

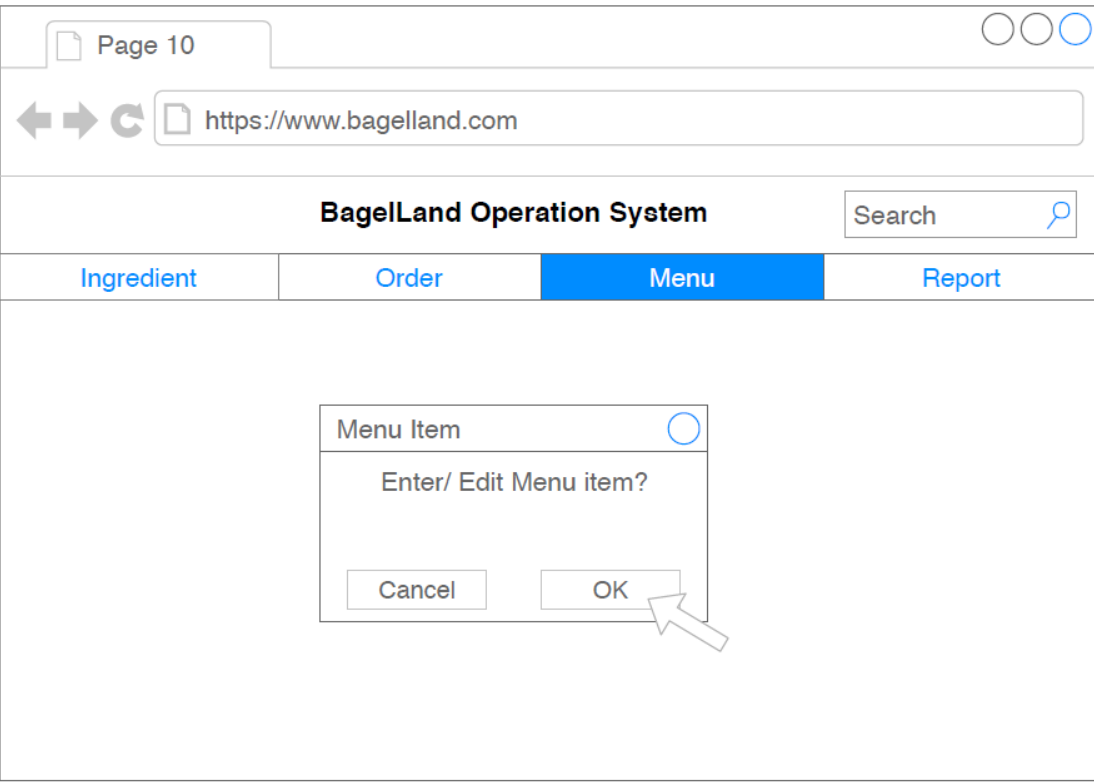
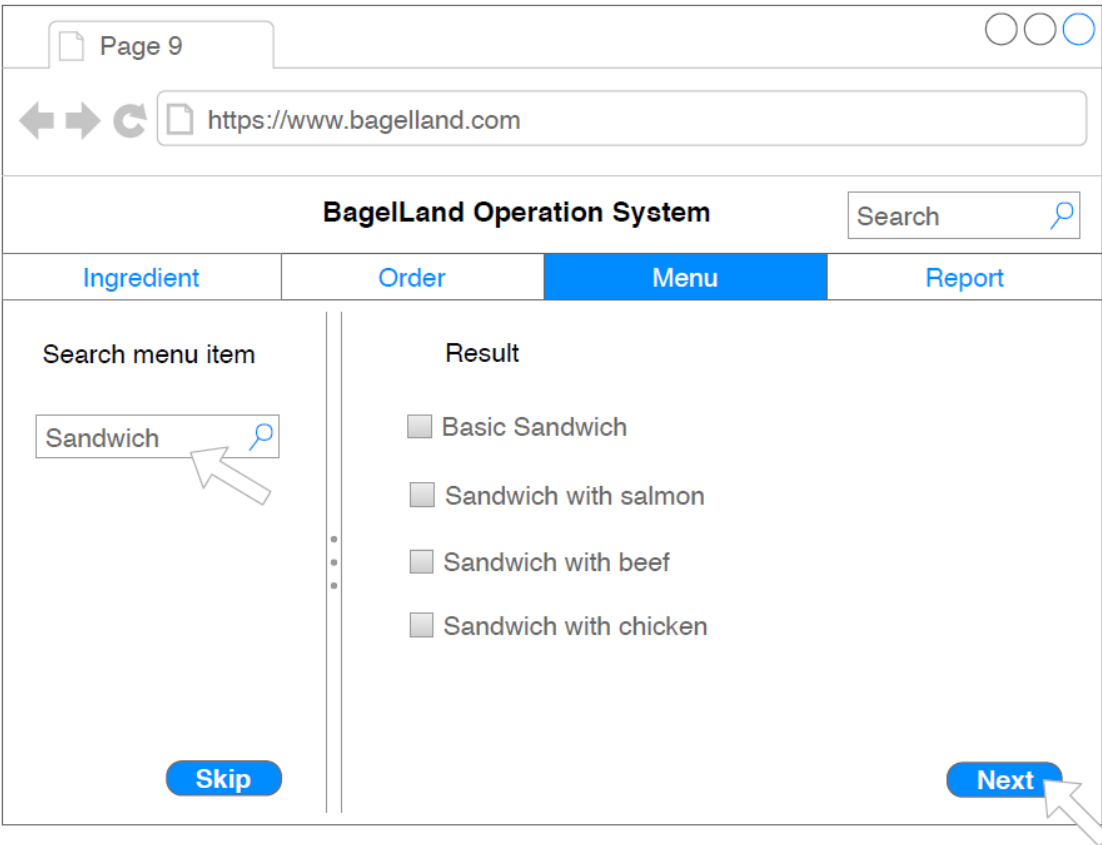
☐ Lettuce

1

☐ Tomato

1

Save



Page 11

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Bagelland Operation System

Search

Ingredient

Order

Menu

Report

Enter/ Edit Menu item and Recipe

Name

Basic Sandwich

Ingredient

Bagel

1

Egg

1

Bacon

1

Cheese

1

Save

Page 12

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Bagelland Operation System


Search

Ingredient

Sales

Menu

Report



Sign In

User Name:

Joan Lewis

Password:

SIGN IN

[Forgot Password?](#)

Page 13

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Bagelland Operation System

Search

Ingredient

Sales

Menu

Report

Select time period

<

October 2017

>

Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	6	7	8	9	10	11

Select field

☐ Inventory

☐ Waste

☐ Cost

Generate report

9. Database Design

Table	Attribute
Ingredient	ingredientCode , name, amount, stockLevel, unitCost, buyingCountUnit
UnitConversion	unitId , <i>ingredientCode</i> , unitName, conversion
Count	countId , <i>ingredientCode</i> , quantity, date
Receipt	receiptId , <i>ingredientCode</i> , quantity, date
MenuItem	itemCode , name, price, description, cost
Recipe	<i>itemCode</i> , <i>ingredientCode</i> , portionName, quantity
Order	orderId , itemName, QuantitySold, Date
OrderMenuItem	orderItemCode , <i>orderId</i> , name, price, description, cost
OrderMenuItemRecipe	orderItemCode, <i>ingredientCode</i> , portionName, quantity

10. System architecture diagram

