Inventory Module

Victoria buys products from local suppliers often. One of her frequent customers, Tavis, has a severe peanut allergy and has approached her wondering if she could include some more nut-free options.

Furthermore, Victoria has recently been wondering about food and ingredient recalls and how would they be able to inform her customers if they have consumed something potentially dangerous. For example, one of her recent rye loaf batches contained flour with a potential salmonella contamination!

Victoria would like a system that helps her organize her purchases by location, instead of having to look through a combination of online orders and paper receipts. She would like the ability to attach a copy or picture of the receipt to the purchase for tax purposes.

Your task is to create a class diagram and sequence diagrams for the user stories and use case specifications detailed below. Submit a PDF containing your diagrams, your VPP file and header files for each of your controller classes.

Use Case: Maintain Products

User Story

As the owner of this business, I would like to record products so that I can easily see what I've purchased, what I've sold and how much inventory that I have at each location.

Acceptance Criteria:

1. Must be able to record critical information about each product.
2. Allow deletion of product, in case the owner makes a mistake. The owner must be prompted to confirm and product must not be involved in any purchases or sales.
3. Must be able to easily retrieve product information.
4. Must be able to retrieve a list of products by product type.

Use Case Name	Create Product Information	
Triggering Event	A new product of interest to the business	
Brief Description	Allows the Owner to record a new product.	
Actors	Owner	
Related Use Cases		
Preconditions	Owner has opened the Main Menu.	
Post Conditions	Product is saved to the database and now can be purchased.	
Flow of activities	Actor	System
	1. Requests to add a new product	• Displays a list of product types and prompts for selection. • Prompts for product name, ingredients, description, price.
	2. Enters name, description, ingredients, and instructions for use Selects product type	• name, description and price must be entered. • product type must be selected • Generates identifier. • Data is valid. • Displays product. • Prompts to save.
	3. Request to save	• Saves the product and returns to the main menu.
Exception Conditions	• Owner chooses to cancel adding the product	

Use Case Name	Query Products by Product Type	
Triggering Event	List of products required	
Brief Description	Allows the Owner to query products	
Actors	Owner	
Related Use Cases		
Preconditions	Owner has opened the Main Menu.	
Post Conditions	Product information provided to the actor.	
Flow of activities	Actor	System
	1. Requests to products	• Displays a list of product types and prompts for selection
	2. Selects product type	• Displays a list of products for that product type
Exception Conditions	• Owner chooses to cancel query products	

Use Case: Maintain Purchase

User Story

As the owner of this business, I would like to record my purchases so that I can quickly see how much money I've spent, what I've ordered and from where. Because I like to order in bulk, I must be able to record multiple locations for each product.

Acceptance Criteria:

1. Must be able to record purchases by supplier.
2. Must be able to query purchase details by location.

Use Case Descriptions

Use Case Name	Create Purchase	
Triggering Event	Purchase of products.	
Brief Description	Allows the Owner to record a new purchase.	
Actors	Owner	
Related Use Cases		
Preconditions	Owner has opened the Main Menu.	
Post Conditions	Purchase is saved to the database and now can be queried.	
Flow of activities	Actor	System
	1. Requests to add a new purchase	• Displays a list of suppliers and prompts for selection. • Prompts for purchase date and selection of receipt file location.
	2. Selects a supplier. Enters purchase date and receipt file selected.	• Verifies that a supplier was selected Verifies that date was entered and receipt selected. • Creates a unique identifier for the purchase. Displays the purchase. • Prompts to enter purchase details.
	Loop Chooses new product	• Displays a list of products, sorted by product type and prompts for selection.
	3. Selects a product	• Display a list of locations and prompts for select. Prompts for quantity.
	4 Selects location and enters quantity and price	• Creates a unique identifier for the detail. • Data is valid • Extended price is calculated (price * quantity ordered)

			• Taxes are calculated and displayed • Purchase total is updated with the extended price + taxes • Purchase tax is updated with the tax amount • Displays purchase including totals, date and list of products and locations • • Prompts to add another location
		Repeats above step until all locations for a product were selected	• Display a list of products and prompts for selection
	End	When all products are selected	• Prompts to save purchase
	5.	Chooses to save	• Saves the purchase and returns to the main menu
Exception Conditions	• Owner chooses to cancel adding the purchase		

Use Case Name	Query Purchases	
Triggering Event	Owner requires a list of purchases for a date period listing Supplier, Products quantity purchased, price paid and the extended amount (price * quantity)	
Brief Description	Allows the Owner to retrieve purchases for a specified date range	
Actors	Owner	
Related Use Cases		
Preconditions	Owner has opened the Main Menu.	
Post Conditions	purchases are retrieved, totaled and displayed	
Flow of activities	Actor	System
	1. Requests to query purchase (by date) transactions	• Displays a calendar
	2. Selects date range	• Verifies that dates are selected • Retrieves purchases in the specified date range, calculating totals • Prompts to exit
	3. Request to cancel	• Returns to the main menu
Exception Conditions		

Your tasks:

1. Create a class diagram to support the above case study.
2. Create sequence diagrams to support the use cases above.
3. Place the diagrams in a PDF along with descriptions of each diagram.
4. Include the VPP file in your submission.
5. Include header files containing your controller classes and their function declarations.