### No. Requirement descriptions in Web Store

### **Product Features:**

Account Management (AM) (High Priority): AM allows users to create, edit, and view accounts information. It also allows the user to login/out of the system.

Search Engine (SE) (Medium Priority): SE is the tool that assists the user in finding a specific item in the database. It can receive search criteria, find search criteria, and return the results of the search. Product Management (PM) (High Priority): PM allows sales personnel to manage the product line shown on the web site.

Shopping Cart (SC) (Medium Priority): SC is temporary storage for customers shopping on the web. Items from the inventory can be reserved in a virtual cart until the customer decides to purchase them.

Purchasing and Payment (PP) (High Priority): PP is used to approve and transfer payment from buyers when purchasing items in the cart.

#### **User Classes:**

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System Administrator: Is generally the owner that takes care of maintenance for the Web Store system. The administrator will be in charge of assigning privileges of accounts. Suggested more than one individual can have administrator privilege to ensure advisability. Full documentation will be provided to the Administrator to assist with this process.

- Sales Personnel: Is generally the owner of the Web Store tasked with updating inventory and product line descriptions. Once added, sales personnel can add, delete and change descriptions, pictures, prices, and when ready flag items for customers to buy.
  - Customer: A customer is an individual wishing to purchase inventory from GAMMA-J's Web Store. The Web store will have a variety of clientele depending upon the inventory loaded on the Key. When creating a new account on Web Store it will default as a customer account. Later if the account needs to be upgraded the administrator can accomplish this via the administrator interface. **Customer Accounts:** Customers will be able to create accounts to store their customer profiles, configure contact information, view their purchase history, and confirm orders. Customers will be
- 3 able to register, log in, and log out of their accounts. Furthermore, Customer profiles will also include payment information, such as the ability to store credit card information, and address information.
- Inventory Management: Products will be stored in multi-tiered categories; a category can contain sub categories or products. The inventory management will allow for administrators to update the categories, the products placed in categories, and the specific product details.
- Shopping Cart: Customers will also be able to add products into the shopping cart. The shopping cart will clearly display the number of items in the cart, along with the total cost. The customer will also be able to add to or remove products from the shopping cart prior to checkout and order confirmation.
- **Order Confirmation:** Customers will be able to confirm the order after checkout. If the order is incorrect, the customer will be able to revise and update their order. The customer will then receive a confirmation email with the specific order details.
- Interface: Customers will be presented with an unambiguous interface to assist in browsing the categories and products. Customers will be able to search for products matching their search criteria. The interface will be compatible with all major web browsers such as Internet Explorer, Mozilla Navigator, Mozilla Firefox, Opera, and Safari.

## The use cases designed by a requirement engineer with LLM assistance (junior):

Use Case ID	01(Register Customer)
Intent	Customer Registration
Role	Customer
Pre-conditions	
Post-conditions	The customer registers successfully and can log in to the
	system.

## **Basic Flow**

- 1. The customer browses the registration page.
- 2. The customer fills in the registration information.
- 3. The customer clicks the "Register" button.
- 4. The system verifies the registration information.
- 5. The system displays the message "Registration Successful".

## **Alternative Flow(s):**

- 3a. The customer does not fill in the required information.
  - 3a1. The system prompts that the required fields are not filled.
  - 3a2. The customer fills in the missing information and resubmits.
- 4a. The mobile phone number or email address filled in by the customer has already been registered.
- 4a1. The system prompts that the account already exists and provides options such as retrieving the password or changing the mobile phone number/email address.
  - 4a2. The customer selects an option and continues the registration process.

Use Case ID	02(Login Customer)
Intent	Customer Login
Role	Customer
Pre-conditions	The customer has already registered an account.
Post-conditions	The customer logs in to the system successfully and can view
	personal information.

### **Basic Flow**

- 1. The customer enters the login interface.
- 2. The customer fills in the login information
- 3. The customer clicks the "Login" button.
- 4. The system verifies the user information.
- 5. The user enters the system.

- 3a. The customer enters the wrong password.
- 3a1. The system prompts that the password is incorrect and displays the remaining number of password attempts.
  - 3a2. The customer re-enters the password or chooses to retrieve the password.
- 4a. The maximum number of password attempts is reached and the account is locked.
- 4a1. The system prompts that the account is locked and notifies the user to wait or contact the customer service, etc.

Use Case ID	03(Edit Customer Details)
Intent	Customer Modifies Personal Information
Role	Customer
Pre-conditions	The customer has successfully logged in to the system.
Post-conditions	The customer's personal information is modified successfully.
Basic Flow	
1. The user enters the personal center.	

- 2. The Customer clicks the "Edit Profile" button.
- 3. The system displays the editable user information.
- 4. The Customer modifies the personal information
- 5. The Customer clicks the "Save" button.
- 6. The system verifies the information format.
- 7. The system displays the message "Modify Successfully".

- 4a. The information entered by the user is in the wrong format.
  - 4a1. The system prompts the incorrect information format.
  - 4a2. The user modifies the information according to the prompt and resubmits.
- 5a. The system fails to save the information.
- 5a1. The system prompts an error and asks the user to try again later or contact the customer service.

Use Case ID	04(Logout Customer)
Intent	Customer Logs Out of the System
Role	Customer
Pre-conditions	The customer has successfully logged in to the system.
Post-conditions	The customer has successfully logged out of the system.

### **Basic Flow**

- 1. The customer selects the "Logout" button.
- 2. The system confirms the customer's logout operation.
- 3. The system updates the customer's login status.
- 4. The system displays the login page.

## **Alternative Flow(s):**

- 2a. The customer cancels the logout operation.
  - 2a1. The system cancels the logout and returns to the original page.

Use Case ID	05(Add Item To Cart)
Intent	Customer Adds an Item to the Shopping Cart
Role	Customer
Pre-conditions	The customer has successfully logged in to the system and
	there is sufficient inventory of the item.
Post-conditions	The item is successfully added to the shopping cart and the
	shopping cart information is updated.

- 1. The customer browses the product details page.
- 2. The customer clicks the "Add to Cart" button.
- 3. The customer selects the quantity of the item.
- 4. The customer clicks "Confirm" button.
- 5. The system verifies inventory.
- 6. The system adds the item to the shopping cart
- 7. The system updates the shopping cart.

8. The system displays the message "Add to Cart Successfully".

## **Alternative Flow(s):**

- 3a. The customer does not select the quantity of the item.
  - 3a1. The system prompts that the item quantity has not been selected.
  - 3a2. The customer selects the quantity and adds the item to the cart again.
- 5a. The inventory of the item is insufficient.
- 5a1. The system prompts that the inventory is insufficient and displays the remaining inventory of the item.
- 5a2. The customer can choose to adjust the purchase quantity of the item or cancel adding it to the cart.

Use Case ID	06(Checkout An Order)
Intent	Customer Checks Out the Shopping Cart, Generates an Order,
	and Makes a Payment
Role	Customer
<b>Pre-conditions</b>	The customer is logged in to the system, there are items in the
	shopping cart, and the customer has selected the delivery
	address and payment method.
Post-conditions	The order is generated successfully and the payment is
	successful.

### **Basic Flow**

- 1. The customer clicks "Checkout" button.
- 2. The system displays the order page (including product information, total price, delivery address, and payment method).
- 3. The customer confirms the order.
- 4. The customer clicks the "Pay" button.
- 5. The system creates an order.
- 6. The system redirects to the online payment page.
- 7. The customer completes the payment.
- 8. The system displays the payment information.

- 3a. The delivery address has not been filled in.
  - 3a1. The system prompts that the delivery address has not been filled in.
  - 3a2. The customer fills in the delivery address and continues the checkout process.
- 7a. The payment fails.
- 7a1. The system prompts the reason for the payment failure, such as insufficient balance or network problems.
  - 7a2. The customer changes the payment method or makes the payment again.

Use Case ID	07(Login Administrator)
Intent	Administrator Logs in to the System
Role	Administrator
Pre-conditions	The administrator has registered an account.
Post-conditions	The administrator logs in to the system successfully.

## **Basic Flow**

- 1. The administrator enters "Administrator Login" page.
- 2. The administrator enters the username and password.
- 3. The administrator clicks the "Login" button.
- 4. The system verifies the administrator's information.
- 5. The system displays a successful login message.
- 6. The administrator enters the system.

## **Alternative Flow(s):**

- 2a. The administrator enters the wrong password.
- 2a1. The system prompts that the password is incorrect and displays the remaining number of password attempts.
  - 2a2. The administrator re-enters the password or chooses to retrieve the password.
- 4a. The maximum number of password attempts is reached and the account is locked.
- 3a1. The system prompts that the account is locked and notifies the administrator to wait or contact the superior administrator, etc.

Use Case ID	08(Logout Administrator)
Intent	Administrator Logs Out of the System
Role	Administrator
Pre-conditions	The administrator has successfully logged in to the system.
Post-conditions	The administrator logs out of the system successfully.

### **Basic Flow**

- 1. The administrator selects the "Logout" button.
- 2. The system confirms the administrator's logout operation.
- 3. The system updates the administrator's login status.
- 4. The system displays the login interface.

## **Alternative Flow(s):**

- 2a. The administrator cancels the logout operation.
  - 2a1. The system cancels the logout and returns to the original page.

Use Case ID	09(Add User)
Intent	Administrator Adds a User and Assigns Account Privileges
Role	Administrator
Pre-conditions	The administrator is logged in to the system.
Post-conditions	The user is added successfully.

- 1. The administrator selects "User Management" page.
- 2. The administrator clicks "Add User" button.
- 3. The system displays the blanks.
- 4. The administrator fills in the user information.
- 5. The administrator clicks the "Save" button.
- 6. The system verifies the information format.
- 7. The system saves the user information.

8. The system displays the message "Add Successfully".

## **Alternative Flow(s):**

- 4a. The administrator fills in the incorrect information.
- 4a1. The system prompts that the information is filled incorrectly: required fields are not filled or the information format is wrong.
- 4a2. The administrator supplements and modifies the information according to the prompt and resubmits.
- 6a. The username already exists.
  - 6a1. The system prompts that the username already exists.
  - 6a2. The administrator modifies the username and resubmits.

10(Remove User)
Administrator Removes a User Account
Administrator
The administrator is logged in to the system and there is a user
account to be removed in the system.
The user account is successfully removed.

### **Basic Flow**

- 1. The administrator selects "User Management" page.
- 2. The administrator selects the user account.
- 3. The administrator clicks the "Remove" button.
- 4. The system confirms the deletion operation.
- 5. The system deletes the user account.
- 6. The system displays the message "Delete Successfully".
- 7. The system updates the user list.

# **Alternative Flow(s):**

- 3a. The administrator cancels the deletion operation.
  - 3a1. The system cancels the deletion and returns to the original page.

Use Case ID	11(Change User Properties)
Intent	Administrator Modifies User Properties
Role	Administrator
<b>Pre-conditions</b>	The administrator is logged in to the system and there is a user
	to be modified in the system.
Post-conditions	The user properties are modified successfully.
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- 1. The administrator selects "User Management" page.
- 2. The administrator selects the user account.
- 3. The administrator clicks the "Modify" button.
- 4. The system displays the user account properties.
- 5. The administrator modifies the user properties.
- 6. The administrator clicks the "Save" button.
- 7. The system verifies the information.

- 8. The system saves the modification.
- 9. The system displays the message "Modify Successfully".

- 5a. The information entered by the administrator is in the wrong format.
  - 5a1. The system prompts the incorrect information format.
  - 5a2. The administrator modifies the information according to the prompt and saves it again.
- 6a. The system fails to save the information.
- 6a1. The system prompts an error in saving the information and asks the administrator to try again later or contact the technical support for processing.

Use Case ID	12(Install Plug-ins)
Intent	Administrator Installs Plug-ins
Role	Administrator
Pre-conditions	The administrator is logged in to the system, there is an
	available plug-in installation package, and the system has the
	permissions and environment to install the plug-in.
Post-conditions	The plug-in is successfully installed in the system and the
	system can use the functions of the plug-in normally.

## **Basic Flow**

- 1. The administrator selects "Plug-in Management" page.
- 2. The administrator clicks "Install Plug-in" button.
- 3. The administrator selects the plug-in installation package file.
- 4. The administrator clicks the "Upload" button.
- 5. The system verifies the integrity and compatibility of the installation package.
- 6. The system completes the plug-in installation.
- 7. The system displays the message "Install Successfully".

- 3a. The file type selected by the administrator is incorrect.
  - 3a1. The system prompts to select a valid file.
  - 3a2. The administrator re selects the file and uploads it.
- 5a. The installation package is incomplete or incompatible.
- 5a1. The system prompts a problem with the installation package and displays the specific error reason.
  - 5a2. The administrator obtains the correct installation package and uploads it again.

Use Case ID	13(Remove Plug-ins)
Intent	Administrator Removes Plug-ins
Role	Administrator
Pre-conditions	The administrator is logged in to the system and there is a
	plug-in to be removed in the system.
Post-conditions	The specified plug-in is removed from the system and the
	system no longer uses the functions of the plug-in.
Basic Flow	
The administrator selects "Plug - in Management" page.	

- 2. The administrator selects the plug-in.
- 3. The administrator clicks the "Remove" button.
- 4. The system confirms the removal operation.
- 5. The system removes the plug-in.
- 6. The system displays the message "Remove Successfully".

- 4a. The administrator cancels the removal operation.
  - 4a1. The system cancels the removal operation and returns to the original interface.
- 5a. The removal fails.
  - 5a1. The system prompts that the removal fails and displays the specific error information.
- 5a2. The administrator contacts the technical support to solve the problem and then tries to remove the plug-in again.

Use Case ID	14(Manage Plug-in Options)
Intent	Administrator Manages Plug-in Options
Role	Administrator
<b>Pre-conditions</b>	The administrator is logged in to the system and there is an
	installed and manageable plug-in in the system.
Post-conditions	The plug - in configuration information is updated.

### **Basic Flow**

- 1. The administrator selects "Plug-in Management" page.
- 2. The administrator selects the plug-in.
- 3. The administrator clicks the "Manage Options" button.
- 4. The system displays the plug-in configuration page.
- 5. The administrator modifies the option settings of the plug-in.
- 6. The administrator clicks the "Save" button.
- 7. The system verifies the validity of the option settings.

- 5a. The administrator does not make any changes to the plug-in.
  - 5a1. The system prompts that there is no content to change.
  - 5a2. The administrator selects the options to change or cancels the change.
- 6a. The system encounters a failure when saving the information.
- 6a1. The system prompts an error in saving the information and asks the administrator to try again later or contact technical support for processing.
- 7a. The option settings are invalid.
  - 7a1. The system prompts that the settings are invalid and displays specific error information.
  - 7a2. The administrator modifies according to the prompt and saves again.

Use Case ID	15(Install patch process)
Intent	The administrator installs a patch.
Role	Administrator
Pre-conditions	The administrator has logged in to the system, there is an
	available patch file, and the system has the permissions and
	environment to install the patch.

Post-conditions	The patch is successfully installed in the system, and the
	system vulnerabilities are fixed or the functions are updated.

#### **Basic Flow**

- 1. The administrator selects "Patch Management" page.
- 2. The administrator clicks "Install Patch" button.
- 3. The administrator selects the patch file.
- 4. The administrator clicks the "Upload" button.
- 5. The system verifies the integrity and compatibility of the patch.
- 6. The system displays the message "Install Successfully".

# **Alternative Flow(s):**

- 4a. The file type selected by the administrator is incorrect.
  - 4a1. The system prompts to select a valid file.
  - 4a2. The administrator re selects the file and uploads it.
- 5a. The patch is incomplete or incompatible.
  - 5a1. The system prompts a problem with the patch and displays the specific error reason.
  - 5a2. The administrator obtains the correct installation package and uploads it again.

Use Case ID	16(Login Sales Person)
Intent	Sales Person Logs In to the System
Role	Sales Person
Pre-conditions	The Sales Person has registered an account.
Post-conditions	The Sales Person logs in to the system successfully.
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### **Basic Flow**

- 1. The Sales Person enters the "System Login" page.
- 2. The Sales Person enters the username and password.
- 3. The Sales Person clicks the "Login" button.
- 4. The system verifies the Sales Person's information.
- 5. The system displays a successful login message.

- 3a. The Sales Person enters the wrong password.
- 3a1. The system prompts that the password is incorrect and shows the remaining number of password attempts.
  - 3a2. The Sales Person reenters the password or chooses to retrieve the password.
- 4a. The maximum number of password attempts is reached, and the account is locked.
- 4a1. The system prompts that the account is locked and notifies the Sales Person to wait or contact the administrator, etc.

Use Case ID	17(Logout Sales Person)
Intent	Sales Person Logs Out of the System
Role	Sales Person
Pre-conditions	The Sales Person has successfully logged in to the system.
Post-conditions	The Sales Person logs out of the system successfully.
Basic Flow	

- 1. The Sales Person selects the "Logout" button.
- 2. The system confirms the Sales Person's logout operation.
- 3. The system updates the Sales Person's login status.
- 4. The system displays the login page.

- 2a. The Sales Person cancels the logout operation.
  - 2a1. The system cancels the logout and returns to the original page.

Use Case ID	18(Add Product)
Intent	Sales Person Adds a New Product to the System
Role	Sales Person
Pre-conditions	The Sales Person is logged in to the system.
Post-conditions	The new product is successfully added to the system.

#### **Basic Flow**

- 1. The Sales Person enters the "Product Management" page.
- 2. The Sales Person clicks the "Add Product" button.
- 3. The Sales Person fills in the product information (including product name, detailed description, price, photos, etc.).
- 4. The Sales Person clicks the "Save" button.
- 5. The system verifies the integrity and format of the product information.
- 6. The system saves the new product information
- 7. The system displays the message "Add Successfully".

## **Alternative Flow(s):**

- 3a. The Sales Person does not fill in the required items.
  - 3a1. The system prompts that the required items are not filled.
  - 3a2. The Sales Person fills in the product information and saves it again.
- 4a. The system fails to save the information.
- 4a1. The system prompts an error in saving the information and asks the Sales Person to try again later or contact the customer service for processing.
- 5a. The product already exists.
  - 5a1. The system prompts that the product already exists.
  - 5a2. The Sales Person modifies the product information and resubmits.

Use Case ID	19(Remove Product)
Intent	Sales Person Removes a Product from the System
Role	Sales Person
Pre-conditions	The Sales Person is logged in to the system, and there is a
	product to be removed in the system.
Post-conditions	The product is removed successfully.
Rasic Flow	

- 1. The Sales Person enters the product management page.
- 2. The Sales Person selects a product.
- 3. The Sales Person clicks the "Remove" button.

- 4. The system confirms the removal operation.
- 5. The system removes the product.
- 6. The system displays the message "Remove Successfully".

- 4a. The Sales Person cancels the removal operation.
  - 4a1. The system cancels the removal and returns to the original page.

Use Case ID	20(Update Product)
Intent	Sales Person Updates Product Information
Role	Sales Person
Pre-conditions	The Sales Person is logged in to the system, and there is a
	product to be updated in the system.
Post-conditions	The product information is updated successfully.

### **Basic Flow**

- 1. The Sales Person enters the product management page.
- 2. The Sales Person selects a product.
- 3. The Sales Person clicks the "Update Product" button.
- 4. The Sales Person modifies the product information.
- 5. The Sales Person clicks the "Save" button.
- 6. The system verifies the integrity and format of the product information.
- 7. The system saves the product update information
- 8. The system displays the message "Updated Successfully".

- 5a. The Sales Person does not make any changes to the information.
- 5a1. After the Sales Person clicks the "Save" button, the system prompts that there is no content to change, and the original information is retained.
- 7a. The information format is incorrect (e.g., incorrect price format).
  - 7a1. The system prompts the format error and displays specific error information.
  - 7a2. The Sales Person corrects the information and saves it again.