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| **TRƯỜNG ĐẠI HỌC TÔN ĐỨC THẮNG**  KHOA CÔNG NGHỆ THÔNG TIN  **---------------------------** | **ĐẶC TẢ CHỨC NĂNG HỆ THỐNG**  ĐỒ ÁN MÔN HỌC |

# Service-Oriented Architecture (504070)

## Thông Tin Sinh Viên

Họ và tên SV1: MSSV:

Họ và tên SV2: MSSV:

Họ và tên SV3: MSSV:

## Đặc Tả Chức Năng Hệ Thống

**E-commerce Shop Use Case Specification**

1. **1. Introduction**

This document specifies the use cases for an e-commerce shop system. The system facilitates online shopping experiences for customers while providing administrative capabilities for product, media, customer, and order management.

1. **2. Actors**

The system interacts with the following actors:

1. **Customer** - End users who browse products, make purchases, and manage their accounts
2. **Product Admin** - Staff responsible for managing product listings and promotions
3. **Media Admin** - Staff responsible for managing news, articles, and media content
4. **Customer Admin** - Staff responsible for managing customer accounts
5. **Orders Admin** - Staff responsible for managing and processing orders
6. **3. Use Cases by Actor**

**3.1 Customer Use Cases**

**3.1.1 Login/Sign Up**

**Description:** Allows customers to create a new account or log in to an existing account. **Preconditions:** Customer has navigated to the e-commerce website. **Main Flow:**

1. Customer selects the sign-up option.
2. System displays the registration form.
3. Customer enters required information.
4. System validates the information.
5. System creates a new account and sends verification email. **Alternative Flows:**

* If the customer already has an account, they can select login and enter credentials. **Postconditions:** Customer is logged into the system.

**3.1.2 View Product**

**Description:** Allows customers to view detailed information about a product. **Preconditions:** Customer has navigated to the product listing page. **Main Flow:**

1. Customer selects a product from the listing.
2. System displays detailed product information including price, description, and images. **Postconditions:** Customer views the product details.

**3.1.3 View Product Again**

**Description:** Allows customers to revisit previously viewed products. **Preconditions:** Customer has previously viewed a product. **Main Flow:**

1. Customer selects to view the product again (possibly from browsing history).
2. System displays the product details. **Postconditions:** Customer views the product details again.

**3.1.4 Add to Cart**

**Description:** Allows customers to add products to their shopping cart. **Preconditions:** Customer is viewing a product detail page. **Main Flow:**

1. Customer selects "Add to Cart" option.
2. System adds the product to the customer's cart.
3. System confirms the addition. **Postconditions:** Product is added to the customer's shopping cart.

**3.1.5 View Cart**

**Description:** Allows customers to view the contents of their shopping cart. **Preconditions:** Customer has added at least one item to cart. **Main Flow:**

1. Customer selects the cart icon/link.
2. System displays the current cart contents with product details and prices. **Postconditions:** Customer views their current shopping cart.

**3.1.6 Update Cart**

**Description:** Allows customers to modify the quantity or remove items from their cart. **Preconditions:** Customer is viewing their shopping cart. **Main Flow:**

1. Customer modifies the quantity of a product or selects to remove an item.
2. System updates the cart accordingly.
3. System recalculates the total price. **Postconditions:** Shopping cart is updated with the changes.

**3.1.7 Checkout**

**Description:** Initiates the process to complete a purchase. **Preconditions:** Customer has items in their cart and is logged in. **Main Flow:**

1. Customer selects "Checkout" option.
2. System initiates the checkout process. **Postconditions:** Customer proceeds to the checkout flow.

**3.1.8 Enter Personal Address**

**Description:** Allows customers to enter or select a shipping address. **Preconditions:** Customer has initiated checkout. **Main Flow:**

1. System prompts for shipping address information.
2. Customer enters address details or selects from saved addresses.
3. System validates the address information. **Postconditions:** Shipping address is confirmed for the order.

**3.1.9 Select Shipping Method**

**Description:** Allows customers to choose a shipping method for their order. **Preconditions:** Customer has entered shipping address. **Main Flow:**

1. System displays available shipping methods with costs and estimated delivery times.
2. Customer selects preferred shipping method. **Postconditions:** Shipping method is selected for the order.

**3.1.10 Select Payment Method**

**Description:** Allows customers to select a payment method for their purchase. **Preconditions:** Customer has selected shipping method. **Main Flow:**

1. System displays available payment options.
2. Customer selects preferred payment method.
3. Customer enters payment details if required. **Postconditions:** Payment method is selected for the order.

**3.1.11 Place Order**

**Description:** Finalizes the purchase process by placing the order. **Preconditions:** Customer has selected payment method. **Main Flow:**

1. System displays order summary for confirmation.
2. Customer confirms the order.
3. System processes the payment.
4. System creates the order. **Postconditions:** Order is placed and confirmation email is sent.

**3.1.12 View Order**

**Description:** Allows customers to view their order history and details. **Preconditions:** Customer is logged in. **Main Flow:**

1. Customer navigates to order history.
2. Customer selects a specific order.
3. System displays detailed order information. **Postconditions:** Customer views order details.

**3.1.13 Cancel Order**

**Description:** Allows customers to cancel an existing order. **Preconditions:** Customer is viewing an order that is eligible for cancellation. **Main Flow:**

1. Customer selects "Cancel Order" option.
2. System prompts for confirmation.
3. Customer confirms cancellation.
4. System processes the cancellation. **Postconditions:** Order is cancelled and customer is notified.

**3.1.14 Update Profile**

**Description:** Allows customers to modify their account information. **Preconditions:** Customer is logged in. **Main Flow:**

1. Customer navigates to profile settings.
2. System displays current profile information.
3. Customer modifies desired fields.
4. System validates and saves changes. **Postconditions:** Customer profile is updated.

**3.1.15 Change Password**

**Description:** Allows customers to update their account password. **Preconditions:** Customer is logged in. **Main Flow:**

1. Customer selects option to change password.
2. System prompts for current password and new password.
3. Customer enters required information.
4. System validates and updates the password. **Postconditions:** Customer password is changed.

**3.1.16 Search Products**

**Description:** Allows customers to search for products using keywords. **Preconditions:** Customer is on any page with search functionality. **Main Flow:**

1. Customer enters search terms.
2. System processes the search query.
3. System displays matching product results. **Postconditions:** Search results are displayed to the customer.

**3.1.17 View Media**

**Description:** Allows customers to browse media content such as articles and news. **Preconditions:** Customer is on the website. **Main Flow:**

1. Customer navigates to media section.
2. System displays available media categories. **Postconditions:** Customer views media options.

**3.1.18 Search Media**

**Description:** Allows customers to search for specific media content. **Preconditions:** Customer is in the media section. **Main Flow:**

1. Customer enters search terms for media.
2. System processes the search.
3. System displays matching media results. **Postconditions:** Media search results are displayed.

**3.1.19 View Media Details**

**Description:** Allows customers to view detailed media content. **Preconditions:** Customer has selected a media item. **Main Flow:**

1. System displays the complete media content with details. **Postconditions:** Customer views the full media content.

**3.1.20 View Product Detail**

**Description:** Provides detailed information about a specific product. **Preconditions:** Customer has selected a product. **Main Flow:**

1. System displays comprehensive product information including specifications, images, pricing, and availability. **Postconditions:** Customer views detailed product information.

**3.2 Product Admin Use Cases**

**3.2.1 View Products**

**Description:** Allows product administrators to view all product listings. **Preconditions:** Product admin is logged in with appropriate permissions. **Main Flow:**

1. Admin navigates to product management section.
2. System displays list of all products with summary information. **Postconditions:** Admin views product listings.

**3.2.2 Create Products**

**Description:** Allows admins to add new products to the system. **Preconditions:** Product admin is logged in with appropriate permissions. **Main Flow:**

1. Admin selects option to create new product.
2. System displays product creation form.
3. Admin enters product details including name, price, category, and images.
4. System validates and saves the new product. **Postconditions:** New product is added to the catalog.

**3.2.3 Update Products**

**Description:** Allows admins to modify existing product information. **Preconditions:** Product admin is viewing product list or detail. **Main Flow:**

1. Admin selects a product to edit.
2. System displays editable product information.
3. Admin makes changes to product details.
4. System validates and saves the changes. **Postconditions:** Product information is updated.

**3.2.4 Delete Products**

**Description:** Allows admins to remove products from the catalog. **Preconditions:** Product admin is viewing product list or detail. **Main Flow:**

1. Admin selects a product to delete.
2. System prompts for confirmation.
3. Admin confirms deletion.
4. System removes the product from active listings. **Postconditions:** Product is removed from the catalog.

**3.2.5 Product Promotion**

**Description:** Allows management of product promotions and special offers. **Preconditions:** Product admin is logged in with appropriate permissions. **Main Flow:**

1. Admin navigates to promotion management section.
2. System displays existing promotions. **Postconditions:** Admin views promotion information.

**3.2.6 Add Promotion**

**Description:** Allows creating new product promotions. **Preconditions:** Admin is in the promotion management section. **Main Flow:**

1. Admin selects option to create new promotion.
2. System displays promotion creation form.
3. Admin enters promotion details including type, value, and applicable products.
4. System validates and saves the new promotion. **Postconditions:** New promotion is created.

**3.2.7 Update Promotion**

**Description:** Allows modifying existing promotion details. **Preconditions:** Admin is viewing promotion list. **Main Flow:**

1. Admin selects a promotion to edit.
2. System displays editable promotion information.
3. Admin makes desired changes.
4. System validates and saves the changes. **Postconditions:** Promotion is updated.

**3.2.8 Delete Promotion**

**Description:** Allows removing existing promotions. **Preconditions:** Admin is viewing promotion list. **Main Flow:**

1. Admin selects a promotion to delete.
2. System prompts for confirmation.
3. Admin confirms deletion.
4. System removes the promotion. **Postconditions:** Promotion is deleted.

**3.3 Media Admin Use Cases**

**3.3.1 Add Media**

**Description:** Allows media administrators to add new content. **Preconditions:** Media admin is logged in with appropriate permissions. **Main Flow:**

1. Admin selects option to add new media content.
2. System displays content creation form.
3. Admin selects content type (news or article).
4. Admin enters required information and uploads assets.
5. System validates and saves the new content. **Postconditions:** New media content is published.

**3.3.2 Update Media**

**Description:** Allows modifying existing media content. **Preconditions:** Media admin is logged in with appropriate permissions. **Main Flow:**

1. Admin selects content to edit.
2. System displays editable content information.
3. Admin makes desired changes.
4. System validates and saves the changes. **Postconditions:** Media content is updated.

**3.3.3 Delete Media**

**Description:** Allows removing media content from the system. **Preconditions:** Media admin is viewing media list. **Main Flow:**

1. Admin selects content to delete.
2. System prompts for confirmation.
3. Admin confirms deletion.
4. System removes the content. **Postconditions:** Media content is deleted.

**3.3.4 Search Media**

**Description:** Allows searching through media content. **Preconditions:** Media admin is in media management section. **Main Flow:**

1. Admin enters search terms.
2. System processes the search.
3. System displays matching results. **Postconditions:** Search results are displayed.

**3.3.5 View Media**

**Description:** Allows viewing all media content in the system. **Preconditions:** Media admin is logged in with appropriate permissions. **Main Flow:**

1. Admin navigates to media management section.
2. System displays list of all media content. **Postconditions:** Admin views media content list.

**3.4 Customer Admin Use Cases**

**3.4.1 Manage Customer Accounts**

**Description:** Allows management of customer accounts. **Preconditions:** Customer admin is logged in with appropriate permissions. **Main Flow:**

1. Admin navigates to customer management section.
2. System displays list of customer accounts. **Postconditions:** Admin views customer account list.

**3.4.2 Search Customer**

**Description:** Allows searching for specific customer accounts. **Preconditions:** Customer admin is in customer management section. **Main Flow:**

1. Admin enters search criteria.
2. System processes the search.
3. System displays matching customer accounts. **Postconditions:** Customer search results are displayed.

**3.4.3 Edit Customer Account**

**Description:** Allows modifying customer account information. **Preconditions:** Admin is viewing customer list or detail. **Main Flow:**

1. Admin selects a customer account to edit.
2. System displays editable account information.
3. Admin makes desired changes.
4. System validates and saves the changes. **Postconditions:** Customer account information is updated.

**3.4.4 Delete Customer Account**

**Description:** Allows removing customer accounts from the system. **Preconditions:** Admin is viewing customer list or detail. **Main Flow:**

1. Admin selects a customer account to delete.
2. System prompts for confirmation.
3. Admin confirms deletion.
4. System deactivates the account. **Postconditions:** Customer account is removed.

**3.5 Orders Admin Use Cases**

**3.5.1 View Orders**

**Description:** Allows viewing all orders in the system. **Preconditions:** Orders admin is logged in with appropriate permissions. **Main Flow:**

1. Admin navigates to order management section.
2. System displays list of all orders with summary information. **Postconditions:** Admin views order list.

**3.5.2 Update Order Status**

**Description:** Allows modifying the status of existing orders. **Preconditions:** Admin is viewing order list or detail. **Main Flow:**

1. Admin selects an order to update.
2. System displays editable order information.
3. Admin changes order status.
4. System validates and saves the changes. **Postconditions:** Order status is updated.

**3.5.3 Search Orders**

**Description:** Allows searching for specific orders. **Preconditions:** Admin is in order management section. **Main Flow:**

1. Admin enters search criteria or applies filters.
2. System processes the search.
3. System displays matching orders. **Postconditions:** Order search results are displayed.

**3.5.4 Search Bar**

**Description:** Provides a general search functionality across orders. **Preconditions:** Admin is in order management section. **Main Flow:**

1. Admin enters search terms in the search bar.
2. System processes the search across all order data.
3. System displays relevant results. **Postconditions:** Search results are displayed.

**3.5.5 Filter**

**Description:** Allows filtering orders based on various criteria. **Preconditions:** Admin is viewing order list. **Main Flow:**

1. Admin selects filter options.
2. System applies the filters to the order list.
3. System displays filtered results. **Postconditions:** Filtered order list is displayed.

**3.5.6 Identify Customer**

**Description:** Allows looking up customer information related to an order. **Preconditions:** Admin is viewing order details. **Main Flow:**

1. Admin selects option to view customer information.
2. System displays relevant customer details. **Postconditions:** Admin views customer information for the order.
3. **4. System-wide Requirements**

**4.1 Verification Email**

**Description:** System automatically sends verification emails for account creation and important actions. **Trigger:** New account creation or security-sensitive actions. **Processing:** System generates and sends appropriate verification email. **Output:** Customer receives verification email with necessary information or links.

**4.2 Confirmation Email**

**Description:** System automatically sends confirmation emails for completed orders. **Trigger:** Order placement. **Processing:** System generates order confirmation email with details. **Output:** Customer receives confirmation email with order information.

1. **5. Use Case Relationships**

Many use cases in the system have dependencies or inclusion relationships:

1. "Checkout" includes "Select Payment Method", "Enter Personal Address", and "Select Shipping Method"
2. "Login/Sign up" includes "Verification Email"
3. "Place Order" includes "Confirmation Email"
4. Many admin functions include related search capabilities
5. **6. Non-functional Requirements**
6. **Performance:** The system should respond to user actions within 2 seconds under normal load conditions.
7. **Scalability:** The system should handle up to 10,000 concurrent users.
8. **Security:** Customer data must be encrypted in transit and at rest.
9. **Availability:** The system should be available 99.9% of the time.
10. **Usability:** The user interface should be intuitive and require minimal training for customers.

## Lược Đồ Use-case

