# Functional Requirement

\*\*Chapter 1: Functional Requirements\*\*   
\*System Name: GAMMA-J Web Store\*  
  
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### 1.1 Product Management Function   
\*\*Function ID:\*\* FR-01   
\*\*Description:\*\* Administrators and plugins can create, update, and delete products. Each product is associated with a category and can be part of an order.   
\*\*Input:\*\*   
- Product details (Name, Description, Price, Stock, CategoryID)   
- Administrator credentials and permissions   
- Plugin configuration (if applicable)   
\*\*Output:\*\*   
- A new or updated product record in the database   
- A notification to the administrator confirming the action   
- Error message (if validation or technical failure occurs)  
  
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### 1.2 Product View Function   
\*\*Function ID:\*\* FR-02   
\*\*Description:\*\* Administrators and customers can view the details of a specific product. This function retrieves and displays product information such as name, description, price, and stock status.   
\*\*Input:\*\*   
- ProductID or product name for search   
- User credentials (Administrator or Customer)   
\*\*Output:\*\*   
- Displayed product details   
- Error message if product not found or system failure occurs  
  
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### 1.3 Order Management Function   
\*\*Function ID:\*\* FR-03   
\*\*Description:\*\* Administrators can create, update, and delete orders. Orders are associated with a customer, and each order contains one or more order items.   
\*\*Input:\*\*   
- Order details (CustomerID, OrderDate, TotalAmount, Status)   
- OrderItems (ProductID, Quantity, Subtotal)   
- Administrator credentials and permissions   
\*\*Output:\*\*   
- A new or updated order record in the database   
- A notification to the administrator confirming the action   
- Error message if order or order item is invalid, or if system or plugin fails  
  
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### 1.4 Order View Function   
\*\*Function ID:\*\* FR-04   
\*\*Description:\*\* Administrators and customers can view the details of a specific order, including the associated products, payment status, and order status.   
\*\*Input:\*\*   
- OrderID   
- User credentials (Administrator or Customer)   
\*\*Output:\*\*   
- Displayed order details   
- Error message if order not found or system failure occurs  
  
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### 1.5 Order Status Update Function   
\*\*Function ID:\*\* FR-05   
\*\*Description:\*\* Administrators can update the status of an order (e.g., Processing, Shipped, Cancelled). The system validates the status and updates related records, including inventory and notifications.   
\*\*Input:\*\*   
- OrderID   
- New status (e.g., "Shipped")   
- Administrator credentials and permissions   
\*\*Output:\*\*   
- Updated order status in the database   
- Notifications to customer and administrator   
- Error message if invalid status or system/plugin failure occurs  
  
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### 1.6 Order Item Management Function   
\*\*Function ID:\*\* FR-06   
\*\*Description:\*\* Administrators can manage order items by editing or removing them from an order. This function updates the order total and product inventory accordingly.   
\*\*Input:\*\*   
- OrderItemID   
- Updated quantity or price (if editing)   
- Administrator credentials and permissions   
\*\*Output:\*\*   
- Updated or removed order item in the database   
- Updated order total and inventory   
- Notification to the administrator   
- Error message if order is finalized or system/plugin failure occurs  
  
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### 1.7 Customer Management Function   
\*\*Function ID:\*\* FR-07   
\*\*Description:\*\* Administrators can create, update, and delete customer records. A customer can also view their own profile.   
\*\*Input:\*\*   
- Customer details (Name, Email, PhoneNumber, Address)   
- Administrator credentials and permissions   
\*\*Output:\*\*   
- A new or updated customer record in the database   
- A notification to the administrator confirming the action   
- Error message if invalid data or dependencies exist  
  
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### 1.8 Customer View Function   
\*\*Function ID:\*\* FR-08   
\*\*Description:\*\* Customers and administrators can view a customer's profile and order history.   
\*\*Input:\*\*   
- CustomerID   
- User credentials (Administrator or Customer)   
\*\*Output:\*\*   
- Displayed customer profile and order history   
- Error message if customer not found or system failure occurs  
  
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### 1.9 Payment Processing Function   
\*\*Function ID:\*\* FR-09   
\*\*Description:\*\* The system processes payments for orders using a selected payment method. This function updates the payment and order status and sends a confirmation notification.   
\*\*Input:\*\*   
- OrderID   
- PaymentMethodID   
- Payment amount and date   
- User credentials (Customer or Administrator)   
\*\*Output:\*\*   
- A new or updated payment record in the database   
- Updated order status to "Paid"   
- Notification to customer and administrator   
- Error message if payment fails, order is invalid, or system/plugin failure occurs  
  
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### 1.10 Payment View Function   
\*\*Function ID:\*\* FR-10   
\*\*Description:\*\* Administrators and customers can view the details of a specific payment, including transaction ID, amount, method, and status.   
\*\*Input:\*\*   
- PaymentID   
- User credentials (Administrator or Customer)   
\*\*Output:\*\*   
- Displayed payment details   
- Error message if payment not found or system failure occurs  
  
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### 1.11 Notification Management Function   
\*\*Function ID:\*\* FR-11   
\*\*Description:\*\* The system can send and view notifications to users (customers and administrators). Notifications may be sent via plugins (e.g., email, SMS).   
\*\*Input:\*\*   
- Notification content (Message)   
- Recipient details (CustomerID or AdminID)   
- Plugin configuration (if applicable)   
\*\*Output:\*\*   
- Notification record in the database   
- Delivered notification to the user   
- Error message if recipient is invalid or plugin fails  
  
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### 1.12 Notification View Function   
\*\*Function ID:\*\* FR-12   
\*\*Description:\*\* Users (administrators and customers) can view their notifications. The system marks notifications as viewed upon display.   
\*\*Input:\*\*   
- UserID (Administrator or Customer)   
- User credentials   
\*\*Output:\*\*   
- List of notifications with content and timestamp   
- Marked notifications as viewed   
- Error message if no notifications or system failure occurs  
  
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### 1.13 Plugin Management Function   
\*\*Function ID:\*\* FR-13   
\*\*Description:\*\* Administrators can manage plugins, including adding, removing, and updating plugin configurations. Plugins can extend system functionality for notifications, payments, and order processing.   
\*\*Input:\*\*   
- Plugin details (Name, Description, Version, Configuration)   
- Plugin file (if adding a new plugin)   
- Administrator credentials and permissions   
\*\*Output:\*\*   
- Plugin record in the database   
- Plugin status updated (activated, deactivated, or removed)   
- Notification to the administrator   
- Error message if plugin is incompatible, fails to initialize, or in use  
  
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### 1.14 Product Category Management Function   
\*\*Function ID:\*\* FR-14   
\*\*Description:\*\* Administrators can manage product categories by creating, updating, or deleting them. This function ensures that products are correctly categorized and that dependencies are handled.   
\*\*Input:\*\*   
- Category details (Name, Description, ParentCategory)   
- Administrator credentials and permissions   
\*\*Output:\*\*   
- Updated or new product category record in the database   
- Notification to the administrator   
- Error message if category is in use or system/plugin failure occurs  
  
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### 1.15 Payment Method Management Function   
\*\*Function ID:\*\* FR-15   
\*\*Description:\*\* Administrators can manage available payment methods by creating, updating, or deleting them. This function ensures that payment methods are compatible with the system and not currently in use.   
\*\*Input:\*\*   
- Payment method details (Name, Description, Configuration)   
- Administrator credentials and permissions   
\*\*Output:\*\*   
- Updated or new payment method record in the database   
- Notification to the administrator   
- Error message if method is in use or system/plugin failure occurs  
  
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This concludes \*\*Chapter 1: Functional Requirements\*\* of the \*\*GAMMA-J Web Store Software Requirement Specification (SRS)\*\*. Each function is aligned with the provided use cases and data model, ensuring feasibility, completeness, and consistency.