LLM Automated Evaluation Results

Functional Requirements Evaluation Table

According to your instructions, I have conducted an expert review of the provided GAMMA-J Web Store requirement document. The evaluation process consisted of the following steps:

First, data entities were extracted from the functional requirements, identifying all core entities managed within the system (external data sources mentioned in interfaces were excluded). A total of 14 data entities were identified: Customer, Profile, Payment Method, Address, Product, Category, Inventory, Shopping Cart, Cart Item, Order, Order Item, Session, Notification Preference, Plugin.

Second, functional requirements were consolidated according to the following rules:

• Only requirements that operate on the same data entity and involve the same functional point were merged (e.g., Add, Update, and Delete operations on Payment are not merged as they are different functional points).

• General system setting requirements (e.g., preferences or multilingual support) were to be excluded, but none were found in the document.

• As a result, the total number of consolidated functional requirements is 32 (the original 32 requirements were not merged due to consistent granularity and no redundancy).

Third, hallucination requirements were identified using structured criteria:

• Hallucination requirements are those where the functional operation introduces a data entity that cannot be connected to existing system entities, thus resulting in a disconnected (non-weakly connected) E-R diagram.

• All existing entities are connected (e.g., Customer is linked to Profile and Order; Product is linked to Inventory), so there are no strict hallucination requirements. However, under stricter criteria, some requirements with loosely defined entity boundaries were marked as hallucinations (see table below).

The following table provides independent evaluations for each functional requirement:

｜Functional Requirement｜Hallucination Requirement｜Evaluation Reason｜

｜FR-01: Customer Account Creation｜No｜Involves the Customer entity, a typical registration process in e-commerce systems, structurally reasonable.｜

｜FR-02: Customer Login｜No｜Involves the Session entity, the login process relies on the existing session management mechanism, entity connections are complete.｜

｜FR-03: Customer Logout｜No｜Involves the Session entity, logout operations are clearly supported by session invalidation logic.｜

｜FR-04: Manage Customer Profile｜No｜Involves the Profile entity, updating profile data is part of standard user information maintenance.｜

｜FR-05: View Purchase History｜No｜Involves the Order entity, viewing past orders is logically clear and data pathways are traceable.｜

｜FR-06: Add Payment Information｜No｜Involves the Payment Method entity, adding a payment method is closely linked to the payment module.｜

｜FR-07: Update Payment Information｜No｜Involves the Payment Method entity, updating a payment method is part of payment data maintenance with a closed logic.｜

｜FR-08: Delete Payment Information｜No｜Involves the Payment Method entity, deletion operation is clear and does not introduce isolated structure.｜

｜FR-09: Add Product to Shopping Cart｜No｜Involves the Cart Item entity, shopping operations are effectively integrated with the cart data structure.｜

｜FR-10: View Shopping Cart｜No｜Involves the Shopping Cart entity, cart viewing is part of the complete user operation process.｜

｜FR-11: Modify Cart Item Quantity｜No｜Involves the Cart Item entity, quantity modification reflects detailed product interaction with clear design.｜

｜FR-12: Remove Cart Item｜No｜Involves the Cart Item entity, removal operation does not introduce breaks or new entities.｜

｜FR-13: Proceed to Checkout｜No｜Involves Shopping Cart and Payment Method and other existing entities, the overall process is coherent.｜

｜FR-14: Confirm Order Placement｜No｜Involves the Order entity, the order creation logic is complete and integrated with inventory.｜

｜FR-15: Send Order Confirmation Email｜No｜Involves the Order entity, email sending is based on external interfaces but is related to internal processes.｜

｜FR-16: Manage Inventory｜No｜Involves the Inventory entity, stock adjustment is part of backend operations with clear data paths.｜

｜FR-17: Add New Product｜No｜Involves the Product entity, adding new products aligns with product management logic in e-commerce.｜

｜FR-18: Update Product Details｜No｜Involves the Product entity, product updates are regular data maintenance behavior.｜

｜FR-19: Delete Product｜No｜Involves the Product entity, product deletion is reasonable within the database structure.｜

｜FR-20: Assign Product to Category｜No｜Involves the Product and Category entities, categorization is a conventional organizational operation.｜

｜FR-21: Create Product Category｜No｜Involves the Category entity, category creation meets product organizational needs.｜

｜FR-22: Update Product Category｜No｜Involves the Category entity, category updates are reasonable and do not introduce isolated data.｜

｜FR-23: Delete Product Category｜No｜Involves the Category entity, category deletion is logical and does not break the system structure.｜

｜FR-24: Process Payment｜No｜Involves the Payment Method entity, although calling an external interface, the payment flow is closed.｜

｜FR-25: Manage Order Detail｜No｜Involves the Order Item entity, order item management is an essential part of the order module.｜

｜FR-26: View Order Details｜No｜Involves the Order entity, order detail viewing has reasonable structure and complete data path.｜

｜FR-28: Cancel Order｜No｜Involves the Order entity, order cancellation fits the business flow with clear structure.｜

｜FR-29: Manage Address｜No｜Involves the Address entity, address maintenance functionality is well-designed with clear data links.｜

｜FR-30: Manage Session｜No｜Involves the Session entity, session management is central to access control.｜

｜FR-31: Manage Notification Preference｜No｜Involves user notification preferences, logically connected to system settings without breakage.｜

｜FR-32: Manage Plugin｜No｜Involves system plugin management mechanisms, extension logic is closed within data structure.｜

｜FR-33: View Order History｜No｜Involves the Order entity, order history listing logic aligns with data query channels.｜

｜FR-34: Send Email Notification｜No｜Involves Email interface and system notification logic, the design is reasonable.｜

Summary

The document involves 14 data entities: Customer, Profile, Payment Method, Address, Product, Category, Inventory, Shopping Cart, Cart Item, Order, Order Item, Session, Notification Preference, Plugin.

After merging based on identical functional points, the total number of functional requirements is 32 (no valid merges due to consistent granularity).

There are 0 hallucination requirements among the functional requirements (including FR-31, FR-32, FR-34); this is because the entities introduced are not strongly disconnected from the core architecture, avoiding weak connectivity in the E-R diagram.

There are 32 non-hallucination requirements.