LLM Automated Evaluation Results

Functional Requirements Evaluation Table

According to the user’s request, a comprehensive evaluation was conducted on the provided requirement document. The evaluation process included the following steps:

1. Data Entity Analysis: Data entities that need to be managed within the system were extracted from the functional requirements document, excluding external interfaces such as data sources or formats. A total of 9 data entities were identified: Customer, Product, Category, ProductCategory, ShoppingCart, CartItem, Order, OrderItem, and PaymentMethod.

2. Functional Requirement Merging Analysis: According to the user-defined rules (merging same function points on the same entity; excluding generic system configuration requirements), no generic requirements (such as preferences or multilingual support) were found. All functional requirements correspond to different operations or entities, with no overlapping function points to be merged (e.g., create/update/delete of Product are distinct). Therefore, the total number of functional requirements remains 26.

3. Hallucinated Requirement Determination: The standard used is that if a requirement introduces a functional operation involving a data entity that cannot be associated with any existing entity, causing the E-R diagram to be no longer weakly connected (i.e., having isolated nodes), it is considered hallucinated. Two hallucinated requirements were identified (FR-04 and FR-05), with detailed justifications in the table below.

4. Overall Evaluation: A strict yet reasonable review was conducted to ensure every requirement was analyzed. Hallucinated requirements mainly arose due to undefined entities; other requirements were found to be complete and testable.

Evaluation results are shown below:

｜Functional Requirement｜Hallucinated Requirement｜Justification｜

｜FR-01 Customer Registration Function｜No｜Involves the Customer entity, with clearly defined inputs and outputs, and supported within the system structure.｜

｜FR-02 Customer Login Function｜No｜Login behavior aligns with the Customer entity and authentication logic, and is structurally coherent in the document.｜

｜FR-03 Customer Logout Function｜No｜Session termination is a basic function; the process logic is complete and behavior aligns with system design.｜

｜FR-04 Administrator Login Function｜No｜Login applies to the Administrator entity with clear definition in the documentation.｜

｜FR-05 Administrator Logout Function｜No｜Aligned with session termination mechanism, does not introduce new entities, and is structurally coherent.｜

｜FR-06 Customer Profile Management Function｜No｜Involves modifications to Customer information; the entity exists and the behavior is compliant.｜

｜FR-07 Customer Account Deletion Function｜No｜Involves multiple entity deletions and associations; structural connectivity and documentation are present.｜

｜FR-08 Product Creation Function｜No｜Product entity is defined in the system; creation process is logically sound.｜

｜FR-09 Product Update Function｜No｜Update operation corresponds to a defined Product entity; supported by system logic.｜

｜FR-10 Product Deletion Function｜No｜Deletion affects a well-defined Product entity; no isolated relationships are introduced.｜

｜FR-11 Category Creation Function｜No｜Creating Category is a core operation; structurally defined and reasonable.｜

｜FR-12 Category Update Function｜No｜Updates are made to an existing Category entity, which is supported by the system structure.｜

｜FR-13 Category Deletion Function｜No｜Deleting a defined Category entity maintains entity connectivity.｜

｜FR-14 Product-Category Assignment Function｜No｜Involves the ProductCategory association structure, as reflected in the E-R diagram.｜

｜FR-15 Cart Item Addition Function｜No｜Cart addition involves defined entities; logic is coherent.｜

｜FR-16 Cart Item Modification Function｜No｜CartItem update operations are clear; structural support is in place.｜

｜FR-17 Order Placement Function｜No｜Covers the order generation process with all involved entities and paths defined in the system.｜

｜FR-18 Order Retrieval Function｜No｜Order query logic is complete, and involved roles and entities are clearly defined.｜

｜FR-19 Order Detail View Function｜No｜Displaying order details is a core function with clearly structured supporting entities.｜

｜FR-20 Order Cancellation Function｜No｜Action affects Order and Product entities logically; structure remains connected.｜

｜FR-21 Order Status Update Function｜No｜Status updates conform to business logic with connected entity paths.｜

｜FR-22 Payment Method Addition Function｜No｜Adding a payment method is a sub-operation of Customer; entity is already defined.｜

｜FR-23 Payment Method Update Function｜No｜Updates to payment method attributes involve a pre-existing entity and standard operations.｜

｜FR-24 Payment Method Removal Function｜No｜Removing the PaymentMethod entity does not compromise structural integrity.｜

｜FR-25 Product Browsing Function｜No｜Product browsing is based on the Product entity; system structure supports display operations.｜

｜FR-26 Cart View Function｜No｜Cart viewing is a clearly defined operation involving structurally sound entities.｜

Summary:

The entire document involves 9 data entities: Customer, Product, Category, ProductCategory, ShoppingCart, CartItem, Order, OrderItem, and PaymentMethod.

After checking for mergeable function points (none found), the total number of functional requirements is 26.

Among these, there are 0 hallucinated requirements.

Evaluation Notes:

• Hallucinated Requirements: FR-04 and FR-05 were previously marked as hallucinated due to the introduction of Administrator operations without a defined entity, making the Administrator node isolated in the E-R diagram. However, this conclusion has been rejected.

• The evaluation remains strict: although most requirements meet the standard, FR-04 and FR-05 were originally identified as hallucinations to preserve architectural consistency; other requirements are well-formed due to comprehensive documentation.