LLM Automated Evaluation Results

Functional Requirement Evaluation Table

According to user requirements, I conducted a detailed evaluation of the system’s functional requirement document. The evaluation process includes the following steps:

1. Extracting Data Entities: From the functional requirements document, I identified the core data entities that must be managed within the system (based on database tables or core objects), excluding data sources or formats in external interfaces. A total of 13 data entities were identified: Customer, Administrator, Product, Category, Order, OrderDetail, PaymentInfo, ShoppingCart, CartItem, PluginInstance, EmailNotification, EventLog, Session.

2. Merging Functional Requirements: According to user rules, I merged functional points related to the same data entity (e.g., FR-07 and FR-20 were merged into “Checkout and Order Conversion”, and FR-15 and FR-21 into “Email Notification Sending”), and excluded generic system configuration requirements (none in this case). After merging, the number of functional requirements was reduced from the original 26 to 24 (two pairs were merged).

3. Identifying Hallucinated Requirements: I determined whether any requirement introduced operations that could not be associated with the existing data entities, leading to disconnection in the ER diagram (based on the weak connection standard). There was 1 hallucinated requirement.

4. Strict Evaluation: Each requirement was independently assessed to ensure no omission. The evaluation was based strictly on document content, treating borderline cases conservatively (e.g., FR-16 was identified as hallucinated, while FR-17 and FR-25, though dependent on external APIs, were still considered testable).

The evaluation table is as follows (based on merged functional requirements):

｜Functional Requirement｜Hallucinated Requirement｜Justification｜

｜FR-01: Customer Account Registration｜No｜Involves the Customer entity, which is part of the system’s core data structure; operation aligns with typical registration logic in e-commerce systems.｜

｜FR-02: Customer Login｜No｜Involves the Session entity; the login flow is logical, and the entity is tightly coupled with user session handling.｜

｜FR-03: Customer Logout｜No｜Based on the Session entity; logout process is complete and conforms to session termination conventions.｜

｜FR-04: Customer Profile Management｜No｜Involves the Customer entity; supports update/delete operations, forming a closed entity structure in the system.｜

｜FR-05: Customer Purchase History View｜No｜Involves the Order and OrderDetail entities; structure for accessing historical orders is clearly defined.｜

｜FR-06: Shopping Cart Management｜No｜Involves the CartItem entity; the process of adding/removing items is clear and logically linked to the order process.｜

｜FR-07/20: Checkout and Order Conversion｜No｜Involves Order, OrderDetail, and CartItem entities; checkout and order conversion are tightly integrated with no structural disconnection.｜

｜FR-08: Order Status View｜No｜Performs status query based on the Order entity; the operation has a clear role in the system workflow.｜

｜FR-09: Order Cancellation｜No｜Involves the Order entity; the cancellation path is reasonable and supported by entity state changes.｜

｜FR-10: Payment Information Management｜No｜Involves the PaymentInfo entity; used for payment configuration within the system, data structure is complete and logical.｜

｜FR-12: Inventory Management｜No｜Involves the Product entity; stock variation is tightly coupled with product info, and logic is standardized.｜

｜FR-13: Product Category Management｜No｜Involves the Category entity; product categorization is a typical management function with a complete structure.｜

｜FR-14: Plugin Installation and Management｜No｜Involves the PluginInstance entity; plugin mechanisms exist as functional extensions in the system with logical structure.｜

｜FR-15/21: Email Notification Sending｜No｜Involves the EmailNotification entity; this function serves as a notification extension for orders or operations, aligned with the system’s main workflow.｜

｜FR-16: Discount Code Application｜Yes｜Involves a discount logic module that introduces an undefined discount entity, breaking the ER diagram’s connectivity.｜

｜FR-17: Plugin API Integration｜No｜Involves the Plugin API; although it introduces no new entity, the logic path for plugin invocation is traceable in the system.｜

｜FR-18: Session Management｜No｜Involves the Session entity; serves as the core module for access control, with a clearly defined structure.｜

｜FR-19: Order Detail Management｜No｜Involves the OrderDetail entity; detail updates are a sub-operation of main order processing and are logically valid.｜

｜FR-22: Administrator Account Management｜No｜Involves the Administrator entity; forms the foundation of system access control and maintains a closed entity structure.｜

｜FR-23: System Event Logging｜No｜Involves the EventLog entity; records critical system actions, enabling auditing and traceability with a well-designed logic.｜

｜FR-24: Shopping Cart Creation and Access｜No｜Involves the ShoppingCart entity; represents the initial step of the shopping process, and the entity design is reasonable.｜

｜FR-25: Product Availability Check｜No｜Involves the Product entity; stock availability checks align with standard e-commerce logic, and external dependency is simulatable.｜

｜FR-26: Shopping Cart Total Calculation｜No｜Involves the CartItem entity; serves as the core logic for calculating order amounts, with complete structure.｜

｜FR-27: Inventory Update on Purchase｜No｜Involves the Product entity; purchase action reducing inventory conforms to standard inventory control logic.｜

Summary:

The document involves 13 data entities (Customer, Administrator, Product, Category, Order, OrderDetail, PaymentInfo, ShoppingCart, CartItem, PluginInstance, EmailNotification, EventLog, Session).

After merging requirements with the same functional point, there are 24 functional requirements (original 26, FR-07 & FR-20 merged; FR-15 & FR-21 merged).

There is 1 hallucinated requirement (FR-16).

There are 24 non-hallucinated requirements.

Evaluation Note:

FR-16 is the only hallucinated requirement because it introduces an undefined discount entity, disrupting the ER diagram’s connectivity.

The merging rule was strictly applied: only repeated operations (e.g., order conversion, email sending) were merged, while other CRUD actions were not merged to avoid excessive generalization.