**USE CASE “View Product Detail”**

1. **Use case code:**

US002

1. **Brief description**

This use case describes the interaction between a Customer and the system when the Customer wishes to view detailed information about a specific product.

1. **Actors**

Customer/ Product manager

1. **Preconditions**

* The customer must have access to the system (login is optional for browsing products).
* The system must have product details stored in the database.

1. **Basic flow**

Step 1. The Customer navigates to the product catalog or uses the search function.

Step 2. The Customer selects a specific product to view details.

Step 3. The system retrieves product information from the database.

Step 4. The system displays detailed product information, including name, description, price, availability, specifications, and images.

Step 5. The system suggests related products or alternative options.

Step 6. The Customer can choose to add the product to the cart, proceed to checkout, or return to the catalog.

1. **Alternative flow**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Location** | **Condition** | **Action** | **Resume location** |
| **1** | **Step 2** | If the product does not exist or is no longer available | The system displays a message indicating that the product is unavailable and suggests alternatives. | Ends or resumes at Step 1 |
| **2** | **Step 3** | If the system fails to retrieve product data due to an error | The system displays an error message and prompts the Customer to retry. | Ends if unresolved |
| **3** | **Step 4** | If product details are incomplete (e.g., missing image, description) | The system displays an alert notifying the Customer of missing information while providing available details. | Continues at Step 5 |

1. **Input data for deliveries**

| **No** | **Data fields** | **Description** | **Mandatory** | **Valid condition** | **Example** |
| --- | --- | --- | --- | --- | --- |
| 1 | Product ID | Unique identifier for the product | Yes | Must be an existing ID | 101 |
| 2 | Product Name | Name of the product | Yes | Cannot be empty | Wireless Headphones |
| 3 | Description | Brief product details | Yes | Cannot be empty | Bluetooth over-ear headphones |
| 4 | Price | Selling price of the product | Yes | Positive float or integer | 99.99 |
| 5 | Stock Quantity | Available stock count | Yes | Non-negative integer | 50 |
| 6 | Category | Product category | Yes | Must match predefined categories | Electronics |
| 7 | Image URL | Product image link | No | Must be a valid URL format |
| 8 | Dimensions | Product size specifications | No | Must follow valid format | 30 x 20 x 10 cm |
| 9 | Manufacturer | Brand or producer name | No | Cannot be empty if present | Sony |

1. **Output data**

| **No** | **Data fields** | **Description** | **Display format** | **Example** |
| --- | --- | --- | --- | --- |
| 1 | Product ID | Unique identifier | Numeric | 101 |
| 2 | Product Name | Name of the product | Text | Wireless Headphones |
| 3 | Price | Selling price | Currency format | $99.99 |
| 4 | Availability | Stock status | Text (In Stock / Out of Stock) | In Stock |
| 5 | Category | Product category | Text | Electronics |
| 6 | SKU | Stock Keeping Unit | Alphanumeric | WH-001 |
| 7 | Description | Product description | Text | Bluetooth over-ear headphones |
| 8 | Image | Product image | Image display | [Image] |
| 9 | Related Products | Suggested alternatives | List of product names | Noise-Canceling Headphones, Wireless Earbuds |

1. **Postconditions**
   1. The Customer successfully views the detailed information of the selected product.
   2. If the product is unavailable, the system suggests alternative options.
   3. The system logs the Customer's interaction for recommendation and analytics purposes.
   4. The Customer can add the product to the cart, proceed to checkout, or browse other products.
   5. The system ensures real-time synchronization of product availability and pricing data.
   6. The system maintains a log of viewed products to enhance personalized recommendations in future browsing sessions.