**Comparison Error Checklist**

Error Checklist for E-commerce Website

* **User Authentication**: Failure to properly authenticate users during registration and login processes.
* **Product Availability Check**: Not verifying if the desired product is in stock before allowing purchase.
* **Shipping Errors**: Inaccurate handling of shipping addresses or failure to provide shipping options.
* **Payment Processing**: Issues with processing payments securely and accurately.
* **Order Tracking**: Lack of functionality to track orders and provide status updates to customers.
* **Inventory Management**: Failure to update inventory levels in real-time, leading to out-of-stock items being available for purchase.
* **Customer Support**: Inadequate support system for addressing customer inquiries, complaints, and returns.

**Version 1:**

Basic E-commerce website system:

**Code: Product Availability**

public class ECommerceSystem {

public boolean isProductAvailable(String productId) {

return Math.random() < 0.5

}

public static void main(String[] args) {

ECommerceSystem ecommerceSystem = new ECommerceSystem();

String productId = "12345"; boolean isAvailable = ecommerceSystem.isProductAvailable(productId);

if (isAvailable) {

System.out.println("Product " + productId + " is available.");

} else {

System.out.println("Product " + productId + " is out of stock.")

}}}

## Test Cases for Version 1: Basic E-commerce website System

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test** | **Test Case Description** | **Input Data** | **Expected** | **Verdict** |
| 1 | **Product availability** | 100 products. 50 in stock  Product id: ‘12345 | Product available | Passed |
| 2 | **Shipping errors** | Invalid shipping address provided  Address: “123 main st, city” | INVALID ADRESS | Failed |
| 3 | **Payment processing** | Purchase total: $100,  Payment method: credit card | Payment successful | passed |
| 4 | **Order tracking** | Order id: “abcde12345 | Shipped | Passed |
| 5 | **Inventory management** | 50 products, 5 sold  Product id: 67890 | Out of stocked | Failed |

**Improved version of the code:**

import java.util.HashMap;

import java.util.Map;

public class ECommerceSystem {

private Map<String, Integer> productsInventory;

public ECommerceSystem() {

productsInventory = new HashMap<>();

productsInventory.put("Product1", 50);

productsInventory.put("Product2", 20);

productsInventory.put("Product3", 0);

}

public boolean isProductAvailable(String productId) {

if (productsInventory.containsKey(productId)) {

int availableQuantity = productsInventory.get(productId);

return availableQuantity > 0;

}

return false;

}

public static void main(String[] args) {

ECommerceSystem ecommerceSystem = new ECommerceSystem();

String productId = "Product1";

if (ecommerceSystem.isProductAvailable(productId)) {

System.out.println(productId + " is available.");

} else {

System.out.println(productId + " is not available.");

} }}

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test** | **Test Case Description** | **Input Data** | **Expected** | **Verdict** |
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| 4 | **Order tracking** | Order id: “abcde12345 | Shipped | Passed |
| 5 | **Inventory management** | 50 products, 5 sold  Product id: 67890 | Product not available | Passed |