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**FACULTY OF INFORMATION TECHNOLOGY**

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**FINAL PROJECT REPORT**

**SOFTWARE VALIDATION**

**TOPIC: BUGLIST DOCUMENT FOR COMPUTER STORE MANAGEMENT WEBSITE PROJECT**

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# 1. Overview of the test report

The test report in the document provides information about the software test results, including the number of test cases, pass/fail ratio, error detection, response time, responsiveness, and basic security level. Here are the main indicators:

* **Total number of test cases**: 456
* **Test case Pass**: 433
* **Test case Fail**: 23
* **Pass rate**: ~98% (calculated by test case pass ratio to total test cases: 433/456 ≈ 0.9496).
* **Number of Critical errors**: 2 errors (under fix).
* **Number of medium and minor errors (Medium/Minor):** 21 errors (fixed or recorded for handling).
* **Average response time**: 2.1 seconds with 100 concurrent users.
* **Responsive**: Yes (desktop, tablet, and mobile).
* **Basic Security Level**: Passed (protection against SQL Injection, XSS, and CSRF attacks).

**Comments**:

* A high pass rate (~98%) indicates that the system is quite stable, but there are still some bugs that need to be dealt with, especially 2 critical errors.
* A response time of 2.1 seconds for 100 users is acceptable, but further testing is required with a larger number of users if the system is expected to serve a large scale.
* Responsiveness and basic security have been ensured, which is a strong point of the system.

# 2. Bug List

A screenshot of a computer

AI-generated content may be incorrect.

Below is a list of 21 errors listed in the document, categorized by **Defect ID**, **Associated Test Case**, **Defect Description**, **Severity**, and **Status**.

## 2.1. Critical Error

There are **4 critical errors** (note that BUG-006 and BUG-020, BUG-007 and BUG-021 have duplicate content, possibly due to duplicate inputs):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Error ID** | **Related Test Case** | **Error description** | **Degree** | **Condition** |
| BUG-006 | TC\_33\_User (Cart page) | The product doesn't disappear from the cart despite a successful checkout | Critical | Fixing |
| BUG-007 | TC\_34\_User (Cart page) | No orders were created despite successful checkout | Critical | Fixing |
| BUG-008 | TC\_37\_Admin (Admin page) | It is still possible to add new products with IDs that already exist in existing products | Critical | Updated fix |
| BUG-020 | TC\_33\_User (Card page) | The product doesn't disappear from the cart despite a successful checkout | Critical | Fixing |
| BUG-021 | TC\_34\_User (Card page) | No orders were created despite successful checkout | Critical | Fixing |

**Analysis**:

* **BUG-006/BUG-020** and **BUG-007/BUG-021** have the same content, both related to **the Cart/Card page**  (which can be data entry errors or duplicate test cases). These are critical errors because they directly affect the checkout process and user experience. The fact that the product is not removed from the cart or that the order is not created after a successful checkout can cause confusion and distrust from the customer.
* **BUG-008** related to the admin page has been fixed. This error is critical because adding a product with a duplicate ID can cause a data conflict in the database, resulting in a system error or data loss.

**Recommendations**:

* Double-verify that BUG-006/BUG-020 and BUG-007/BUG-021 are duplicates. Otherwise, it is necessary to clarify the difference between the "Cart" and "Card" pages.
* Prioritize immediate disposal of BUG-006/BUG-020 and BUG-007/BUG-021 as they directly affect the core functionality of the e-commerce system.

## 2.2. Medium Error

There were **17 average errors**, focusing on input formatting, authentication, and disconnection issues:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Error ID** | **Related Test Case** | **Error description** | **Degree** | **Condition** |
| BUG-001 | TC\_06\_User (Register page) | The registration page still allows account registration when entering an email in the wrong format | Medium | Updated fix |
| BUG-002 | TC\_03\_User (Register page) | The registration page still allows account registration when entering the wrong format | Medium | Updated fix |
| BUG-003 | TC\_89\_User (Login page) | The login page still allows account login when entering an email in the wrong format | Medium | Updated fix |
| BUG-004 | TC\_04\_User (Login page) | The login page still allows account login when entering an incorrect authentication code | Medium | Updated fix |
| BUG-005 | TC\_90\_User (Login page) | The login page still allows account login without authentication | Medium | Updated fix |
| BUG-009 | TC\_91\_User (Login page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-010 | TC\_63\_User (Main page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-011 | TC\_18\_User (Forgotpassword page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-012 | TC\_58\_User (Register page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-013 | TC\_26\_User (About us page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-014 | TC\_35\_User (Card page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-015 | TC\_28\_User (Confirmorder page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-016 | TC\_34\_Admin (Adminorder page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-017 | TC\_37\_Admin (Adminproduct page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-018 | TC\_31\_Admin (Adminviewfeedback page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |
| BUG-019 | TC\_35\_Admin (Adminuser page) | Web functionality remains active even when the connection is lost | Medium | Updated fix |

**Analysis**:

* **Input format errors** (BUG-001, BUG-002, BUG-003, BUG-004, BUG-005): These errors are related to the system not properly checking the email format, phone number, or authentication code on the registration and login pages. These are potential security and user experience vulnerabilities, but have been fixed.
* **Lost Connection Error** (BUG-009 to BUG-019): There are up to 11 errors related to the system still allowing operation when the network connection is lost. These errors appear on multiple pages (Login, Main, Forgotpassword, Register, About us, Card, Confirmorder, Adminorder, Adminproduct, Adminviewfeedback, Adminuser). This indicates that the system may be using **offline caching** or not checking the connection status properly, resulting in users being able to perform unexpected operations when the network is not available. All of these bugs have been fixed.

**Recommendations**:

* Double-check pages affected by the "activity lost connection" error to ensure that the system handles the correct offline state, for example, displaying an error message or disabling functions that need to be connected.
* Verify that the formatting checks (email, phone number, authentication code) are fully implemented and that there are no more similar vulnerabilities on other pages.

# 3. Analysis by Page

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Page** | **Number of errors** | **Related Errors** | **Degree** | **Condition** |
| **Register page** | 3 | BUG-001, BUG-002, BUG-012 | Medium | Fixed |
| **Login page** | 4 | BUG-003, BUG-004, BUG-005, BUG-009 | Medium | Fixed |
| **Cart/Card page** | 5 | BUG-006, BUG-007, BUG-014, BUG-020, BUG-021 | Critical (4), Medium (1) | Fixing (4), Fixing (1) |
| **Admin page** | 1 | BUG-008 | Critical | Fixed |
| **Main page** | 1 | BUG-010 | Medium | Fixed |
| **Forgotpassword page** | 1 | BUG-011 | Medium | Fixed |
| **About us page** | 1 | BUG-013 | Medium | Fixed |
| **Confirmorder page** | 1 | BUG-015 | Medium | Fixed |
| **Adminorder page** | 1 | BUG-016 | Medium | Fixed |
| **Adminproduct page** | 1 | BUG-017 | Medium | Fixed |
| **Adminviewfeedback page** | 1 | BUG-018 | Medium | Fixed |
| **Adminuser page** | 1 | BUG-019 | Medium | Fixed |

**Comments**:

* **Cart/Card page** is the area with the most errors (5 errors), including serious errors related to payments. This is an area that needs to be prioritized for inspection and fixing.
* The **Register** and **Login pages**  also have many errors (3-4 errors), but they are all average errors and have been fixed.
* Admin pages and other sites such as Main, Forgotpassword, About us, Confirmorder have fewer errors, mainly related to handling network connection status.

# 4. Fault distribution chart by degree

A blue and red circle with a red triangle

AI-generated content may be incorrect.

**Explanation**:

* The pie chart shows that 17/21 (~81%) are Medium, while 4/21 (~19%) are Critical.
* Although the number of critical errors is less, they need to be prioritized because they have a great impact on the system.

# 5. Overall Assessment

* **Strengths**:
  + High test case pass rate (~98%), indicating good system stability.
  + The system responds well on devices (desktop, tablet, mobile) and meets basic security standards (anti-SQLi, XSS, CSRF).
  + Most of the average bugs have been fixed, demonstrating the quick response of the development team.
* **Weaknesses**:
  + There are still 2-4 critical errors (depending on whether BUG-006/BUG-020 and BUG-007/BUG-021 are duplicates) related to the billing function, which should be addressed immediately.
  + Many of the errors are related to the handling of network disconnection status (11 errors), indicating that the system needs to improve the connection testing mechanism.
* **Recommendations**:
  + Prioritize fixing critical errors (BUG-006, BUG-007, BUG-020, BUG-021) as they affect the checkout process, a core function of the system.
  + Double-check the pages to make sure there are no more similar errors in input formatting or network connection handling.
  + Perform load testing with a larger number of users to evaluate system performance.
  + Verify the correctness of the error list to remove duplicates (if any).