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E-Commerce Web Platform QA Summary Report

V1.0

1. Project Overview & Scope

This report summarizes the Quality Assurance (QA) validation efforts for the E-Commerce Web Platform, a full-stack application covering user flows from browsing to checkout.

The primary objective was to validate core functionality, identify critical defects, and perform regression testing against recent fixes.

Parameter	Details
Test Scope	Frontend (React UI), Backend (Node.js REST APIs), Database (MySQL/MongoDB) integration.
Test Types	Functional, UI/UX, API, Regression, Smoke, Negative.
Key Features Tested	Login/Registration, Product Search/Filtering, Add to Cart, Checkout Process.
Environment	Chrome v119 (Windows 10) and simulated Mobile View (iPhone 12/Pixel 5).

2. Test Execution Summary

A total of **40 test cases** were executed across all modules, resulting in a **92.5% Pass Rate**. While most happy-path scenarios passed, critical failures were identified in core business flows (Cart and Checkout).

Metric	Total	Percentage
Total Test Cases	40	100%
Passed	37	92.5%
Failed	2	5.0%
Partial Pass	1	2.5%
Pass Rate	-	92.5%

Key Test Failures (Test Cases)

ID	Module	Issue	Severity
TC38	Smoke/E2E	End-to-end happy path failed at checkout (API error).	Critical
TC36	Regression	"Add to Cart" functionality still failing for specific products after a supposed fix.	Critical
TC34	Performance	Checkout page load time (4.8s) exceeded the 3-second goal.	Minor (Partial Fail)

3. Defect Analysis

A total of **10 critical and major defects** were identified, logged in Jira, and are currently in the "**To Do**" status.

Defect Distribution by Severity

Severity Level	Count	Percentage	Key Examples
Critical	3	30%	Checkout API 500 Error, Add to Cart JS Error, Cart Regression Bug.
Major	4	40%	Login Bypass (Security), Price Filter Issue, Search Functionality, Missing Order Email.
Minor / Low	3	30%	Mobile Footer Missing, Checkout Button Misalignment, Checkout Load Time.

Top 3 Failing Components (Impact Area)

1. **Checkout & Orders:** (3 Defects - Critical to Major)
 - **CRITICAL:** `Checkout API returns 500 Internal Server Error`. This prevents any successful purchase.
 - **MAJOR:** Successful checkout does not trigger the order confirmation email.
2. **Product Cart:** (2 Defects - Critical)
 - **CRITICAL:** `Add to Cart button not working for some products` due to a `TypeError: price undefined`. This breaks the core purchase flow.
 - **CRITICAL:** Regression failure confirms the Add to Cart issue persists post-patch.
3. **Authentication & Security:** (1 Defect - Major)
 - **MAJOR:** `Login allows access with invalid password`, indicating a fundamental validation failure.

4. Key Findings & Recommendations

Key Findings

- Blocker Defects Exist:** The **500 Internal Server Error** on checkout and the **invalid password login bypass** are severe defects that prevent successful deployment or pose a major security risk. These must be addressed immediately.
- Unstable Regression:** The failure of **TC36 (Cart Regression)** indicates that the underlying issue was not correctly resolved in the initial fix, highlighting a potential instability in the deployment process or a fundamental code flaw.
- Performance & UI Debt:** Minor issues like slow checkout loading and missing mobile footer suggest opportunities for front-end optimization and better responsive design implementation.

Recommendations

Recommendation	Priority	Area
1. Fix Critical Defects (500/Cart/Login)	Blocker	Backend, Auth, Cart
2. Implement Unit Tests	High	Development Process
3. Review Regression Strategy	High	QA Process
4. Optimize Checkout Performance	Medium	Frontend/API