### **Testing Report**

**Project:** Furniro E-Commerce Website  
**Day 5: Testing and Backend Refinement**

#### **Overview**

This report outlines the testing results conducted on Day 5 of the project, focusing on backend optimization and overall performance improvements.

#### **API Testing**

**Tool Used:** Postman

* **Objective:** Ensure proper functionality of all API endpoints.
* **Results:**

| **Endpoint** | **Request Type** | **Response Time (ms)** | **Status Code** | **Remarks** |
| --- | --- | --- | --- | --- |
| /api/products | GET | 200 | 200 | Data fetched successfully. |
| /api/products/:id | GET | 250 | 200 | Product details loaded. |
| /api/cart/add | POST | 300 | 201 | Item added to cart successfully. |
| /api/checkout | POST | 500 | 200 | Checkout completed successfully. |

#### **Performance Testing**

**Tool Used:** Lighthouse

* **Objective:** Assess performance metrics and identify areas for optimization.
* **Results:**

| **Metric** | **Score** | **Remarks** |
| --- | --- | --- |
| First Contentful Paint | 1.6s | Acceptable performance for desktop. |
| Largest Contentful Paint | 2.5s | Optimized after implementing lazy loading. |
| Speed Index | 10.7s | Improvement needed for mobile devices. |
| Performance Score | 65/100 | Below optimal, caching strategies planned. |

#### **Security Testing**

**Tool Used:** OWASP ZAP

* **Objective:** Identify vulnerabilities and potential threats.
* **Results:**

| **Test Type** | **Status** | **Remarks** |
| --- | --- | --- |
| Input Validation | Passed | All forms handle inputs securely. |
| Authentication Mechanisms | Passed | Secure login with hashed passwords verified. |
| API Security | Partial Pass | Some endpoints lack rate-limiting. |
| Cross-Site Scripting (XSS) | Passed | No vulnerabilities detected. |

#### **Image Optimization**

**Tool Used:** TinyPNG

* **Objective:** Reduce image sizes without quality loss.
* **Results:**

| **Image Count** | **Original Size (MB)** | **Optimized Size (MB)** | **Reduction (%)** |
| --- | --- | --- | --- |
| 50 | 120 | 85 | 29% |

#### **Conclusions**

1. API endpoints perform well under typical load but need improvements in handling high traffic.
2. Performance on mobile requires attention, focusing on speed index and resource caching.
3. Security testing revealed minor gaps, such as the need for rate-limiting on sensitive endpoints.