

Report: Website Testing and Optimization Summary

1. Test Cases Executed and Results

- **Cross-browser Testing:** Verified compatibility on Chrome, Firefox, Edge using BrowserStack.
 - Result: All browsers performed as expected. (Screen shot enclosed)
- **Responsive Design:** Tested on various devices (mobile, tablet, and desktop).
 - Result: Fully responsive with no critical issues.
- **Performance Audit:** Lighthouse audit conducted to assess loading speed and resource usage.
 - Result: Performance score improved from 65 to 90 after optimizations.
- file:///C:/Users/DELL/localhost_2025-01-22_22-51-26.report.html
- **API Reponse Testing: Result enclosed** Tested **GET** and **GET ALL** endpoints using Thunder Client in VS Code:
 - **GET:** Successfully fetched a single record by ID with a 200 OK status.
 - **GET ALL:** Retrieved all records as expected in array format.

Both endpoints worked correctly with proper responses and status codes.

- Results of Performance monitor on google chrome browser also enclosed
- Results of Security overview also enclosed

2. Performance Optimization Steps Taken

- Minified CSS and JavaScript files.
- Implemented lazy loading for images.
- Optimized server-side rendering for faster initial load time.
- Reduced bundle size by tree-shaking unused dependencies.

3. Security Measures Implemented

- Enabled HTTPS for secure communication.
- Validated and sanitized all form inputs to prevent XSS and SQL injection.
- Used HTTP headers (e.g., Content-Security-Policy) to enhance security.

4. Challenges Faced and Resolutions

- **Issue:** Lighthouse failed to generate reports locally.
 - **Resolution:** run on cli rather running on chrome directly
- **Issue:** CSS inconsistencies on Sa chrome browser directly.
 - **Resolution:** Added browser-specific fixes using media queries.

- **Issue:** High server response time.
 - **Resolution:** Implemented caching and reduced database query load.
-