# Part 2: Testing, Debugging, and Correction

## Test Plan & Documentation

A structured test plan was created to systematically test the Razeus Games website. The plan covered all key features including navigation, forms, responsiveness, and interactive elements. Each feature was tested using multiple test cases with expected outcomes, actual results, and status documented.

### Test Cases:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Feature** | **Test Case** | **Expected Result** | **Actual Result** | **Status** |
| 1 | Navigation | Hover on links | Highlights and hover animation | Highlights and hover animation | Pass |
| 2 | Navigation | Click on Home link | Redirect to Home page, Home link highlighted | Redirected and highlighted correctly | Pass |
| 3 | Navigation | Click on About Us link | Redirect to About Us page, previous link unhighlighted, About Us highlighted | Redirected and highlighted correctly | Pass |
| 4 | Navigation Dropdown | Click on dropdown link | Opens dropdown menu, links visible with hover effect | Dropdown menu opened, hover effect working | Pass |
| 5 | Navigation Button | Click on Register button | Redirects to register page, hover animation works | Redirected to register page, hover animation works | Pass |
| 6 | Form Validation | Submit blank form | Form not submitted, error messages displayed | Form didn’t submit, error messages shown | Pass |
| 7 | Form Validation | Enter username < 5 chars | Error message: “The username must have at least 5 characters” | Error message displayed | Pass |
| 8 | Form Validation | Enter username ≥ 5 chars | Success message: “Username is valid” | Success message displayed | Pass |
| 9 | Form Validation | Enter invalid email | Error message: “Please enter a valid email address” | Error message displayed | Pass |
| 10 | Form Validation | Enter valid email | Success message: “Email is valid” | Success message displayed | Pass |
| 11 | Form Validation | Enter age <1 or >100 | Error message: “Please enter an age between 1 and 100” | Error message displayed | Pass |
| 12 | Form Validation | Enter age 1–100 | Success message: “Age is valid” | Success message displayed | Pass |
| 13 | Form Validation | Enter future date of birth | Error message: “Your date of birth can't be in the future” | Error message displayed | Pass |
| 14 | Form Validation | DOB doesn’t match age | Error message: “Your date of birth does not match your age” | Error message displayed | Pass |
| 15 | Form Validation | DOB matches age | Success message: “Date of birth matches your age” | Success message displayed | Pass |
| 16 | Form Validation | Enter password without required complexity | Error message: “Password must have at least 8 characters, one uppercase letter, one lowercase letter, one number and one special character” | Error message displayed | Pass |
| 17 | Form Validation | Enter password meeting all requirements | Success message: “Password is valid” | Success message displayed | Pass |
| 18 | Form Validation | Enter mismatched confirm password | Error message: “Passwords do not match” | Error message displayed | Pass |
| 19 | Form Validation | Enter matching confirm password | Success message: “Passwords match” | Success message displayed | Pass |
| 20 | Form Validation | Enter invalid phone | Error message: “Please enter a valid NZ phone number (e.g. 0212345678 or +64212345678)” | Error message displayed | Pass |
| 21 | Form Validation | Enter valid phone | Success message: “Phone number is valid” | Success message displayed | Pass |
| 22 | Cart | Click “Add to Cart” on an item | Item added to cart, badge increments | Item added, badge incremented | Pass |
| 23 | Cart | Add same item twice | Alert: “This item is already in the cart” | Alert shown, duplicate not added | Pass |
| 24 | Cart | Increment/decrement quantity | Quantity changes correctly, total updates | Quantity updated, total updated | Pass |
| 25 | Cart | Remove item from cart | Item removed, total updated, badge decrements | Item removed, total updated, badge decremented | Pass |
| 26 | Checkout | Click “Checkout” with empty cart | Alert: “Your cart is empty. Please add items to your cart before buying.” | Alert displayed | Pass |
| 27 | Checkout | Click “Checkout” with items | Cart cleared, total reset, badge reset, success alert | Cart cleared, alert displayed, badge reset | Pass |
| 28 | Responsiveness | Desktop view | Layout displays correctly | Layout correct | Pass |
| 29 | Responsiveness | Tablet view | Layout adjusts, no overlap | Layout correct | Pass |
| 30 | Responsiveness | Mobile view | Layout adjusts, navigation works | Layout correct | Pass |
| 31 | Cross-browser | Chrome | All features work | Works as expected | Pass |
| 32 | Cross-browser | Firefox | All features work | Works as expected | Pass |
| 33 | Cross-browser | Edge | All features work | Works as expected | Pass |

Screenshot ID 1:

A screenshot of a computer

AI-generated content may be incorrect.

Screenshot ID 2:

A screenshot of a computer

AI-generated content may be incorrect.

Screenshot ID 3:

A screenshot of a computer

AI-generated content may be incorrect.

Screenshot ID 4:

A screenshot of a computer

AI-generated content may be incorrect.

Screenshot ID 5:

A screenshot of a computer

AI-generated content may be incorrect.

Screenshot ID 6:

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

Screenshot ID 7:

A screenshot of a computer

AI-generated content may be incorrect.

Screenshot ID 8:

## Testing and Debugging

### Functional Testing

* All interactive features were tested to ensure correct operation:
* **Navigation**: Links redirect properly; dropdown menus display correctly; active page highlighting works.
* **Buttons**: Register, Add to Cart, Checkout buttons perform expected actions.
* **Forms**: Tested empty fields, invalid inputs, mismatched passwords, invalid age, incorrect phone number, and date-of-birth mismatch. Form prevented submission until all fields were valid. Successful submission redirected to form-submitted.html.
* **Cart System**: Adding, incrementing, decrementing, and removing items updated total price correctly. Alert displayed when attempting checkout with an empty cart.

### HTML Validation:

All HTML files of the Razeus Games website were validated using the W3C Markup Validation Service. The validator helped identify minor issues such as unclosed tags, missing attributes, and incorrectly nested elements. These issues were corrected to ensure the site’s markup is standards-compliant, which improves cross-browser compatibility, accessibility, and reduces the likelihood of rendering errors. Screenshots of the validation results have been included in the appendix as evidence of systematic testing and correction.

### Cross-Browser Testing

The website was tested on three browsers:

* Chrome – All features functional and visually correct.
* Firefox – Functional and layout consistent.
* Edge – Functional and layout consistent with other browsers.

**Screenshot placeholders:**

* [Insert Screenshot: Chrome View]
* [Insert Screenshot: Firefox View]
* [Insert Screenshot: Edge View]

### Responsiveness Testing

Website tested using developer tools on multiple devices:

* Desktop: Full-width layout displays correctly.
* Tablet: Cards and sections resize correctly; no content overlaps.
* Mobile: Forms, navigation, and shop cards stack properly; font sizes readable; buttons functional.

**Screenshot placeholders:**

* [Insert Screenshot: Desktop View]
* [Insert Screenshot: Tablet View]
* [Insert Screenshot: Mobile View]

## 3. Testing Evidence

Evidence includes screenshots for:

* Navigation and hover effects
* Form validation (errors and success messages)
* Cart system (item added, quantity change, removed)
* Cross-browser views
* Responsiveness across devices

## 4. Bug Identification & Correction

### Bug 1: Invalid Email Submission

* **Issue:** Form allowed submission with invalid email.
* **Diagnosis:** Email regex not enforced on submit.
* **Solution:** Added validateEmail() call in submit handler; prevented default submission until valid.
* **Before:** Form submitted even if email invalid.
* **After:** Error message displayed; form not submitted.
* **Screenshot placeholders:**
  + [Before: Invalid Email Submission]
  + [After: Email Validation Error]

### Bug 2: Cart Quantity Buttons

* **Issue:** Decrement allowed quantity <1; increment didn’t always update total price.
* **Diagnosis:** Checked event listeners for quantity buttons.
* **Solution:** Disabled decrement at 1; recalculated total price on every click.
* **Before:** Quantity could be 0, price incorrect.
* **After:** Minimum quantity 1; total price correct.
* **Screenshot placeholders:**
  + [Before: Cart Quantity Issue]
  + [After: Cart Quantity Fixed]